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DELTA REPORT

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ALTR - ALTAIR ENGINEERING INC.

10-K - DECEMBER 31, 2024 COMPARED TO 10-K - DECEMBER 31, 2023

The following comparison report has been automatically generated

TOTAL DELTAS	2173
CHANGES	442
DELETIONS	720
ADDITIONS	1011

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2023 2024

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________________ to __________________

Commission file number 001-38263

ALTAIR ENGINEERING INC.
(Exact name of registrant as specified in its charter)

Delaware	**38-2591828**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1820 East Big Beaver Road, Troy, Michigan	**48083**
(Address of principal executive offices)	**(Zip Code)**

248-614-2400
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Class A Common Stock $0.0001 par value per share	**ALTR**	**The NASDAQ Global Select Market**

Securities registered pursuant to Section 12(g) of the Act:

None

(Title of class)

Indicate by a check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by a check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by a check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by a check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by a check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant, based upon the closing sale price of a share of the registrant’s Class A common stock on June 30, 2023 June 30, 2024, the last business day of the registrant’s most recently completed second fiscal quarter, as reported on the NASDAQ stock market, was $4.1 5.8 billion. Shares of the registrant’s Class A common stock and Class B common stock held by each executive officer, director, and each other person who may be deemed to be an affiliate of the registrant, have been excluded from this computation. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

On February 14, 2024 February 3, 2025, there were 55,785,000 60,401,224 shares of the registrant’s Class A common stock outstanding and 26,704,000 25,393,574 shares of the registrant’s Class B common stock outstanding.

Documents Incorporated By Reference:

Portions of the registrant’s Proxy Statement relating to the 2024 2025 Annual Meeting of Stockholders, scheduled to be filed with the Securities and Exchange Commission within 120 days after the end of the registrant’s fiscal year ended December 31, 2023 December 31, 2024, are incorporated by reference into Part III of this Annual Report on Form 10-K.

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ALTAIR ENGINEERING INC.

Annual Report on Form 10-K for the Fiscal Year Ended December 31, 2023 December 31, 2024

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 10-K contains forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 under Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, assumptions, estimates, intentions and future performance, and involve known and unknown risks, uncertainties and other factors, which may be beyond our control, and which may cause our actual results, performance or achievements to be materially different from future results, performance or achievements expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be forward-looking statements. You can identify these forward-looking statements through our use of words such as “may,” “can,” “anticipate,” “assume,” “should,” “indicate,” “would,” “believe,” “contemplate,” “expect,” “seek,” “estimate,” “continue,” “plan,” “point to,” “project,” “predict,” “could,” “intend,” “target,” “potential” and other similar words and expressions of the future.

There are a number of important factors that could cause the actual results to differ materially from those expressed in any forward-looking statement made by us. These factors include, but are not limited to:

- adverse effects on our business and financial condition that may result if we fail to complete the pending transaction with Siemens Industry Software Inc. ("Sieme Industry");
- business uncertainties and contractual restrictions on our operations while the proposed transaction with Siemens Industry is pending;
- the negative impact of stockholder litigation on our business, operating results and financial condition;
- adverse effects on our results of operations as a result of the substantial costs and management resources required in connection with the pending transaction w Siemens Industry;
- our ability to retain current employees or hire prospective employees experiencing uncertainty about their future with us as a result of the pending transaction witl Siemens Industry;
- our ability and the time it takes to acquire new customers;
- reduced spending on product design and development activities by our customers;
- our ability to successfully renew our outstanding software licenses;
- our ability to maintain or protect our intellectual property;
- our ability to retain key executive members;
- our ability to internally develop new software products, inventions and intellectual property;
- our ability to successfully integrate and realize the benefits of our past or future strategic acquisitions or investments;
- demand for our software by customers other than simulation engineering specialists and in additional industry verticals;
- acceptance of our enhanced business model by customers and investors;
- our susceptibility to factors affecting the automotive, aerospace, and banking, financial services, and insurance (BFSI) industries where we derive a substantial p of our revenues;
- the accuracy of our estimates regarding expenses and capital requirements;
- our susceptibility to foreign currency risks and fluctuations that arise because of our substantial international operations;
- the significant quarterly fluctuations of our results; and
- the uncertain effect of cyberattacks, data security incidents, or future pandemics or events on our business, operating results and financial condition, including disruption to our customers, our employees, the global economy and financial markets. markets, including potential tariff disruptions.

The foregoing does not represent an exhaustive list of matters that may be covered by the forward-looking statements contained herein or risk factors that we are faced with that may cause our actual results to differ from those anticipated in our forward-looking statements. Please see “Risk factors” in this Annual Report on Form 10-K under Part I, Item 1A, for additional risks which could adversely impact our business and financial performance.

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All forward-looking statements are expressly qualified in their entirety by this cautionary notice. You are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date of this report or the date of the document incorporated by reference into this report. We have no obligation, and expressly disclaim any obligation, to update, revise or correct any of the forward-looking statements, whether as a result of new information, future events or otherwise. We have expressed our expectations, beliefs and projections in good faith, and we believe they have a reasonable basis. However, we cannot assure you that our expectations, beliefs or projections will result or be achieved or accomplished.

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PART I

Item 1. Business

General

Altair Engineering Inc. (“Altair,” the “Company,” “we,” “us” or “our”) is a global leader in computational science intelligence that provides software and cloud solutions in simulation, high-performance computing ("HPC"), data analytics, and artificial intelligence enabling ("AI"). Altair enables organizations across broad industry segments all industries to compete more effectively and drive smarter decisions in an increasingly connected world. We deliver software and cloud solutions in the areas of simulation and design, high-performance computing (“HPC”), data analytics, and artificial intelligence (“AI”). Our products and services leverage computational intelligence to drive innovation for world - all while creating a greener, more connected, safe, and sustainable future.

Throughout this document we refer to AI as a term to encompass sub-disciplines including data analytics, data science, data preparation, and machine learning (ML) ("ML"). Altair has been incorporating AI technologies into our products for several years and we believe the evolving broad use of the term is appropriate for our product offerings, customer applications, and market opportunities.

Our simulation and AI-driven approach to innovation is powered by our broad portfolio of high-fidelity and high-performance physics solvers, our market leading technology for optimization and HPC, and our end-to-end platform for developing AI and digital twin solutions. Our integrated suite of software optimizes design performance across multiple disciplines encompassing structures, motion, fluids, thermal, electromagnetics, system modeling, and embedded systems, while also providing AI solutions and true-to-life visualization and rendering. Our HPC solutions maximize the efficient utilization of complex compute resources and streamline the workflow management of compute-intensive tasks for applications including AI, modeling and simulation, and visualization. Our data analytics, AI, and Internet of Things (IoT) ("IoT") products include data preparation, data science, MLOps, orchestration, and visualization solutions that fuel engineering, scientific, and business decisions.

We believe a critical component of our success has been our company culture, based on our core values of innovation, envisioning the future, communicating honestly and broadly, seeking technology and business firsts, and embracing diversity and risk-taking. This culture is important because it helps attract and retain top talent, encourages innovation and teamwork, and enhances our focus on achieving Altair’s corporate objectives.

Pending Merger with Siemens Industry

On October 30, 2024, Altair entered into an agreement and plan of merger (the “Merger Agreement”) with Siemens Industry and Astra Merger Sub Inc., a wholly owned subsidiary of Siemens Industry (“Merger Sub”), pursuant to which Merger Sub will merge with and into Altair (the “Merger”), with Altair surviving the Merger as a wholly owned subsidiary of Siemens Industry. Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger (the “Effective Time”), each share of our Class Common Stock and Class B Common Stock (collectively, the “Common Shares”) (including any Common Shares to the extent issued in accordance with the terms of the Merger Agreement and the Company’s Indenture (as defined below), but excluding (i) Common Shares held by the Company as treasury shares or owned by Siemens Industry, Merger Sub, or any other subsidiary of Siemens Industry immediately prior to the Effective Time and (ii) Common Shares with respect to which appraisal rights are validly and properly demanded and not withdrawn or lost under Section 262 of the Delaware General Corporation Law) issued and outstanding immediately prior to the Effective Time will automatically be converted into the right to receive $113.00 in cash, without interest (the “Merger Consideration”). The Merger Agreement provides also for the holders of vested and unvested restricted stock units and vested and unvested stock options to receive the Merger Consideration less the exercise price of such stock options, subject to the terms and conditions set forth in the Merger Agreement.

Our Board of Directors unanimously approved the Merger Agreement. On January 22, 2025, Altair's stockholders adopted the Merger Agreement at a special meeting of stockholders. The completion of the Merger remains subject to certain customary closing conditions, including among others, (i) the absence of any order or law issued by any governmental authority of competent jurisdiction prohibiting, rendering illegal or enjoining the consummation of the Merger and (ii) the receipt of all required consents, approvals, notifications or filings from or to any governmental authority under the antitrust and foreign investment laws of certain jurisdictions. Altair now anticipates that the Merger may close in the first half of 2025.

The descriptions of the Merger Agreement and the transactions contemplated thereby contained in this Annual Report on Form 10-K are summaries only and are qualified in their entirety by reference to the full text of the Merger Agreement. We filed a copy of the Merger Agreement as Exhibit 2.1 to our Current Report on Form 8-K filed with the SEC on October 30, 2024, and provided a description of the Merger Agreement in that Current Report and in our Definitive Proxy Statement on Schedule 14A, filed with the SEC on December 18, 2024, as supplemented by our Current Report on Form 8-K filed with the SEC on January 16, 2025 (the "Proxy Statement").

Products

Rising expectations of end-market customers are expanding the use of advanced simulation, data analytics, and AI across many industry verticals. Altair's thirty-nine year forty-year heritage is in solving some of the most challenging problems faced by engineers and scientists. We help companies use digital twins, intelligent models, and the convergence of simulation, HPC, and AI to predict and optimize system outcomes.

Altair is a leading provider of design and simulation software enabling customers to enhance product performance, compress development time, and reduce costs. We believe we are unique in the industry for the depth and breadth of our engineering application software offerings combined with our domain expertise and proprietary technology for harnessing HPC, cloud infrastructures, and AI technology.

Our high-performance and cloud computing workload and workflow tools empower customers to explore designs and analyze data in ways not possible in traditional computing environments. Our customers include universities, government agencies, manufacturers, pharmaceutical firms, BFSI companies, weather prediction agencies, and electronics design companies.

We are a leading provider of AI technology for data preparation, data science, MLOps, data management, and visualization. BFSI customers as well as finance and engineering departments in various industries including manufacturing, retail, and life sciences use our software to capture disparate data streams and apply analytics to make more informed business decisions.

Software Products

Altair's software products represent a comprehensive, open architecture solution for computational science and AI to empower decision making for improved product design and development, manufacturing, energy management and exploration, financial services, health care, and retail operations. We believe Altair's solutions are compelling due to their openness and usability.

Altair's products offer a comprehensive set of technologies to design and optimize high performance, efficient, innovative, and sustainable products and processes in an increasingly connected world. Our products are categorized by:

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- Physics Simulation and Concept Design
- High Performance and Cloud Computing
- Data Analytics, AI, IoT, and Smart Product Development

Altair and Altair partner applications are also available through Altair One, our modern, secure, cloud innovation gateway, to download software, execute interactive applications or batch compute intensive jobs. Altair One also enables users to easily create and access compute clusters on the fly, manage files and data between the cloud and on-prem storage, and develop web applications.

Physics Simulation and Concept Design

Altair's design, modeling, and visualization tools allow for advanced physics attributes to be modeled and rendered on top of object geometry in high fidelity. These tools are becoming more integrated, user friendly, design-centric and relevant earlier in the development process.

Our industrial and concept design tools generate early concepts to address requirements for ergonomics, aesthetics, performance, manufacturing feasibility, and cost. These tools are all driven by simulation and machine learning algorithms. We believe these products are emerging as a market force with the potential to eclipse traditional computer-aided design (CAD) in both the mechanical and electronics worlds.

At the core of Altair's simulation software portfolios are mathematical software "solvers" that use advanced computational algorithms to predict physical performance. Optimization leverages these solvers to derive the most efficient solutions to meet desired complex multi-objective requirements.

Altair's solvers are a comprehensive set of fast, scalable and reliable physics algorithms for complex problems in linear and non-linear mechanics, fluid dynamics, electromagnetics, motion, discrete elements, systems and manufacturing simulation. We invest continuously to improve the speed and accuracy of our solvers by leveraging the latest mathematical techniques and computer hardware available.

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Addressing the large market of designers, design engineers, and manufacturing engineers who are not experts in simulation is important toward increasing the use of simulation in design processes. Altair has several technologies focused on this market, including Inspire and SimSolid for mechanical design and Pollex for electronic systems and printed circuit board design.

We believe the breakthrough technology of SimSolid is game-changing and delivers extremely easy to model, fast, and accurate simulation results for complex designs. SimSolid is especially relevant for simulation-driven design and seeing rapid adoption in many customer environments. We are investing significantly in SimSolid and have released numerous new features and solution types including non-linear structural and thermal analysis. We are increasingly targeting SimSolid to address complex simulations in the electronic systems market for printed circuit boards and semiconductors.

Altair's optimization technology combined with superior multi-physics and multi-domain simulation is a key differentiator and spans our product offering. We believe customers using our technologies gain a sustainable competitive advantage by developing better products in less time.

Models are increasingly required to deliver performance across a range of physics, including mechanical systems, communication and control, printed circuit boards, and combinations of these at various levels of fidelity. Altair's math and system design tools help engineers to quickly explore requirements and performance throughout the design process.

We believe Altair's solutions are compelling due to their openness and usability, and their ability to develop signal-based controls, mixed physics models, and electronics all within one environment and at varying levels of fidelity to support decision making in each stage of a product's lifecycle. For example, our multi-disciplinary models may include mechanics, fluids, electronics, and software among other technical elements, and encompass a scope of products ranging from components to IoT-enabled "systems of systems." By employing varying degrees of fidelity, we aid the modeling process where computational requirements or data availability might otherwise prove to be obstacles.

A key strength to Altair's math and systems solutions is allowing development organizations to move seamlessly in this multi-discipline, multi-component, multi-detail space while integrating models from various authoring tools. With a broad range of

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multi-physics solvers based on an open-system approach, a strong set of model reduction techniques can be employed toward IoT-enabled product development, which can then be carried forward into device management and application development.

We believe Altair's tools for simulation of communications and control, data analytics, and real-time data streaming are particularly relevant as more products are connected and collecting data to operate in complex environments.

High-Performance Computing

Altair's high-performance computing software applications are designed to maximize the efficient utilization of customers' complex compute resources and streamline the workflow management of compute-intensive tasks. The quantity of data collected, stored, and processed is growing significantly, and our HPC technology has evolved to support big data and input/output (IO) intensive environments with storage-aware scheduling. We support applications such as modeling, simulation, artificial intelligence, and visualization in fields such as banking, financial services, insurance, weather prediction, bio-informatics, electronic design analysis, product development and lifecycle management.

Altair's high-performance tools manage and optimize where and when jobs are running and how storage is accessed and managed for customers and research institutes. We believe that HPC is increasingly mission critical for organizations around the world. Predictive modeling and analysis are computationally intensive and computing environments increasingly rely on a mix of on-premise and cloud resources.

Our powerful and easy to use solutions help IT administrators and business decision makers maximize throughput and minimize costs by leveraging sophisticated scheduling algorithms. Altair's HPC solutions are designed to enable seamless shifting of workloads from on-premise data centers to the cloud, and between different cloud providers, depending on cost or resource availability including managing spot computing purchases. We also deliver powerful orchestration capabilities to manage extremely large-scale workflows with complex dependency management for applications in electronic design automation, artificial intelligence and others.

Data Analytics, AI, IoT, and Smart Product Development

Altair's data analytics, AI, and smart product development offerings include code free and code friendly solutions for data preparation, data science, MLOps, and visualization that fuel engineering, scientific, and business decisions. that decisions, and are extensively used by banks, credit

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unions, health care, and other financial services organizations. They are also used in engineering and finance departments across many industries, including manufacturing.

Altair's broad range of data analytics solutions uniquely support legacy code created over the last forty years using the SAS language, while also developing, integrating, and deploying modern code written in Python or other newer languages, and leveraging state-of-the art, open source technology, critical for companies to remain competitive.

We have been actively integrating machine learning technologies in our broad product portfolio to capitalize on the significant momentum toward applying AI across a substantial number of companies and in many different industries.

Our data preparation tools allow users to import, clean and organize structured and unstructured data for use in reporting and in data science applications. Altair's data science solutions allow users to develop machine learning workflows with market-leading decision tree technology and scoring algorithms, and innovative approaches to AutoML, automatic feature selection, and explainable AI. Our visualization tools allow users to gain deep insights quickly with both live-streamed and historical data.

Altair's tools also include solutions to support smart connected product development including device enablement, data capture and management, edge orchestration, digital twins, and application development for connected devices. Our software is used to design IoT solutions and monitor and optimize their performance.

Going forward, we believe that development lifecycles will include digital replicas of complex processes, services and physical assets and systems, or what is known as "digital twins," which leverage the convergence of simulation and AI and are essential to creating better products, marketing them efficiently, and optimizing their performance. In our view, AI technology is transforming engineering design and process development, leveraging both synthetic data from simulations and rapidly growing databases of sensor data from field operations. Altair's customers are using AI not only to create better products but also to lower scrap rates, reduce warranty issues, and derive other business benefits.

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Altair Partner Alliance

The Altair Partner Alliance, or APA, provides access to a broad spectrum of complementary software products using customers' existing Altair Units. Our units-based subscription licensing model allows flexible and shared access to our applications and those of our partners, which can all be downloaded on-demand. This constantly growing portfolio extends their simulation and design capabilities to help create better products faster.

Software products in the APA include technologies ranging from computational fluid dynamics and fatigue to manufacturing process simulation and cost estimation, with applications specific to industry verticals including automotive, marine, motorcycles, aerospace, chemicals, and architecture. Altair plans to continue to add valuable third-party software solutions to empower innovation with comprehensive enterprise analytic and data analytics tools.

Software Services

To enable customer success and deepen our relationships with them, we engage with our customers to provide services related to our software including consulting, training, and implementation services, especially when applying optimization and data science.

Implementation and custom software services are available to help customers leverage their investment in Altair's software to streamline workflows and solve specialized industry vertical engineering and business problems. We work closely with our clients to increase organizational efficiency and decision making by tailoring these solutions to a client's own environment and processes.

We believe the unique combination of our broad industry domain knowledge and software expertise has enabled Altair to enhance and replace customers' legacy applications, integrate our software applications with client business systems, develop clean-sheet designs or custom software solutions, and transform their product development and business processes. Software services revenues are included within Software – Maintenance and other services on the Consolidated Statement of Operations.

Software Related Services

Altair engages with our customers to provide technical services throughout their entire product development lifecycle including design, engineering, and development, especially when applying optimization and data analysis. Our headquarters includes an industrial design studio, a prototype shop, and test facilities. We have expertise designing and working with controls, power electronics, traditional and

composite structures, and total system level development in the automotive, aerospace, consumer products and other markets. Our team of data analysts is experienced with applications ranging from credit scoring to predictive analytics of physical assets. Software related services revenues are included within Software related services on the Consolidated Statement of Operations.

Client Engineering Services

Altair provides Client Engineering Services, or CES, to support our customers with long-term ongoing expertise. This has the benefit of embedding us within customers, deepening our understanding of their processes, and allowing us to more quickly perceive trends in the overall market. Our presence at our customers' sites helps us to better tailor our software products' research and development, or R&D, and sales initiatives.

We operate our CES business by hiring engineering talent, IT professionals and data scientists for placement at a customer site for specific customer-directed assignments. We employ and pay them only for the duration of the placement.

We concentrate on placing simulation specialists, industrial designers, design engineers, materials experts, development engineers, manufacturing engineers and information technology specialists. As a leader in the simulation and data science technology markets, Altair attracts high caliber talent from around the world. CES is focused on placements that align strategically with customer usage of our software. We have a strong recruiting operation with sourcing specialists who identify, attract, vet, and hire technical professionals for our in-house and customer needs. We maintain a robust candidate database of highly qualified engineers, designers and data scientists.

Research and Development

Our research and development efforts are focused on enhancing the functionality, breadth, and scalability of our software, addressing new use cases, and developing additional innovative simulation technologies. Timely development of new products is essential to maintaining our competitive position, and we release new versions of our software on a regular basis.

Customer feedback, combined with our roadmap, enables us to deliver long-term value and stay ahead of market trends. Most product enhancements and new capabilities added to our offerings over the years have been developed internally, with acquisitions used to augment our capabilities with strategic technology.

Our research and development initiatives foster a culture of innovation within the organization, helping us attract and retain a highly motivated team. Altair's research and development team consists of approximately 1,400 1,600 people worldwide. We maintain research and development centers with specific technical expertise in several geographies throughout the Americas, Asia-Pacific, Europe, the Middle East and Africa.

Our research and development efforts relating to our software focus on three areas:

- ***Physics Simulation and Concept Design:*** At the core of Altair's simulation software portfolio are mathematical software "solvers" that use advanced computational algorithms to predict physical performance. Altair initially specialized in structural simulation, and our solvers are now a comprehensive set of fast, scalable and reliable physics algorithms for complex problems in linear and non-linear mechanics, fluid dynamics, electromagnetics, motion, discrete elements, systems and manufacturing simulation. Altair also invests to "couple" our solvers to simulate multiple physics domains simultaneously and is considered a market leader in the development of optimization technology, which drives solvers to find solutions to complex multi-objective design problems. R&D is also conducted to leverage HPC technology for these compute intensive applications. Solver and optimization development is conducted principally by researchers with advanced degrees in engineering, physics, computer science, and mathematics.

  The graphical applications used to construct and visualize simulation models require continuous R&D in the areas of data structures, computational methods, graphics, geometric modeling, mesh generation, and user interface design. Altair's modeling tools are becoming more design-centric and are adopting some of the capabilities of traditional CAD while leveraging simulation and optimization technology to drive design decisions rather than just simulate designs. Specific areas of R&D include handling large scale models of highly detailed and complex products, developing new methods to derive design geometry from optimizations, and unifying the modeling environment for multi-physics simulation. Adapting modeling and visualization technology for cloud deployment is also an area of active development as is supporting virtual and augmented reality hardware. Simulation-driven design requires tools to generate early concepts addressing requirements for ergonomics, aesthetics,

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  performance, and manufacturing feasibility. We believe these tools are emerging as an alternative to traditional CAD tools and will enable the democratization of simulation capabilities for designers and engineers who are not simulation specialists.

  Our industrial and concept design tools generate early concepts to address requirements for ergonomics, aesthetics, performance, manufacturing feasibility, and cost. These tools are all driven by simulation and machine learning algorithms.

- ***High-performance Computing:*** Altair's high-performance computing software applications are designed to maximize utilization of complex compute resources and streamline the workflow management of compute-intensive tasks for applications such as data analytics, AI, modeling and simulation, and visualization in fields such as financial services, weather prediction, bioinformatics, electronic design analysis, product development and lifecycle management.

  Altair develops best-in-class HPC workload management technology for large scale, highly parallel job environments as well as solutions for chip design workloads which require massive numbers of jobs to be spawned and managed for relatively short durations. We also develop powerful orchestration capabilities to manage extremely large-scale workflows with complex dependency management for applications in electronic design automation, artificial intelligence and other areas.

  We develop solutions for both CPU and GPU architectures and support all the major computer vendors. This requires ongoing collaboration with hardware suppliers who depend on our solutions to make their products run efficiently for customers.

  Much of our more recent R&D investments allow customers to easily move and manage workflows in hybrid compute environments of on-premise and cloud resources.

  The quantity of data collected, stored and processed is growing significantly, and our HPC technology has evolved to support big data and IO intensive environments with storage-aware scheduling. We also develop and deliver powerful orchestration capabilities to manage extremely large-scale workflows with complex dependency management for applications in electronic design automation, artificial intelligence and others.

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Altair's HPC development teams work closely with the simulation, data analytics, AI, and IoT development teams to ensure that our overall technology portfolio interoperates effectively and shares a common infrastructure and user experience.

- ***Data Analytics, AI, IoT, and Smart Product Development:*** Altair's data analytics, AI, IoT, and smart product development offerings support business analysts with low-code solutions as well as programmers with a rich development environment including support for modern languages like Python and traditional languages like SAS and SQL. We deliver a rich toolset for data preparation, data science, MLOps, and visualization that fuel engineering, scientific, and business decisions. We develop solutions allowing users to develop machine learning workflows with best-in-class decision tree technology and scoring algorithms, and innovative approaches to AutoML and explainable AI. We develop and release new software on a regular basis to support customers with enhancements and other requested features and technologies for data preparation, data science and visualization. In addition, we have integrated our data analytics capabilities into a modern, cloud-based solution to deliver a more unified user experience. This solution includes important enterprise level capabilities such as security, data discovery, collaboration, and operationalization of user developed machine learning workflows to gain deep insights quickly.

  Altair's solutions support smart connected product development including device enablement, data capture and management, edge orchestration, digital twins, and application development for connected devices. Our software is used to design and optimize IoT devices and connectivity, and for modeling in-service product performance. We are investing to deliver an end-to-end solution for customers developing connected products. We believe our products operate well as a complete and integrated suite and are open such that they are designed to work seamlessly with other IoT or data analytics solutions in a disaggregated fashion. Altair's Toggled LED lighting subsidiary is an important learning and deployment environment as we gain real-world experience with these technologies and share that knowledge with our customers.

  Our digital twin platform supports product development for IoT through a math-based programming environment, multi-disciplinary system modeling, and control system development, and is an important ongoing research and development effort. We believe that AI technology is transforming engineering design and process development, leveraging both synthetic data from simulations and rapidly growing databases of sensor data from field operations.

  We support our own high-level matrix-based numerical computing language, as well as more commonly used general purpose programming languages, like Python and Tcl, in an interactive programming environment for all types of math operations. We

expect to add more language and library support, broaden the math libraries, and integrate these products more deeply with Altair's other software.

In order to maintain and extend our technology leadership and competitive position, we intend to continue devoting significant effort to our research and development activities.

Sales

We serve customers in the product lifecycle management, simulation, data analytics, AI, and high-performance computing markets. Our primary users are highly educated and technical engineers and data scientists.

We engage with our enterprise customers through Altair's experienced direct sales force. We are increasing our use of inside sales and indirect channels to more efficiently address a broader set of customers in consumer products, electronics, energy and other industries. We organize cross functional teams globally to focus on our largest vertical markets such as Automotive, Aerospace, Technology and BFSI, and the largest customers in these vertical markets.

Approximately 86% 87% of our 2023 2024 software revenue was generated through our direct global sales force. These sales teams interact with key decision makers, engage deeply with users of our products by leveraging a team of Altair's technical specialists, and work with user-group managers and executives to ensure they are maximizing the utility of our software solutions. We have been expanding our direct sales team including our inside sales operations aggressively to reach more customers and market verticals.

Our direct sales force is responsible for developing new customers, ensuring high recurring rates from our existing customers, and expanding the use of Altair and partner products within customers' environments through continuous training, support, and consulting engagements. Each of our field sales professionals are supported by technical specialists with deep knowledge of our products and the broader product development domain. We believe this approach differentiates Altair from our competitors, as our focus on establishing a strong working relationship with the user community has led to expanded usage of Altair and APA partner products. Our direct sales force is organized by vertical markets and geographic regions, consisting of Americas, EMEA, and APAC.

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We leverage indirect sales channels especially in APAC and Eastern Europe and have been investing to extend our reseller relationships in all markets. Approximately 14% 13% of our 2023 2024 software revenue was generated through our growing network of indirect channel partners, resellers, and system integrators.

Data Analytics, AI, IoT, and Smart Product Development

The data analytics and AI market is segmented by industry verticals where specific domain expertise is important for success. Altair's primary data analytics and AI customer base is BFSI organizations along with finance departments across most industries including manufacturing. As we cross sell into Altair traditional manufacturing customer accounts, we are targeting finance departments, leveraging the expertise of our financial markets sales and technical teams, as well as engineering departments looking to apply data analytics and AI to improve designs, manufacturing, warranty, and in-service operations. We are leveraging our existing direct and indirect sales channels to support greater market opportunities.

High-Performance Computing Solutions

Altair's HPC solutions are sold by our global strategic sales force with sales overlay support from Altair HPC sales specialists and application engineers. We have original equipment manufacturer, or OEM, arrangements for these solutions with most of the major hardware companies. We believe these arrangements reduce competition, grow our market share and improve sales efficiency.

We offer Altair PBS Professional as both an open source and a commercial solution. Commercial sites generally license the commercial version along with support. However, many universities, government agencies and small commercial sites prefer the open-source version as their work often needs to be freely available for societal benefit. Large government and research installations generally still purchase support and often pay for specific development.

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Licensing

There are two licensing methods we employ to deliver our software solutions:

- Most products are available under Altair Units, our unique, patented units-based licensing model.
- A small subset of our products is available on a node-locked, or hardware specific, and named-user basis. This is especially true for our high-performance computing solutions.

Altair pioneered Altair Units, a patented units-based subscription licensing model for software and other digital content. This units-based subscription licensing model allows flexible and shared access to our offerings, along with more than 150 partner products. Our customers license a pool of units for their organizations giving individual users access to our portfolio of software applications as well as our growing portfolio of partner products. We believe our units-based subscription licensing model lowers barriers to adoption, creates broad engagement, encourages users to work within our ecosystem, and increases revenue. This, in turn, helps drive our recurring software license rate which has been on average approximately 91% 92% over the past five years. Historically, approximately 60% of new software revenue comes from expansion within existing customers.

Marketing

Altair's global marketing team of approximately 100 people is focused on generating new business opportunities by driving awareness, deepening customer engagement, and developing content specific to technical fields and industry verticals. Our corporate marketing programs include social media, earned media, publications, blogs, white papers and case studies. Our regional marketing program supports working relationships with our user community through education, participation in local industry events, Altair technical conferences, and webinars.

We provide marketing support to our ecosystem of resellers and third-party technology partners on both a corporate and regional level.

In order to continue to drive growth and extend our market position, we intend to continue to invest significant resources into our marketing initiatives.

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Customers

As of December 31, 2023 December 31, 2024, we had more than 13,000 customers worldwide. Our simulation and HPC customers are primarily large manufacturing enterprises, with a growing presence in small and mid-size companies. Our data analytics and AI customers include banks, credit unions, BFSI, and health care organizations along with finance and engineering departments across most industries including manufacturing.

Automotive and aerospace represent our largest industries, including 15 of the world's leading automotive manufacturers and 10 of the world's leading aerospace manufacturers. Other important industries include technology, BFSI, heavy machinery, rail and ship design, energy, government, life and earth sciences, and consumer electronics. No single customer, nor any of our resellers and OEMs, accounted for more than 2% of our 2023 2024 software billings. In 2023, 36% 2024, 32%, 31% and 33% 37% of our software billings were attributed to the Americas, EMEA, and APAC, respectively. Our global billings allocation is based on usage across each geography. Billings consists of our total revenue plus the change in our deferred revenue, excluding deferred revenue from acquisitions during the period, and is discussed under *Non-GAAP Financial Measures* included in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations of this Annual Report on Form 10-K.

For a summary of our financial information by geographic location, see Note 17 of Notes to consolidated financial statements in Item 15, Part IV of this Annual Report on Form 10-K, which is incorporated by reference.

Competition

The market for simulation, HPC, data analytics, and AI software is highly fragmented. Our primary competitors include companies such as Dassault Systèmes, Siemens AG (the parent company of Siemens Industry), Ansys, MSC Software (a Hexagon company), SAS Institute, and Alteryx. Many are large public companies, with significant financial resources. In addition to these competitors, we compete with many smaller companies offering similar software applications.

We believe the breadth and depth of Altair's software offering is unique and no single competitor addresses our entire solution set. The units model further extends this advantage with a growing APA marketplace of third-party software.

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Our simulation solutions including modeling, visualization and solvers are noted in the market for their ability to handle large and complex models. Our software applications deliver high performance and high scalability, including massive parallelization, which is extremely important in the high-end simulation market. Altair is a leader in integrating optimization technology across all our products, including multi-disciplinary applications.

We believe our solutions for data preparation, data science and AI are extremely strong, easy to use, powerful, and broadly adopted and have several unique capabilities including handling large, complex data sets coupled with our ability to intelligently import unstructured data.

To ensure customer success and deepen our relationships with them, we engage with our customers to provide consulting, implementation services, training, and support, especially when applying optimization. We believe these services, combined with our ability to leverage HPC as the industry transitions to cloud computing, positions us for future success.

We compete on a variety of factors including the breadth, depth, performance, and quality of our technical solutions. We believe our patented units-based subscription licensing model provides us with a competitive advantage by lowering barriers to adoption, creating broad engagement, and encouraging users to work within our ecosystem.

Intellectual property

We believe that our intellectual property rights are valuable and important to our business. We actively protect our investment in technology through establishment and enforcement of intellectual property rights. We protect our intellectual property through a combination of patent, copyright, trademark and trade secret protections, confidentiality procedures, and contractual provisions. The nature and extent of legal protection associated with each such intellectual property right depends on, among other things, the type of intellectual property right and the given jurisdiction in which such right arises.

As of December 31, 2023 December 31, 2024, we have 290 303 issued patents worldwide and 15 eight published patent applications worldwide. These patents and patent applications seek to protect proprietary inventions relevant to our business. We intend to pursue additional patent protection to the extent we believe it would be beneficial and cost effective. Additionally, we are the registered holder of a variety of trademarks and domain names that include “Altair” and similar variations.

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Nonetheless, our intellectual property rights may not be successfully asserted in the future or may be invalidated, circumvented, or challenged. In addition, the laws and enforcement of the laws of various countries where our products are distributed do not protect our intellectual property rights to the same extent as United States laws. Our inability to assert or enforce our intellectual property rights could harm our business.

From time to time, we receive claims alleging infringement of a third-party’s intellectual property rights, including patents. Disputes involving our intellectual property rights or those of another party have in the past and may in the future lead to, among other things, costly litigation, diversion of time, money and resources to develop or obtain non-infringing products, or delay product distribution. Any significant impairment of our core intellectual property rights could harm our business or our ability to compete.

Our products are licensed to users pursuant to signed license agreements or ‘click through’ agreements containing restrictions on use, duplication, disclosure, and transfer. Cloud-based products and associated services are provided to users pursuant to online or signed terms of service agreements containing appropriate restrictions on access and use.

We are unable to measure the full extent to which piracy of our software products exists. We believe, however, that software piracy is and can be expected to be a persistent problem that negatively impacts our revenue and financial results. We believe that our predominant subscription-based business model combined with the change from desktop to cloud based computing will shift the incentives and means by which software is pirated.

In addition, through various licensing arrangements, we receive certain rights to intellectual property of others. We expect to maintain current licensing arrangements and to secure additional licensing arrangements in the future, as needed and to the extent available on reasonable terms and conditions, to support continued development and sales of our products and services. Some of these licensing arrangements require or may require royalty payments and other licensing fees. The amount of these payments and fees may depend on various factors, including but not limited to the structure of royalty payments, offsetting considerations, if any, and the degree of use of the licensed technology.

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Employees

As of December 31, 2023 December 31, 2024, we had more than 3,200 3,300 in-house employees and more than 200 on-site Client Engineering Services employees globally. More than two-thirds of our employees are in the United States, India, Germany and UK. None of our employees in the United States are represented by a labor organization or are party to any collective bargaining arrangement. In some of the European countries in which we operate, we are subject to, and comply with, local labor law requirements in relation to the establishment of works councils. We are often required to consult and seek the consent or advice of these councils. We have never experienced a work stoppage and we believe our employee relations are collaborative. We continually recruit for top talent and invest in our global workforce to fuel diversity, professional and personal growth, and innovation.

Diversity

We believe that empowering each individual's authentic voice encourages an entrepreneurial mindset. We have worked to create a culture of inclusion where diversity and experiences are embraced and essential to our success and long-term growth. We recognize and believe that everyone deserves respect and equal treatment. We believe that we comply in all material respects with all applicable U.S. Federal, state, local and international laws governing nondiscrimination in employment in every location in which the Company operates. Our goal is to assure that all applicants and employees are treated with the same high level of respect regardless of their gender, ethnicity, religion, national origin, age, marital status, political affiliation, sexual orientation, gender identity, disability, or protected status.

We are proud to offer employee resource groups (ERGs) and Special interest groups that promote diversity and inclusion at Altair and within our communities, including:

- ***Altair Black Employee Resource Group (ABERN)*** - Established to collaborate with allies in mentorship, outreach, and professional development opportunities within Altair while supporting recruitment and retention efforts of black employees in Altair. ABERN is committed to engaging Altairians from around the world to support this goal.
- ***Altair's Women in Technology (WiT)*** - Develops and empowers women at Altair and amplifies their unique perspectives, ideas, and experiences to establish a more diverse, more inclusive workplace. We are committed to attracting top talent and ensuring each and every woman at Altair can reach her full potential.
- ***Special Interest Groups*** - Encourage employees to follow their hobbies, special interests including sports, culture & performing arts, and technology.

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Human capital

We monitor human capital metrics such as recruitment, attrition, learning & development, and diversity. Our strong brand, innovative product portfolio, cross-industry expertise, and culture support our ability to recruit and retain top talent. Our executive staff, including our CEO, are highly engaged with our workforce through podcasts, town halls, and other methods of outreach enabled by the accelerated adoption of virtual communication platforms and face-to-face engagement.

Altair’s culture has historically embraced flexible work arrangements. Whenever possible, our employees are given the opportunity and flexibility to schedule their own working hours and work-from-home schedule within the limitations set by our management in order to meet our goals and objectives. This program operates on a goal-oriented basis and is constructed on mutual trust between employees and their managers. We believe in trusting our employees, by offering them with flexibility onin work arrangements so they embrace and maintain work life balance, while continuing to be productive.

To attract, retain and motivate the best talent, we offer competitive total rewards programs, including market-competitive compensation, health & wellness programs, paid time off, parental leave, tuition assistance, employee training & development, and mentoring programs.

We seek to provide market competitive health & wellness programs across all of our global locations. Our goal is to offer best health practices to help guide wellness decisions and encourage our employees to achieve a healthy, sustainable lifestyle. We do so by fostering health & wellness through education, preventative care, comprehensive benefits programs and support. Ensuring compassion, approachability, and confidentiality in our health & wellness communication and care is very important. Our benefit programs are designed and maintained locally with intelligence from local market trends and employee feedback. The effectiveness and competitiveness of these programs is measured and monitored annually. In addition to our health & benefit program, we also provide virtual health and wellness programs, such as meditation, mental health tips, and information sessions by medical professionals.

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Information technology and cybersecurity

Our business and support functions utilize information systems that provide critical services to our employees and customers. Led by our Chief Information Security Officer, our team of professionals manage and support our communication platforms, transaction-management systems, and analytics and reporting capabilities. We use both third-party cloud services and off-site, secure data centers in North America and Europe for our core applications.

Information security and privacy are important concerns, with an escalating cyber-threat environment and evolving regulatory requirements driving continued investment in this area. We continue to evaluate and assess our systems in the changing regulatory environment.

We have in place, and seek to continuously improve, a comprehensive system of security controls, managed by a dedicated staff. Periodically, we engage the services of third parties to perform security penetration testing and may update our security controls in response. We also provide our staff with regular security risk awareness, education, and training. Despite these efforts computer viruses, hackers, employee misuse or misconduct, and other internal or external hazards including natural disasters could expose our data systems to security breaches, cyberattacks, or other disruptions.

We have incident response and business continuity plans for our operations. Our recovery plans include arrangements with our off-site secure data centers and cloud infrastructure. We believe we will be able to utilize these plans to efficiently recover key system functionality in the event that our primary systems are unavailable.

Sustainability and environment

As the world is demanding safer, more efficient, and innovative products and processes, our vision is to help customers drive decisions leveraging the convergence of simulation, HPC, and AI. By helping our customers, we help to reduce the environmental impact of goods and services across a broad array of industries worldwide. Altair published its most recent sustainability report in April 2023. 2024.

We believe that our software technology and consulting services are by their very essence at the core of designing a healthier and more sustainable future for humanity. These efforts include:

- Enabling structural optimization to inspire and refine product designs that minimize material usage and maximize performance

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- Conducting HPC workload management to ensure efficiency of energy usage and run time
- Utilizing simulation- and AI-driven innovation to rapidly develop products, processes, and experiences in a virtual world without the carbon and waste impact of multip physical prototypes
- Supporting additive manufacturing and other advanced manufacturing techniques to embody the most optimal designs developed from simulation methodologies at tl lowest cost
- Offering cloud-based applications which allow efficiently scaled shared infrastructure to be used by multiple organizations, thus eliminating countless independent compute server installations, and giving access to a broad range of applications relevant to sustainable design

We also are committed to conducting our business in a manner that manages environmental issues responsibly. We fulfill this commitment by our efforts to:

- Comply with local environmental regulations across all our global offices
- Conduct operations in an environmentally sound manner
- Manage our supply chains toward appropriate environmental practices

Acquisitions

We have acquired 51 55 companies or strategic technologies since 1996, including 22 21 in the last five years. These acquisitions brought strategic IP assets, and talented developers with expertise in disciplines in the areas of electronics, material science, crash and safety, manufacturing simulation, industrial design, photorealistic rendering and data analytics. Products that are commercially available as a result of these acquisitions include Altair PBS Works, Radioss, Evolve, AcuSolve, SimLab, Embed, Multiscale Designer, FEKO, FLUX, Thea Render, SmartWorks, ESAComp, SimSolid, Monarch, Panopticon, EDEM, PollEx, PolyFoam, Grid Engine, Mistral, Breeze, S-FRAME, Altair SLC (formerly WPS Analytics), EEvision, StarVision, RapidMiner, Genesis, OmniV, Dsim, and OmniV. FlightStream.

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During 2023 2024 we acquired the following:

- OmniQuest: KSK Analytics: In September 2023, August 2024, we acquired OmniQuest, KSK Analytics ("KSK"), a Michigan based optimization software company. OmniQuest's flagship product, Genesis, is an advanced structural analysis Japanese firm that offers strategic consulting and optimization software that uses training i and data analytics. KSK has been a reseller of the finite element to solve problems with many variables Altair RapidMiner platform for data analytics and constraints. OmniQuest will enhance Altair's optimization leadership in the market driving lightweight and structurally efficient designs across the globe. AI.
- OmniV: Metrics: In July 2023, 2024, we acquired Metrics Design Automation Inc. ("Metrics"), a Canadian company with semiconductor electronic functional simulation and design verification. The Metrics digital simulator, Dsim, will be available through Altair One, Altair's cloud innovation gateway, where it will also be available for desktop download.
- Research in Flight: In April 2024, we acquired Research in Flight, maker of FlightStream, which provides computational fluid dynamics (CFD) software with a large footprint in the aerospace and defense sector and a growing presence in marine, energy, turbomachinery, and automotive applications. The technology will be integra into the Altair HyperWorks design and simulation platform.
- Cambridge Semantics: In April 2024, we acquired the OmniV technology from XLDyn, LLC. OmniV is assets of Cambridge Semantics, a vendor agnostic MBSE requirements management solution. This technology modern data fabric provider and creator of the industry's leading analytical graph database. Cambridge Semanti technologies will enhance Altair's ability to engage in projects involving digital twins, simulation data management, and engineering data analytics. be integrated into t Altair RapidMiner platform.

For further information about our acquisitions, see Note 4 of the Notes to consolidated financial statements in Item 15, Part IV of this Annual Report on Form 10-K.

Seasonal variations

We have experienced and expect to continue to experience seasonal variations in the timing of customers' purchases of our software and services. Many customers make purchase decisions based on their fiscal year budgets, which often coincide with the calendar year. These seasonal trends materially affect the timing of our cash flows, as license fees become due at the time the license term commences based upon agreed payment terms that customers may not adhere to. terms. As a result, new and renewal licenses have been concentrated in the first and fourth quarter of the year, and our cash flows from operations have been highest late in the first quarter and early in the second quarter of the succeeding fiscal year.

Backlog

We generally enter into single year term-based software licensing subscription contracts for our solutions. The timing of our invoices to the customer is a negotiated term and thus varies among our subscription contracts. For multi-year agreements, it is common to invoice an initial amount at contract signing followed by subsequent annual invoices. At any point in the contract term, there can be amounts that we have not yet been contractually able to invoice. Until such time as these amounts are invoiced, they are not recorded in revenue, deferred revenue, or elsewhere in our consolidated financial statements, and are considered by us to be backlog.

We expect that the amount of backlog relative to the total value of our contracts will change from year to year for several reasons, including the amount of cash collected early in the contract term, the specific timing and duration of large customer subscription agreements, varying invoicing cycles of subscription agreements, the specific timing of customer renewal, changes in customer financial circumstances, and foreign currency fluctuations. Accordingly, we believe that fluctuations in backlog are not necessarily a reliable indicator of future revenue and we do not utilize backlog as a key management metric. As we generally enter into single year subscription contracts for our platform, software, backlog is not significant.

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Governmental Regulation

Our business is subject to regulation by various federal, state, local and foreign governmental agencies, including agencies responsible for monitoring and enforcing employment and labor laws, workplace safety and environmental laws, privacy and data protection laws, financial services laws, anti-bribery laws, import and export controls, federal securities laws and tax laws and regulations. In certain foreign jurisdictions, these regulatory requirements may be more stringent than those in the United States. These laws and regulations are subject to change over time and thus we must continue to monitor and dedicate resources to ensure continued compliance. We strive to maintain compliance with all applicable laws and regulations and to anticipate future regulatory developments. For additional information, see "Risk Factors - Risks related to legal or regulatory matters."

Segments

We have identified two reportable segments: Software and Client Engineering Services. For additional information about our reportable segments, see Note 17 of the Notes to consolidated financial statements in Item 15, Part IV of this Annual Report on Form 10-K, which is incorporated by reference.

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Corporate information

We were incorporated in Michigan in 1985 and became a Delaware company in October 2017. Our principal executive offices are located at 1820 E. Big Beaver Road, Troy, Michigan 48083.

Unless the context otherwise requires, the terms “Altair,” “the Company,” “we,” “us” and “our” in this Annual Report on Form 10-K refer to Altair Engineering Inc. and its subsidiaries. The Altair design logo and the marks “OptiStruct,” “RADIOSS,” “AcuSolve,” “FEKO,” “Flux,” “WinProp,” “Multiscale Designer,” “HyperStudy,” “HyperMesh,” “HyperView,” “SimLab,” “HyperCrash,” “HyperGraph,” “Inspire,” “solidThinking Evolve,” “Thea Render,” “Altair PBS Works,” “Altair PBS Professional,” “Altair PBS Cloud,” “MotionView,” “MotionSolve,” “Altair PBS Access,” “SimSolid,” “Knowledge Studio,” “Monarch,” “Panopticon,” “EDEM,” “PollEx,” “P-FRAME,” “S-FRAME,” “World Programming,” "RapidMiner," "Genesis," "OmniV," "Dsim," "FlightStream," and our other registered or common law trade names, trademarks or service marks appearing in this Annual Report on Form 10-K are our property.

Available information

We file annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy and information statements and amendments to reports filed or furnished pursuant to Sections 13(a), 14 and 15(d) of the Securities Exchange Act of 1934, as amended. The SEC also maintains a website at http://www.sec.gov that contains reports, proxy and information statements and other information regarding Altair Engineering Inc. and other companies that file materials with the SEC electronically. Copies of Altair’s reports on Form 10-K, Forms 10-Q and Forms 8-K, may be obtained, free of charge, electronically through our internet website, http://investor.altair.com under the Financials tab.

Our website is *www.altair.com*. Investors and others should note that we announce material financial information to investors using press releases, SEC filings and public conference calls. The information contained on our website is not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC.

Item 1A. Risk Factors

An investment in our Class A common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all the other information in this Annual Report on Form 10-K, including “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the consolidated financial statements and the related notes. If any of the following risks actually occurs, our business, reputation, financial condition, results of operations, revenue, and future prospects could be seriously harmed. Unless otherwise indicated, references to our business being seriously harmed in these risk factors will include harm to our business, reputation, financial condition, results of operations, revenue, liquidity and future prospects.

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SUMMARY

The following summarizes key risks and uncertainties that could materially adversely affect us. You should read this summary together with the more detailed description of each risk factor contained below.

Risks relating to the pending Merger with Siemens Industry, including that:

- the pending transaction may be delayed or the pending transaction may be terminated, in which case the market price of our Class A Common Stock may decline substantially;
- efforts to complete the pending Merger may disrupt our ongoing business and operations;
- we are restricted from pursuing alternative transactions;
- restrictions exist on our business activities; and
- litigation against us could result in substantial costs.

Risks relating to our business and industry, including risks relating to:

- the sustainability of our revenue growth rate and the impact of our revenue mix;
- the sustainability of our culture of innovation, teamwork and communications;
- our ability to expand the usage of our software by existing customers;
- our ability to introduce our software to new customers;
- the length of our sales cycle;
- our customers' ability and plans to spend on product design and development;
- our customers' software license renewal rates;
- the impact that acquisitions of businesses and products may have upon us;
- the impact of competition;
- the strength of the markets into which we sell, including automotive and BFSI;
- fluctuations in our quarterly results;
- fluctuations in foreign currency exchange rates;
- the extent to which software vendors participate in our APA program;
- the performance of our distributors and resellers;
- our ability to adapt to and lead technology changes;
- the impact on profitability of our focus on growth and research & development;
- the impact of any unanticipated departures by key employees;
- the impact of our global presence;
- the impact of any impairments of goodwill or intangible assets;
- the impact of any product liability claims or other legal proceedings: and
- the impact of the development and use of AI and machine learning in our offerings.

Risks relating to our intellectual property, including risks relating to:

- the impact of potential defects or errors in our software;
- our ability to protect and enforce our technology and intellectual property rights;
- the impact of intellectual property disputes;
- the impact of any security breaches, computer malware, computer hacking attacks and other security incidents;
- any failure of software to work seamlessly with our customers' existing software, hardware, or network environment;
- product liability claims that may arise as a result of our customers' use of our software or services;
- any failures by us to adequately train our customers regarding the use and benefits of our software; and

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- our use of open source software and open source technology.

Risks relating to legal or regulatory matters, including risks relating to:

- the difficulties associated with complying with a wide range of complex regulations, including in relation to sales to government agencies, and in a variety of jurisdictio and the impact of any non-compliance;

- the impact of changes in laws, regulations, regulatory policies and regulatory practices and uncertainties resulting from potential changes, including potential tax law changes;
- the impact of export and import controls on our ability to operate and compete in international markets;
- the breadth of data privacy and anti-bribery laws and regulations;
- our ability to use our deferred tax assets in the United States; and
- the impact of any challenges to our global tax methodology.

Risks relating to ownership of our Class A Common Stock, including risks relating to:

- the sustainability of an active public trading market for our stock;
- the volatility of the market price of our stock;
- our expectations that we will not pay dividends in the foreseeable future;
- the impact of any failure to maintain effective internal controls;
- the difficulty of predicting the impact of our dual class common stock structure;
- the nature and content of public research or reports about our company;
- the potential dilutive impact of future sales of our Class A Common Stock, including upon conversion of our Convertible Notes; and
- the impact of antitakeover provisions in our governing documents and under Delaware law.

Risks relating to our indebtedness, including risks relating to:

- the effective subordination of our Convertible Notes to our secured debt and to our subsidiaries' liabilities;
- the impact of our organizational structure, pursuant to which a substantial portion of our operations are conducted through, and a substantial portion of our assets are held by, our subsidiaries;
- our current debt service obligations and potential future debt service obligations;
- limitations on our ability to pay cash in whole or in part upon conversion of our Convertible Notes;
- the dilutive impact of issuing our Class A Common Stock upon such conversions;
- the potential that our Convertible Notes may become be convertible sooner than the mandatory convertibility date as a result of increases in the market price of our Class A Common Stock; convertibility;
- limitations that may deter or prevent a certain business combination; combinations, but not the pending transaction with Siemens Industry; and
- the impact of operating and financial covenants in our loan agreements.

General risks, including risks relating to:

- our ability to attract and retain key personnel;
- any need we may have to raise additional capital;
- the difficulties associated with predicting our growth;
- the impact of global conditions outside our control;
- business interruptions; and
- the impact of potential changes in accounting principles.

Risks associated with the pending transaction with Siemens

The pending transaction with Siemens may be delayed or not occur at all for a variety of reasons, including that the Merger Agreement is terminated, and the failure to complete the Merger could adversely affect our business, results of operations, financial condition, and the market price of our common stock.

On October 30, 2024, we entered into the Merger Agreement with Siemens Industry and Merger Sub, pursuant to which Merger Sub will merge with and into Altair, with Altair surviving the Merger as a wholly owned subsidiary of Siemens Industry.

On January 22, 2025, Altair stockholders holding a majority of the voting power of the outstanding Common Shares entitled to vote on the adoption of the Merger Agreement, voting together as a single class, approved the Merger Agreement at a special meeting of stockholders. Completion of the Merger remains subject to customary closing conditions, including, among others, (i) the absence of any order or law issued by any governmental authority of competent jurisdiction prohibiting, rendering illegal or enjoining the consummation of the Merger and (ii) the receipt of all required consents, approvals, notifications or filings from or to any governmental authority under the antitrust and foreign investment laws of certain jurisdictions. There can be no assurance that all required approvals will be obtained or that all closing conditions will otherwise be satisfied (or waived, if applicable), and, if all required approvals are obtained and all closing conditions are satisfied (or waived, if applicable), we can provide no assurance as to the terms, conditions and timing of such approvals or that the pending Merger will be completed in a timely manner or at all. Therefore, there can be no assurance that the Merger will be completed in the expected timeframe, or at all.

The Merger Agreement may be terminated under certain circumstances. Siemens Industry and Altair may agree to terminate the Merger Agreement by mutual written consent. Either Siemens Industry or Altair may terminate the Merger Agreement if (i) the Merger has not been consummated on or before October 30, 2025 (the “End Date”) or, if the closing has not occurred by the End Date solely due to a failure to obtain regulatory approvals, April 30, 2026 (the “Extended End Date”), (ii) any applicable law or final, irreversible and non-appealable order that permanently prohibits, renders illegal, or enjoins the Merger is issued by any government authority of competent jurisdiction, or (iii) the other party breaches any representation, warranty or covenant that results in the failure of the related closing condition to be satisfied, subject to a cure period in certain circumstances.

Failure to complete the Merger within the expected timeframe or at all could adversely affect our business and the market price of our common stock in a number of ways, including:

- the market price of our common stock may decline to the extent that the current market price reflects an assumption that the Merger will be consummated; and
- we have incurred, and will continue to incur, significant expenses for professional services in connection with the Merger for which we will have received little or n benefit if the Merger is not consummated.

Efforts to complete the Merger could disrupt our relationships with third parties and employees, divert management’s attention, or result in negative publicity or legal proceedings, any of which could negatively impact our operating results and ongoing business.

We have expended, and will continue to expend, significant management time and resources in an effort to complete the Merger, which may have a negative impact on our ongoing business and operations. Uncertainty regarding the outcome of the Merger and our future could disrupt our business relationships with our existing and potential customers, suppliers, service providers and other business partners, who may be more cautious in their arrangements with us or attempt to negotiate changes in existing business relationships or consider entering into business relationships with parties other than Altair. Our employees may have concerns with respect to the Merger and uncertainty regarding the outcome of the Merger could also adversely affect our ability to recruit and retain key personnel and other employees. Pending or future litigation against us and our directors and officers relating to the Merger may be distracting to management and, in the future, may require us to incur significant costs. Such litigation could result in the Merger being delayed and/or enjoined by a court of competent jurisdiction, which could prevent the Merger from being completed. The occurrence of any of these events individually or in combination could have a material and adverse effect on our business, financial condition and results of operations.

Since our stockholders have approved the Merger Agreement, the Merger Agreement now precludes us from pursuing alternative transactions to the Merger.

While we had a limited ability to pursue alternative transactions prior to the time that our stockholders approved the Merger Agreement, that ability no longer exists. By virtue of obtaining such stockholder approval, the Merger Agreement now precludes us from, among other things, soliciting alternative acquisition proposals, furnishing information to, or participating in discussions or negotiations with, third parties regarding any alternative acquisition proposals

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While the Merger Agreement is in effect, we are subject to restrictions on our business activities.

The Merger Agreement contains customary representations, warranties and covenants, including, among others, covenants regarding the conduct of our business during the pendency of the transactions contemplated by the Merger Agreementincluding restrictions on our ability in certain cases to enter into contracts, acquire or dispose of assets, enter into new lines of business, incur indebtedness or incur capital expenditures (subject to certain exceptions, as detailed in the Merger Agreement) until the Merger becomes effective or the Merger Agreement is terminated. These restrictions could prevent us from pursuing attractive business opportunities that may arise prior to the consummation of the Merger, and result in our inability to respond effectively to competitive pressures and industry developments, and may otherwise harm our business and operations.

Litigation has arisen, and more could arise, in connection with the Merger; such litigation against Altair could result in substantial costs, an injunction preventing the completion of the Merger and/or a judgment resulting in the payment of damages.

Stockholders of Altair have filed, and may in the future file, lawsuits against Altair and/or the directors and officers of Altair in connection with the Merger. As of the date of this Annual Report on Form 10-K, three lawsuits relating to the Merger (collectively, the "Lawsuits") have been filed: (i) Elstein v. Altair Engineering Inc., et al., Case No. 2025-211856-CB (the "Elstein Lawsuit"), which was filed in the State of Michigan Circuit Court for the Sixth Judicial Circuit, Oakland County, on January 3, 2025 and (ii) Jones v. Altair Engineering Inc., et al., Index No. 650098/2025 (the "Jones Lawsuit") and Kent v. Altair Engineering Inc., et al., Index No. 650113/2025 (the "Kent Lawsuit"), both of which were filed in the Supreme Court of the State of New York, County of New York, on January 7, 2025 and January 8, 2025, respectively. The Elstein Lawsuit was filed by a purported stockholder of the Company as an individual action and alleges that the Proxy Statement was materially incomplete due to certain misrepresentations and omissions in violation of Michigan's Uniform Securities Act and Michigan common law. The Elstein Lawsuit names as defendants the Company, its directors and Siemens Industry, and seeks, among other relief, an order enjoining the closing of the vote on the Merger. The Jones Lawsuit and the Kent Lawsuit were each filed by a purported stockholder of the Company as an individual action and allege that the Proxy Statement was materially incomplete due to certain misrepresentations and omissions in violation of New York common law. The Jones Lawsuit and Kent Lawsuit name as defendants the Company and its directors and seek, among other relief, an order enjoining the consummation of the Merger. The Elstein Lawsuit was voluntarily dismissed with prejudice in January 2025 prior to the consummation of the Merger.

Securities class action lawsuits and derivative lawsuits are often brought against public companies that have entered into merger agreements. Even if such a lawsuit is unsuccessful, defending against these claims can result in substantial costs.

Future lawsuits could prevent or delay the completion of the Merger and result in significant costs to Altair, including any costs associated with the indemnification of directors and officers. There can be no assurance that any of the defendants will be successful in the outcome of any existing or potential lawsuits.

Risks relating to our business and industry

We have experienced significant revenue growth and we may fail to sustain that growth rate or may not grow in the future.

We were founded in 1985 and launched our first commercial software in 1990. Our growth has primarily been attributed to the increasing sales of our simulation, high-performance computing and data analytics technologies to enhance decision making, product performance, compress development time, and reduce costs. Revenue from our software segment has historically constituted a significant portion of our total revenue. Our revenue growth could decline over time as a result of a number of factors, including increasing competition from smaller entities and well-established, larger organizations, limited ability to, or our decision not to, increase pricing, contraction of our overall market, the manner in which the markets for our products, including our data analytics products, evolve or our failure to capitalize on growth opportunities. Other factors include managing our global organization, revenues generated outside the United States that are subject to adverse currency fluctuations, uncertain international geopolitical landscapes and the acquisition of businesses which may grow more slowly than our business. Accordingly, we may not achieve similar growth rates in future periods, and you should not rely on our historical revenue growth as an indication of our future revenue or revenue growth.

If we cannot maintain our company culture of innovation, teamwork, and communication, our business may be harmed.

We believe that a critical component to our success has been our company culture, which is based on our core values of innovation, envisioning the future, communicating honestly and broadly, seeking technology and business firsts, and embracing diversity. We have invested substantial time and resources in building a company embodying this culture. As we continue to grow, we may find it difficult to maintain these valuable aspects of our corporate culture. Any failure to preserve our culture, or embed our culture in our acquired businesses, could negatively impact our future success, including our ability to attract and retain personnel, encourage innovation and teamwork, and effectively focus on and pursue our corporate objectives.

If our existing customers or users do not increase their usage of our software, or we do not add new customers, the growth of our business may be harmed.

Our software includes a comprehensive open architecture solution for simulation, high-performance computing, data analytics, and artificial intelligence.

Our future success depends, in part, on our ability to increase the:

- number of customers and users accessing our software;
- usage of our software to address expanding design, engineering, AI, computing and analytical needs; and/or
- number of our applications and functionalities accessed by users and customers through our licensing model.

Our future success may also depend upon the degree to which the evolution of our units licensing model is accepted by our current and potential customers.

In addition, through our Altair Partner Alliance, or APA, our customers have access to additional software offered by independent third parties, without the need to enter into additional license agreements.

If we fail to increase the number of customers or users and/or application usage among existing users of our software and the software of our APA partners, our ability to license additional software will be adversely affected, which would harm our operating results and financial condition.

Our ability to acquire new customers is difficult to predict because our software sales cycle can be long.

Our ability to increase revenue and maintain or increase profitability depends, in part, on widespread acceptance of our software by mid- to- large-size organizations worldwide. We face long, costly, and unpredictable sales cycles. As a result of the variability and length of the sales cycle, we have only a limited ability to forecast the timing of sales. A delay in or failure to complete sales could harm our business and financial results, and could cause our financial results to vary significantly from period to period. Our sales cycle varies widely, reflecting differences in potential customers' decision-making processes, procurement requirements, budget cycles and the specific software or products being purchased, and is subject to significant risks over which we have little or no control, including:

- longstanding use of competing products and hesitancy to change;

- customers' budgetary constraints and priorities;
- timing of customers' budget cycles;
- need by some customers for lengthy evaluations;
- hesitation to adopt new processes and technologies;
- length and timing of customers' approval processes; and
- development of software by our competitors perceived to be equivalent or superior to our software.

To the extent any of the foregoing occur, our average sales cycle may increase, and we may have difficulty acquiring new customers.

Reduced spending on product design and development activities by our customers may negatively affect our revenues.

Our revenues are largely dependent on our customers' overall product design and development activities, particularly demand from mid- to- large-size organizations worldwide and their supplier base. The licensing of our software is discretionary. Our customers may reduce their research and development budgets, which could cause them to reduce, defer, or forego licensing of our software. To the extent licensing of our software is perceived by existing and potential customers to be extraneous to their needs, our revenue may be negatively affected by our customers' delays or reductions in product development research and development spending. Customers may delay or cancel software licensing or seek to lower their costs. Deterioration in the demand for product design and development software for any reason would harm our business, operating results, and financial condition in the future.

Our business largely depends on annual renewals of our software licenses.

We typically license our software to our customers on an annual basis. In order for us to maintain or improve our operating results, it is important that our customers renew and/or increase the amount of software licensed on an annual basis. Customer renewal rates may be affected by a number of factors, including:

- our pricing or license term and those of our competitors;
- our reputation for performance and reliability;
- new product releases by us or our competitors;
- customer satisfaction with our software or support;
- consolidation within our customer base;
- availability of comparable software from our competitors;
- effects of global or industry specific economic conditions;
- our customers' ability to continue their operations and spending levels; and
- other factors, a number of which are beyond our control.

If our customers fail to renew their licenses or renew on terms that are less beneficial to us, our renewal rates may decline or fluctuate, which may harm our business.

We believe our future success will depend, in part, on the growth in demand for our software by customers other than simulation engineering specialists and in additional industry verticals.

Historically, our customers have been simulation engineering specialists. To enable concept engineering, driven by simulation, we make our physics solvers more accessible to designers by wrapping them in powerful simple interfaces. We believe our future success will depend, in part, on growth in demand for our software by these designers, which could be negatively impacted by the lack of:

- continued and/or growing reliance on software to optimize and accelerate the design process;
- adoption of simulation technology by designers other than simulation engineering specialists;
- continued proliferation of mobility, large data sets, cloud computing and IoT;

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- our ability to predict demands of designers other than simulation engineering specialists and achieve market acceptance of our software or products within these additional areas and customer bases or in additional industry verticals; or
- our ability to respond to changes in the competitive landscape, including whether our competitors establish more widely adopted products for designers other tha simulation engineering specialists.

If some or all of this software does not achieve widespread adoption, our revenues and profits may be adversely affected.

Our ability to grow our business may be adversely impacted by difficulties we may experience in integrating recent acquisitions or in integrating future acquisitions.

We believe that our recent acquisitions result in certain benefits, including expanding our portfolio of software and products and enabling us to better serve our customers' needs. However, to realize some of these anticipated benefits, the acquired businesses must be successfully integrated. The success of these acquisitions will depend in part on our ability to realize these anticipated benefits. We may fail to realize the anticipated benefits of these acquisitions for a variety of reasons, including the following:

- failure to successfully manage relationships with new or potential customers;
- failure of existing customers to accept new service and product offerings from us;
- revenue attrition in excess of anticipated levels;
- unanticipated incompatibility of technologies and systems;
- failure to leverage the increased scale of our business quickly and effectively;
- potential difficulties integrating and harmonizing financial reporting systems;

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- the loss of key employees;
- failure to effectively coordinate sales and marketing efforts to communicate the capabilities of our enhanced portfolio of software and products;
- failure to combine product offerings and product lines quickly and effectively;
- failure to convert an increasing amount of new or acquired customer relationships revenue from perpetual to annual recurring revenue streams; or
- failure to effectively invest in further sales, marketing, and research and development efforts that lead to increased revenues.

We face significant competition, which may adversely affect our ability to add new customers, retain existing customers, and grow our business.

The market for simulation, data analytics, and high-performance computing software is highly fragmented. Our primary competitors include companies such as IBM, Dassault Systèmes, Siemens AG (the parent Company of Siemens Industry), Ansys, MSC Software (a Hexagon company), and Alteryx. Many are large public companies, with significant financial resources. In addition to these competitors, we compete with many smaller companies offering similar software applications.

A significant number of companies have developed or are developing software and services that currently, or in the future, may compete with some or all of our software and services. We may also face competition from participants in adjacent markets, including two-dimensional, or 2D, and three-dimensional, or 3D, CAD, and broader PLM competitors and others that may enter our markets by leveraging related technologies and partnering with or acquiring other companies.

The principal competitive factors in our industry include:

- breadth, depth and integration of software;
- domain expertise of sales and technical support personnel;
- consistent global support;
- performance and reliability; and
- price.

Many of our current and potential competitors have longer-term and more extensive relationships with our existing and potential customers that provide them with an advantage in competing for business with those customers. They may be able to devote greater resources to the development and improvement of their offerings than we can. These competitors could incorporate additional functionality into their competing products from their wider product offerings or leverage their commercial relationships in a manner that uses product bundling or closed technology platforms to discourage enterprises from purchasing our applications.

Many existing and potential competitors enjoy competitive advantages over us, such as:

- larger sales and marketing budgets and resources;
- access to larger customer bases, which often provide incumbency advantages;
- broader global distribution and presence;
- greater resources to make acquisitions;
- the ability to bundle competitive offerings with other software and services;
- greater brand recognition;
- lower labor and development costs;

- greater levels of aggregate investment in research and development;
- larger and more mature intellectual property portfolios; and

- greater financial, technical, management and other resources.

These competitive pressures in our markets or our failure to compete effectively may result in fewer customers, price reductions, licensing of fewer units, increased sales and marketing expenses, reduced revenue and gross profits and loss of market share. Any failure to address these factors could harm our business.

Because we derive a substantial portion of our revenues from customers in the automotive industry, we are susceptible to factors affecting this industry.

An adverse occurrence, including industry slowdown, recession, political instability, costly or constraining regulations, rapid technological obsolescence, excessive inflation, rising interest rates, prolonged disruptions in one or more of our automotive customers' production schedules, supply disruptions, the imposition of new tariffs, or labor disturbances, that results in a significant decline in the volume of sales in this industry, or in an overall downturn in the business and operations of our customers in this industry, could adversely affect our business.

The automotive industry is highly cyclical in nature and sensitive to changes in general economic conditions, consumer preferences and rising interest rates. Any weakness in demand in this industry, the insolvency of a manufacturer or suppliers, or constriction of credit markets may cause our automotive customers to reduce their amount of software licensed or services requested or request discounts or extended payment terms, any of which may cause fluctuations or a decrease in our revenues and timing of cash flows.

Our quarterly results may fluctuate significantly and may not fully reflect the underlying performance of our business.

Our quarterly results of operations and our key metrics, including Billings, Adjusted EBITDA and Free Cash Flow, may vary significantly in the future and seasonally. Many customers make purchase decisions based on their fiscal year budgets, which often coincide with the calendar year. These seasonal trends materially affect our financial results, as license fees become due at the time the license term commences based upon agreed payment terms that customers may not adhere to. As a result, new and renewal licenses have been concentrated in the first and fourth quarter of the year, and our cash flows from operations have been highest late in the first quarter and early in the second quarter of the succeeding fiscal year. Period-to-period comparisons of our operating results may not be meaningful. The results of any one quarter should not be relied upon as an indication of future performance. Our quarterly financial results and key metrics may fluctuate as a result of a variety of factors including:

- seasonal variations in customer purchasing patterns;
- our ability to retain and/or increase sales to existing customers at various times;
- our ability to attract new customers;
- the addition or loss of large customers, including through their acquisitions or industry consolidations;

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- the timing of recognition of revenues;
- the amount and timing of billings;
- the amount and timing of operating expenses and capital expenditures;
- the length of sales cycles;
- significant security breaches, technical difficulties or unforeseen interruptions to the functionality of our software;
- the number of new employees added;
- the amount and timing of billing for professional services engagements;
- the timing and success of new products, features, enhancements or functionalities introduced by us or our competitors;
- changes in our pricing policies or those of our competitors;
- changes in the competitive dynamics of our industry, including consolidation among competitors;
- the timing of expenses related to the development or acquisition of technology;

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- any future charges for impairment of goodwill from acquired companies;
- extraordinary expenses such as litigation or other dispute-related settlement payments;
- the impact of new accounting pronouncements; and
- general economic conditions.

Billings have historically been highest in the first and fourth quarters of any calendar year and may vary in future quarters. This seasonality or the occurrence of any of the factors above may cause our results of operations to vary and our financial statements may not fully reflect the underlying performance of our business.

In addition, we may choose to grow our business for the long-term rather than to optimize for profitability or cash flows for a particular shorter-term period. If our quarterly results of operations fall below the expectations of investors or securities analysts, the price of our Class A common stock could decline and we could face lawsuits, including securities class action suits.

Fluctuations in foreign currency exchange rates could result in declines in our reported revenue and operating results.

As a result of our international activities, we have revenue, expenses, cash, accounts receivable and payment obligations denominated in foreign currencies including Euros, British Pounds Sterling, Indian Rupees, Japanese Yen, and Chinese Yuan. Foreign currency risk arises primarily from the net difference between non-United States dollar receipts from customers and non-United States dollar operating expenses. The value of foreign currencies against the United States dollar can fluctuate significantly, and those fluctuations may occur quickly. We cannot predict the impact of future foreign currency fluctuations.

Strengthening of the United States dollar could cause our software to become relatively more expensive to some of our customers leading to decreased dollar sales and a reduction in billings and revenue not denominated in United States dollars. Weakening of the United States dollar could result in an increase of foreign denominated expenses when reported in United States dollars. A reduction in revenue or an increase in operating expenses due to economic volatility or fluctuations in foreign currency exchange rates could have an adverse effect on our financial condition and operating results. Such foreign currency exchange rate fluctuations may make it more difficult to detect underlying trends in our business and operating results.

We do not currently engage in currency hedging activities to limit the risk of exchange rate fluctuations. In the future, we may use derivative instruments, such as foreign currency forward and option contracts, to hedge certain exposures to fluctuations in foreign currency exchange rates. The use of such hedging activities may not offset any or more than a portion of the adverse financial effects of unfavorable movements in foreign exchange rates over the limited time the hedges are in place, and the cost of those hedging techniques may have a significant negative impact on our operating results. The use of hedging instruments may introduce additional risks if we are unable to structure effective hedges with such instruments. If we are not able to successfully manage or hedge against the risks associated with currency fluctuations, our financial condition and operating results could be adversely affected.

If we fail to attract new or retain existing third-party independent software vendors to participate in the APA, we may not be able to grow the APA program.

Our APA program allows our customers to use third-party software that may be unrelated to our software, without the need to enter into additional license agreements. The APA program results in increased revenues through revenue sharing and encourages users to stay within the Altair software ecosystem. If third-party software providers are unwilling to join the APA on appropriate terms, including agreeing with our revenue share allocations, or if we are unable to retain our current APA participants, we may not be able to grow the APA program.

Licensing of our software is dependent, in part, on performance of our distributors and resellers.

We have historically licensed our software primarily through our direct sales force. We have enhanced our units licensing model such that it is able to be licensed through a network of distributors and resellers. If these distributors and resellers are unable to successfully adjust their sales methods to support our annual recurring licensing model, or become unstable, financially insolvent, or otherwise do not perform as we expect, our revenue growth derived from the distributor and reseller channels could be negatively impacted.

If we fail to adapt to technology changes our software may become less marketable, less competitive, or obsolete.

Our success depends in part on our ability to:

- anticipate customer needs;
- foresee changes in technology, including to cloud-enabled hardware, software, networking, browser and database technologies;
- differentiate our software;
- maintain operability of our software with changing technology standards; and
- develop or acquire additional or complementary technologies.

We may not be able to develop or market new or enhanced software in a timely manner, which could result in our software becoming less marketable, less competitive, or obsolete.

We believe our long-term value as a company will be greater if we focus on growth, which may negatively impact our profitability in the near term.

Part of our business strategy is to focus on our long-term growth. As a result, our profitability may be lower in the near term than it would be if our strategy were to maximize short-term profitability. Expanding our research and development efforts, sales and marketing efforts, infrastructure and other such investments may not ultimately grow our business or cause higher long-term profitability. If we are ultimately unable to achieve greater profitability at the level anticipated by analysts and our stockholders, our Class A common stock price may decline.

Our research and development may not generate revenue or yield expected benefits.

A key element of our strategy is to focus on innovation and invest significantly in research and development to create new software and enhance our existing software to address additional applications and serve new markets, both internally and through acquisitions. Research and development projects can be technically challenging and expensive, and there may be delays between the time we incur expenses and the time we are able to generate revenue, if any. Anticipated customer demand for any software we may develop could decrease after the development cycle has commenced, and we could be unable to avoid costs associated with the development of any such software. If we expend a significant amount of resources on research and development and our efforts do not lead to the timely introduction or improvement of software that is competitive in our current or future markets, it could harm our business. Our development could be limited by government regulations affecting who we can hire, and what markets we can serve.

If we lose our senior executives, we may be unable to achieve our business objectives.

We currently depend on the continued services and performance of James Scapa, our chief executive officer, and other senior executives. Many members of this executive team have served the Company for more than 15 years, with Mr. Scapa having served since our founding in 1985. Loss of Mr. Scapa's services or those of other senior executives could delay or prevent the achievement of our business objectives.

Acquisitions may dilute our stockholders, disrupt our core business, divert our resources, or require significant management attention.

Most of our software has been developed internally with acquisitions used to augment our capabilities. We may not effectively identify, evaluate, integrate, or use acquired technology or personnel from prior or future acquisitions, or accurately forecast the financial impact of an acquisition, including accounting charges.

After the completion of an acquisition, it is possible that our valuation of such acquisition for purchase price allocation purposes may change compared to initial expectations and result in unanticipated write-offs or charges, impairment of our goodwill, or a material change to the fair value of the assets and liabilities associated with a particular acquisition.

We may pay cash, incur debt, or issue equity securities to fund an acquisition. The payment of cash will decrease available cash. The incurrence of debt would likely increase our fixed obligations and could subject us to restrictive covenants or obligations. The issuance of equity securities would likely be dilutive to our stockholders. We may also incur unanticipated liabilities as a result of acquiring companies. Future acquisition activity may disrupt our core business, divert our resources, or require significant management attention.

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International operations expose us to risks inherent in international activities.

Operating in international markets requires significant resources and management attention and subjects us to regulatory, economic and political risks that are different from those in the United States. We face risks in doing business internationally that could adversely affect our business, including:

- the need to localize and adapt our software for specific countries, including translation into foreign languages and associated expenses;
- foreign exchange risk;
- import, export and sanctions restrictions and changes in trade regulation and agreements, including increased government limitations concerning sharing technol end use , and end users and possible foreign government retaliation;
- sales and customer service challenges associated with operating in different countries;
- enhanced difficulties of integrating foreign acquisitions;
- difficulties in staffing and managing foreign operations and working with foreign partners;
- different pricing environments, longer sales cycles, longer accounts receivable payment cycles, and collections issues;
- compliance challenges related to the complexity of multiple, conflicting and changing governmental laws and regulations, including the Committee on Foreign Investment in the United States (CFIUS), the Foreign Corrupt Practices Act of 1977 (FCPA), employment, ownership, trade, tax, privacy and data protection and artificial intelligence laws and regulations;
- limitations on enforcement of intellectual property rights;
- more restrictive or otherwise unfavorable government regulations affecting U.S. entities;
- increased financial accounting and reporting burdens and complexities;
- restrictions on the transfer of funds;
- withholding and other tax obligations on remittance and other payments made by our subsidiaries; and
- unstable regional, economic and political conditions.

Our inability to manage any of these risks successfully, or to comply with these laws and regulations, could reduce our sales, affect our innovation and development and harm our business.

If we are unable to match engineers to open positions in our CES business or are otherwise unable to grow our CES business, our revenue could be adversely affected.

We operate our client engineering services business by hiring engineers and data scientists for placement at a customer site for specific customer-directed assignments and pay them only for the duration of the placement. The success of this business is dependent upon our ability to recruit and retain highly skilled, CES staff to meet the requirements of our customers and to maintain ongoing

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relationships with these customers. Our CES business constituted approximately 4% and 5% of our total revenues for each of the years ended December 31, 2023 December 31, 2024 and 2022. 2023, respectively. Some of our customers satisfy their engineering personnel needs through managed service providers, or MSPs. A significant percentage of the engineers we place, either directly or through MSPs, are with U.S.-based customers and are citizens of countries other than the United States. In the event these engineers are unable to enter into, or remain in, the United States legally, we may be unable to match engineers with the appropriate skill sets matched to open customer positions. If we are unable to attract highly skilled, qualified CES staff because of competitive factors, export controls or immigration laws, or otherwise fail to match CES staff to open customer positions, our revenue may be adversely affected.

Our sales to government agencies and their suppliers may be subject to reporting and compliance requirements.

Our customers include agencies of the various governments, including, but not limited to the United States, and their suppliers of products and services. These customers may procure our software and services through various governments' mandated procurement regulations. Because of governmental reporting and compliance requirements, we may incur unexpected costs or required supply chain changes and limitations. Government agencies and their suppliers may have statutory, contractual or other legal rights to terminate contracts for convenience or due to a default, and any such termination may adversely affect our future operating results.

Our revenue mix may vary over time, which could harm our gross margin and operating results.

Our revenue mix may vary over time due to a number of factors, including the mix of term-based licenses and perpetual licenses. Due to the differing revenue recognition policies applicable to our term-based licenses, perpetual licenses and professional services, shifts in the mix between subscription and perpetual licenses from quarter to quarter, or increases or decreases in revenue derived from our professional engineering services, which have lower gross margins than our software services, could produce substantial variation in revenues recognized even if our billings remain consistent. Our gross margins and operating results could be impacted by changes in revenue mix and costs, together with other factors, including entry into new markets or growth in lower margin markets; entry into markets with different pricing and cost structures; pricing discounts; and increased price competition. Any one of these factors or the cumulative effects of certain of these factors may result in significant fluctuations in our gross margin and operating results. This variability and unpredictability could result in our failure to meet internal expectations or those of securities analysts or investors for a particular period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our common stock could decline.

If our goodwill or intangible assets become impaired, we may be required to record a significant charge to earnings, which could harm our business.

Under the Generally Accepted Accounting Principles ("GAAP"), we review our intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is required to be tested for impairment at least annually. As of December 31, 2023 December 31, 2024 and 2022, 2023, respectively, we had $458.1 million $462.5 million and $449.0 million $458.1 million of goodwill and $83.6 million $72.9 million and $107.6 million $83.6 million of other intangible assets— assets, net. An adverse change in market conditions, particularly if such change has the effect of changing one of our critical assumptions or estimates, could result in a change to the estimation of fair value that could result in an impairment charge.

In addition to our software, we source, distribute and sell products, which may expose us to product liability claims, product recalls, and warranty claims that could be expensive and harm our business.

We source, distribute and sell products, in part, through certain of our wholly owned subsidiaries. To the extent these products do not perform as expected, cause injury or death or are otherwise unsuitable for usage, we may be held liable for claims, including product liability and other claims. A product liability claim, any product recalls or an excessive warranty claim, whether arising from defects in design or failure in our supply chains could negatively affect our sales or require a change in the design process or our product sourcing, any of which may harm our reputation and business.

Issues in the development and use of AI and machine learning in our offerings, combined with an uncertain regulatory environment, may result in reputational harm, liability, or other adverse effects to our business and operating results.

We incorporate machine learning and AI technologies in our offerings and business, and we are making investments in expanding our AI capabilities in our products, services, and tools, including ongoing deployment and improvement of existing machine learning and AI technologies. AI technologies are complex and rapidly evolving. We face significant competition from other companies as well as an evolving and uncertain regulatory landscape in relation to these technologies and "big data." For example, our machine learning, big data, and AI-related initiatives may give rise to risks related to harmful content, accuracy, bias, discrimination, toxicity, intellectual property infringement or misappropriation, defamation, data privacy, and cybersecurity, among others. The development,

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adoption, introduction, and use of AI technologies in new or existing products may result in new or enhanced governmental or regulatory scrutiny, litigation, confidentiality or security risks, ethical concerns, or other complications that could adversely affect our business, reputation, or financial results. There are operational risks as well. For example, the algorithms that we or our licensors use may be flawed or may be based on datasets that are biased or insufficient. Similarly, any latency, disruption, or failure in our machine learning and AI technologies or infrastructure could result in delays or errors in our offerings.

Uncertainty around new and emerging AI technologies may require additional investment and increase our costs in the development, testing, deployment, and maintenance of machine learning models, development of new approaches and processes, and development of appropriate policies, procedures, protections and safeguards, which may be costly and could impact our expenses. Our customers or others may rely on or use content generated by AI models (e.g., images, text, and language translation) to their detriment, which may expose us to brand or reputational harm, competitive harm, and/or legal liability. The development, marketing, and use of AI technologies presents emerging ethical and social issues, and if we enable or offer solutions that draw scrutiny or controversy due to their perceived or actual impact on customers, employees, content owners, or on society as a whole, we may experience brand or reputational harm, competitive harm, and/or legal liability.

Risks related to our intellectual property

Defects or errors in our software could result in loss of revenue or harm to our reputation.

Our software is complex and, despite extensive testing and quality control, may contain undetected or perceived bugs, defects, errors, or failures. From time to time we have found defects or errors in our software and we may discover additional defects in the future. We may not find defects or errors in new or enhanced software before release and these defects or errors may not be discovered by us or our customers until after they have used the software. We have in the past issued, and may in the future need to issue, corrective releases or updates of our software to remedy bugs, defects and errors or failures. The occurrence of any real or perceived bugs, defects, errors, or failures could result in:

- lost or delayed market acceptance of our software;
- delays in payment to us by customers;
- injury to our reputation;
- diversion of our resources;
- loss of competitive position;
- claims by customers for losses sustained by them;
- breach of contract claims or related liabilities;
- increased customer support expenses or financial concessions; and
- increased insurance costs.

Any of these problems could harm our business.

Failure to protect and enforce our proprietary technology and intellectual property rights could substantially harm our business.

The success of our business depends, in part, on our ability to protect and enforce our proprietary technology and intellectual property rights, including our trade secrets, patents, trademarks, copyrights, and other intellectual property. We attempt to protect our intellectual property under trade secret, patent, trademark, and copyright laws. Despite our efforts, we may not be able to protect our proprietary technology and intellectual property rights, if we are unable to enforce our rights or if we do not detect unauthorized use of our intellectual property. Further, the risk of cyberattacks or other privacy or data security incidents may be heightened due to common, external attempts to attack our information technology systems and data, using means such as phishing. It may be possible for unauthorized third parties to copy our technology and use information that we regard as proprietary to create products and services that compete with ours. Provisions in our license agreements protect against unauthorized use, copying, transfer and disclosure of our technology, but such provisions may be difficult to enforce or are unenforceable under the laws of certain jurisdictions and countries. The laws of some countries do not protect proprietary rights to the same extent as the laws of the United States. Our international activities expose us to unauthorized copying and use of our technology and proprietary information.

We primarily rely on our unpatented proprietary technology and trade secrets. Despite our efforts to protect our proprietary technology and trade secrets, unauthorized parties may attempt to misappropriate, reverse engineer or otherwise obtain and use them. The

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contractual provisions that we enter into with employees, consultants, partners, vendors and customers may not be sufficient to prevent unauthorized use or disclosure of our proprietary technology or trade secrets and may not provide an adequate remedy in the event of unauthorized use or disclosure of our proprietary technology or trade secrets.

Policing unauthorized use of our technologies, software and intellectual property is difficult, expensive and time-consuming, particularly in countries where the laws may not be as protective of intellectual property rights as those in the United States and where mechanisms for enforcement of intellectual property rights may be weak. We may be unable to detect or determine the extent of any unauthorized use or infringement of our software, technologies or intellectual property rights.

From time to time, we may need to engage in litigation or other administrative proceedings to protect our intellectual property rights or to defend against allegations by third parties that we have infringed or misappropriated their intellectual property rights, including in connection with requests for indemnification by our customers who may face such claims. We have been approached and may be approached in the future by certain of our customers to indemnify them against third-party intellectual property claims. Litigation and/or any requests for indemnification by our customers could result in substantial costs and diversion of resources and could negatively affect our business and revenue. If we are unable to protect and enforce our intellectual property rights, our business may be harmed.

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Intellectual property disputes could result in significant costs and harm our business.

Intellectual property disputes may occur in the markets in which we compete. Many of our competitors are large companies with significant intellectual property portfolios, which they may use to assert claims of infringement, misappropriation or other violations of intellectual property rights against us or our customers. Any allegation of infringement, misappropriation or other violation of intellectual property rights by a third-party, even those without merit, could cause us to incur substantial costs defending against the claim, could distract our management from our business, and could cause uncertainty among our customers or prospective customers, all of which could have an adverse effect on our business or revenue.

Our agreements may include provisions that require us to indemnify others for losses suffered or incurred as a result of our infringement of a third-party's intellectual property rights infringement, including certain of our employees and customers.

An adverse outcome of a dispute or an indemnity claim may require us to:

- pay substantial damages;
- cease licensing our software or portions of it;
- develop non-infringing technologies;
- acquire or license non-infringing technologies; and
- make substantial indemnification payments.

Any of the foregoing or other damages could harm our business, decrease our revenue, increase our expenses or negatively impact our cash flow.

Security breaches, computer malware, computer hacking, cyberattacks and other security incidents could harm our business, reputation, brand and operating results.

Security incidents have become more prevalent across industries and may occur on our systems. Security incidents may be caused by, or result in but are not limited to, security breaches, computer malware or malicious software, computer hacking, cyberattacks on our information systems, unauthorized access to confidential information, denial of service attacks, security system control failures in our own systems or from vendors we use, email phishing, software vulnerabilities, social engineering, sabotage and drive-by downloads. Such security incidents, whether intentional or otherwise, may result from actions of hackers, criminals, nation states, vendors, employees or customers.

Our company is a highly automated business which relies on our network infrastructure and enterprise applications, third-party providers of cloud-based services, internal technology systems and website for development, marketing, operational, support and sales activities. A disruption or failure of these systems or in those of our external service providers, in the event of a major storm, earthquake, fire, telecommunications failure, cyberattack, government intervention, terrorist attack or other catastrophic event could cause system interruptions, reputational harm, delays in our product development and loss of critical data and could materially and adversely affect our ability to operate our business.

We may experience disruptions, data loss, outages and other performance problems on our systems due to service attacks, unauthorized access or other security related incidents. Any security breach or loss of system control caused by hacking, which involves efforts to gain unauthorized access to information or systems, or to cause intentional malfunctions or loss, modification or corruption of data, software, hardware or other computer equipment and the inadvertent transmission of computer malware could harm our business. A cybersecurity incident may occur on our systems, or third-party systems upon which we rely, which could disrupt Altair materially in the future.

In addition, some of our software may store and transmit customers' confidential business information in our facilities and on our equipment, networks, corporate systems and in the cloud. Security incidents could expose us to litigation, remediation costs, increased costs for security measures, loss of revenue, damage to our reputation and potential liability. Our customer data, corporate systems, and security measures may be compromised due to the actions of outside parties, employee error, malfeasance, third-party software, capacity constraints, a combination of these or otherwise and, as a result, an unauthorized party may obtain access to our data or our customers' data. Outside parties may attempt to fraudulently induce our employees to disclose sensitive information in order to gain access to our customers' data or our information. We must continuously examine and modify our security controls and business policies to address new threats, the use of new devices and technologies, and these efforts may be costly or distracting.

Because the techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems change frequently or may be designed to remain dormant until a predetermined event and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement sufficient control measures to defend against these techniques. Though it is difficult to determine what harm may directly result from any specific incident or breach, any failure to maintain confidentiality, availability, integrity, performance and reliability of our systems and infrastructure may harm our reputation and our ability to retain existing customers and attract new customers. If an actual or perceived security incident occurs, the market perception of the effectiveness of our security controls could be harmed, our brand and reputation could be damaged, we could lose customers, and we could suffer financial exposure due to such events or in connection with remediation efforts, investigation costs, regulatory fines and changed security control, system architecture and system protection measures.

We may lose customers if our software does not work seamlessly with our customers' existing software.

Our customers may use our software, which in many instances has been designed to seamlessly interface with software from some of our competitors, together with their own software and software they license from third parties. If our software ceases to work seamlessly with our customers' existing software applications, we may lose customers.

Many of our customers use our software and services to design and develop their products, which when built and used may expose us to claims.

Many of our customers use our software and services, together with software and services from other third parties and their own resources, to assist in the design and development of products intended to be used in a commercial setting. To the extent our customers design or develop a product that results in potential liability, including product liability, we may be included in resulting litigation. We may be subject to litigation defense costs or be subject to potential judgments or settlement costs for which we may not be fully covered by insurance, which would result in an increase of our expenses.

We also license certain of our software on Altair branded computer hardware, which we acquire from original equipment manufacturers, which we refer to as OEMs, exposing us to potential liability for the hardware, such as product liability. To the extent this liability is greater than the warranty and liability protection from our OEM, we may incur additional expenses, which may be significant.

If we fail to educate and train our users regarding the use and benefits of our software, we may not generate additional revenue.

Our software is complex and highly technical. We continually educate and train our existing and potential users regarding the depth, breadth, and benefits of our software including through classroom and online training. If these users do not receive education and training regarding the use and benefits of our software, or the education and training is ineffective, they may not increase their usage of our software. We may incur costs of training directly related to this activity prior to generating additional revenue.

We currently open source certain of our software and may open source other software in the future, which could have an adverse effect on our revenues and expenses and our use of open source technology could impose limitations on our ability to commercialize our software.

We offer our open matrix language, or OML, source code and a portion of our Altair PBS workload management software in an open source version to generate additional usage and broaden user-community development and enhancement of the software. We offer related software and services on a paid basis. We believe increased usage of open source software leads to increased purchases of these related paid offerings. We may offer additional software on an open source basis in the future. There is no assurance that the incremental revenues from related paid offerings will outweigh the lost revenues and incurred expenses attributable to the open sourced software.

We use open source software in some of our software and expect to continue to use open source software in the future. Although we monitor our use of open source software to avoid subjecting our software to conditions we do not intend, we may face allegations from others alleging ownership of, or seeking to enforce the terms of, an open source license, including by demanding release of the open source software, derivative works, or our proprietary source code that was developed using such software. These allegations could also result in litigation. The terms of many open source licenses have not been interpreted by United States courts. There is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our software. In such an event, we may be required to seek licenses from third parties to continue commercially offering our software, to make our proprietary code generally available in source code form, to re-engineer our software or to discontinue the sale of our software if re-engineering could not be accomplished on a timely basis, any of which could adversely affect our business and revenue.

The use of open source software subjects us to a number of other risks and challenges. Open source software is subject to further development or modification by anyone. Others may develop such software to be competitive with or no longer useful by us. It is also

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possible for competitors to develop their own solutions using open source software, potentially reducing the demand for our software. If we are unable to successfully address these challenges, our business and operating results may be adversely affected, and our development costs may increase.

Risks related to legal or regulatory matters

We operate internationally and must comply with employment and related laws in various countries, which may, in turn, result in unexpected expenses.

We are subject to a variety of domestic and foreign employment laws, including those related to safety, discrimination, whistle-blower, privacy and data protection, employment of unauthorized or undocumented employees, classification of employees, wages, statutory benefits, and severance payments. Such laws are subject to change as a result of judicial decisions or otherwise, and there can be no assurance that we will not be found to have violated any such laws in the future. Such violations could lead to the assessment of significant fines against us by federal, state or foreign regulatory authorities or to the award of damages claims, including severance payments, against us in judicial or administrative proceedings by employees or former employees, any of which would reduce our net income or increase our net loss.

Changes in government trade, immigration or currency policies may harm our business.

We operate our business globally in multiple countries that have policies and regulations relating to trade, immigration and currency, which may change. Governments may change their trade policies by withdrawing from negotiations on new trade policies, renegotiating existing trade agreements, imposing tariffs or imposing other trade restrictions or barriers. Any such changes may result in:

- changes in currency exchange rates;
- changes in political or economic conditions;
- import, sanctions limitations, or export licensing requirements or other restrictions on technology imports and exports;
- laws and business practices favoring local companies;

- changes in diplomatic and trade relationships;
- modification of existing or implementation of new tariffs;
- imposition or increase of trade barriers; or
- establishment of new trade or currency restrictions.

Any of these changes, changes in immigration policies, government intervention in currency valuation, geopolitical actions or other domestic or foreign government policy changes may adversely impact our ability to sell software and services, hire foreign workers or conduct business in particular countries, which could, in turn, harm our revenues and our business. We are headquartered in the United States and may be particularly impacted by changes affecting the United States and United States persons wherever located in the world.

We are subject to governmental sanctions, export control and import controls laws and regulations that could impair our ability to compete in international markets due to licensing requirements and subject us to liability if we are not in compliance with applicable laws.

Our software, services and hardware are subject to sanctions, export control and import laws and regulations. As a company headquartered in the United States, we are subject to U.S. regulations wherever we operate in the world, including the International Traffic in Arms Regulations, or ITAR, and Export Administration Regulations, or EAR, United States Customs regulations and various economic and trade sanctions regulations administered by the United States Treasury Department’s Office of Foreign Assets Control, presenting further risk of unexpected reporting and compliance costs. Compliance with these regulations may also prevent and restrict us from deriving revenue from potential customers in certain geographic locations for certain of our technologies or preventing employment or business activities.

If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including jail time, the possible loss of export or import privileges, loss of government contracts, fines which may be imposed on us and responsible employees or managers. Some of these violations are strict liability offenses meaning we can violate the requirements without knowledge of the violation. Obtaining the necessary authorizations, including any required license, for a particular sale may be time-consuming, is not guaranteed and may result in the delay or loss of sales opportunities. These laws and regulations change on an ongoing basis and we could be affected by third country similar requirements where we do business as well as related foreign country retaliation or geopolitical actions. In addition, changes in our software or changes in applicable sanctions, export or import regulations may create delays in the introduction and sale of our software in international markets, prevent our customers with

international operations from deploying our software or, in some cases, prevent the export or import of our software to certain countries, governments or persons altogether.

We incorporate encryption technology into portions of our software. Various countries regulate the import of certain encryption technology, including through import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our software or could limit our customers’ ability to implement our software in those countries. Encrypted software and the underlying technology may also be subject to export control restrictions. Governmental regulation of encryption technology and regulation of imports or exports of encryption products, or our failure to obtain required import or export approval for our software, when applicable, could harm our international sales and adversely affect our revenue. Compliance with applicable regulatory requirements regarding the export of our software, including with respect to new releases of our software, may create delays in the introduction of our software in international markets, prevent our customers with international operations from deploying our software throughout their globally-distributed systems or, in some cases, prevent the export of our software to some countries altogether.

United States export control laws and economic sanction programs prohibit the shipment of certain software and services to countries, governments and persons that are subject to United States economic embargoes and trade sanctions, including, but not limited to, Iran, Cuba, North Korea, Syria and the Crimea, Donetsk, and Luhansk regions of Ukraine. Any violations of such economic embargoes and trade sanction regulations could have negative consequences, including government investigations, civil and criminal penalties and reputational harm. In addition to the embargo absolute prohibitions, there are other country programs, sectoral sanctions and export requirements that limit our ability to do business in certain countries and regions such as Russia, Venezuela, China and Hong Kong. The prohibitions are continually changing.

Any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations, or change in the countries, governments, persons or technologies targeted by such regulations, could result in decreased use of our software by, or in our decreased ability to export or license our software to, existing or potential customers with international operations. Any decreased use of our software or limitation on our ability to export or license our software could adversely affect our business.

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Our business is subject to a wide range of laws and regulations, and our failure to comply with those laws and regulations could harm our business.

Our business is subject to regulation by various federal, state, local and foreign governmental agencies, including agencies responsible for monitoring and enforcing employment and labor laws, workplace safety and environmental laws, privacy and data protection laws, artificial intelligence, financial services laws, anti-bribery laws, sanctions, national security, import and export controls, anti-boycott, federal securities laws and tax laws and regulations. In certain foreign jurisdictions, these regulatory requirements may be more stringent than those in the United States. These laws and regulations are subject to change over time and thus we must continue to monitor and dedicate resources to ensure continued compliance. Non-compliance with applicable regulations or requirements could subject us to investigations, sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties or injunctions and jail time for responsible employees and managers. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, operating results, and financial condition could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management’s attention and resources and an increase in professional fees. Enforcement actions and sanctions could harm our business, operating results and financial condition.

If we or any of our employees violate the FCPA, the U.K. Bribery Act or similar anti-bribery laws we could be adversely affected.

The FCPA, the U.K. Bribery Act and similar anti-bribery laws generally prohibit companies and their intermediaries from authorizing, offering or providing, directly or indirectly, improper payments or benefits for the purpose of obtaining or retaining business to government officials, political parties and private-sector recipients. United States based companies are required to maintain records that accurately and fairly represent their transactions and have an adequate system of internal accounting controls. We operate in areas of the world that potentially experience corruption by government officials to some degree and, in certain circumstances, compliance with anti-bribery laws may conflict with local customs and practices. We cannot assure that our employees, resellers or distributors will not engage in prohibited conduct. If we are found to be in violation of the FCPA, the U.K. Bribery Act or other anti-bribery laws, we could suffer criminal or civil penalties or other sanctions.

We have significant deferred tax assets primarily in the United States, which we may not use in future taxable periods.

As of December 31, 2023 December 31, 2024 and 2022, 2023, we had gross deferred tax assets, or DTAs, of $208.5 million $227.4 million and $179.8 million $208.5 million, respectively, primarily related to capitalized research and development expenses, net operating loss carryforwards, tax credits and share-based compensation. We are entitled to a United States federal tax deduction when non-qualified stock options, or NSOs, are exercised. For the 2023

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2024 tax year, we recorded a net increase in the valuation allowance of $29.9 million $25.2 million for the gross DTAs. Our ability to utilize any net operating losses or tax credits may be limited under provisions of the Internal Revenue Code of 1986, as amended, or the Code, if we undergo an ownership change (generally defined as a greater than 50-percentage-point cumulative change, by value, in the equity ownership of certain stockholders over a rolling three-year period). We also inherited net operating losses, or NOLs, from the acquisitions of Univa and RapidMiner, which are subject to specific limitations on usage. We may or may not be able to realize the benefits of the acquired NOLs due to a number of factors, including those enumerated above. We may also be unable to realize our tax credit carryforwards prior to their expiration.

Our NOLs may also be impaired under state laws. In addition, under the 2017 Tax Cuts and Jobs Act, or Tax Act, tax losses generated in taxable years beginning after December 31, 2017 may be utilized to offset no more than 80% of taxable income annually. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities.

For tax years beginning on or after January 1, 2022, the Tax Act eliminates the option to currently deduct certain qualifying research and development expenses and requires taxpayers to capitalize and amortize such expenses over five years for research activities performed in the United States and 15 years for research activities performed outside the United States pursuant to Section 174 of the Code. Although Congress is considering legislation that would repeal or defer this capitalization and amortization requirement, it is not certain that this provision will be repealed or otherwise modified. If the requirement is not repealed or replaced, it will increase our U.S. federal and state cash taxes and reduce cash flows in fiscal year 2024 2025 and future years.

If our global tax methodology is challenged, our tax expense may increase.

As a global business headquartered in the United States, we are required to pay tax in a number of different countries, exposing us to transfer pricing and other adjustments. Transfer pricing refers to the methodology of allocating revenue and expenses for tax purposes to particular countries. Taxing authorities may challenge our transfer pricing methodology, which if successful could increase our

professional expenses and result in one-time or recurring tax charges, a higher worldwide effective tax rate, reduced cash flows, and lower overall profitability of our operations.

Our tax expense could be impacted depending on the applicability of withholding and other taxes including taxes on software licenses and related intercompany transactions under the tax laws of jurisdictions in which we have business operations. Our future income taxes may fluctuate if there is a change in the mix of income in the applicable tax jurisdictions in which we operate. We are subject to review and audit by the United States and other taxing authorities. Any review or audit could increase our professional expenses and, if determined adversely, could result in unexpected costs.

Sales and use, value-added and similar tax laws and rates vary by jurisdiction. Any of these jurisdictions may assert that such taxes are applicable, which could result in tax assessments, penalties and interest.

We could be subject to adverse changes in tax laws, regulations and interpretations or challenges to our tax positions.

We are subject to tax laws and regulations of the U.S. federal, state and local governments as well as various non-U.S. jurisdictions. Potential changes in existing tax laws, including future regulatory guidance, may impact our effective income tax rate and tax payments. There can be no assurance that changes in tax laws or regulations, both within the U.S. and the other jurisdictions in which we operate, will not materially and adversely affect our effective income tax rate, tax payments, financial condition and results of operations. Similarly, changes in tax laws and regulations that impact our customers and counterparties or the economy generally may also impact our financial condition and results of operations.

In addition, tax laws and regulations are complex and subject to varying interpretations, and any significant failure to comply with applicable tax laws and regulations in all relevant jurisdictions could give rise to substantial penalties and liabilities. Any changes in enacted tax laws, rules or regulatory or judicial interpretations; any adverse outcome in connection with tax audits in any jurisdiction; or any change in the pronouncements relating to accounting for income taxes could materially and adversely impact our effective income tax rate, tax payments, financial condition and results of operations.

Our business may collect personal information and is subject to data protection laws.

Companies that collect or process personal information may be regulated by data protection laws adopted by the United States, various states including California, Nevada, Virginia, Colorado, Connecticut and Utah, and foreign jurisdictions, including the European Union, the United Kingdom, Canada, Brazil and China. The European Union

General Data Protection Regulation and implementing legislation adopted by member states of the European Economic Area ("GDPR") in 2018, and the United Kingdom Data Protection Act 2018 (the "UK

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"UK GDPR") frequently serve as a model for other countries. All of these data protection laws regulate the collection, use, storage, disclosure and security of personal information, such as names, email addresses, Internet Protocol addresses and other online identifiers, business contact data, and customer profiles, that may be used to identify or locate an individual, including customers, employees, business contracts, website visitors and users of mobile apps.

The legal, financial and business impact of these data protection laws and regulations is far-reaching and may require us to modify our data processing practices and policies and incur substantial costs and expenses in an effort to comply. We may be required to implement privacy and security policies, permit individuals to access and correct their own personal information that is collected, stored or maintained by us, and require us to transfer, delete or return their personal information. It may also be necessary for us to obtain individuals' affirmative consent to collect, use or disclose their personal information for certain purposes. Governmental authorities could prohibit any personal information collected in a country from being transferred or disclosed outside of that country or condition such transfer or disclosure on compliance with specific requirements or written agreements. We also may find it necessary or desirable to join industry or other self-regulatory bodies or other information security, or data protection, related organizations that require compliance with their rules pertaining to information security and data protection. We may agree to be bound by additional contractual obligations relating to our collection, use and disclosure of personal, financial and other data. Our failure to comply with these data protection laws may result in governmental actions, fines and non-monetary penalties, or civil actions, and reputational damage, which may harm our business.

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Proposed or new legislation and regulations could significantly affect our business.

The GDPR, which became effective in May 2018, applies to all our business conducted in the European Economic Area (the "EEA"). In the post-Brexit area, our business in the United Kingdom is regulated by the U.K. GDPR that is substantially similar to the GDPR. New data protection laws have just come into effect in Brazil and China, and a new Indian law has been passed in 2023 and is expected to come into effect soon. In the US, state-specific general data protection laws are in effect in California, Virginia, Colorado, Nevada, Connecticut, Montana, Delaware, Iowa, Nebraska, New Hampshire, New Jersey and Utah, and new data protection laws will become became effective during 2024 in the states of Texas, Florida, Oregon, and Montana. Similar laws will become effective in the next two years in another five several states and are pending in many more states. These data protection laws and regulations impose many obligations, and we will need to continue dedicating financial resources and management time to compliance and training in the coming years. Data protection laws, for example, may require, that regulated entities expand disclosures about how personal data is used, mechanisms for obtaining consent from data subjects, controls for data subjects with respect to their personal data (including by enabling them to exercise rights to erasure and data portability), limitations on retention of personal data and mandatory data breach notifications. There are also restrictions on data transfers and the security of the personal data, frequently with substantial fines and penalties associated with violations. violations (including liability for private action in the US). The GDPR, for example, provides that supervisory authorities in the European Union may impose administrative fines for certain infringements of the GDPR (up to EUR 20,000,000, or 4% of an undertaking's total, worldwide, annual revenue, whichever is higher). Individuals who sustain damages because a regulated entity fails to comply with the GDPR have the right to seek compensation from such entity directly. Compliance with data protection laws, the rapid pace of adopting new and amended laws, and necessary monitoring and training will require significant expenditure of resources on an ongoing basis, and there can be no assurance that the measures we have taken for the purposes of compliance will be successful in preventing violations of such laws, cyberattacks, governmental actions or civil proceedings. Given the potential fines, liabilities and damage to our reputation in the event of an actual or perceived violation of data protection laws, any violation may have an adverse effect on our business and operations.

As the number of jurisdictions with data privacy regulations increase and our global footprint expands, we anticipate that it will be necessary for us to increase the amount we expend on compliance and training in this area.

Risks related to ownership of our Class A common stock

An active public trading market for our Class A common stock may not be sustained.

Our Class A common stock is listed on the Nasdaq Global Select Market under the symbol "ALTR." However, we cannot assure you that an active trading market will be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the price of shares of Class A common stock. An inactive market may impair our ability to raise capital by selling shares and our ability to use our capital stock to acquire other companies or technologies. We cannot predict the prices at which our Class A common stock will trade. Our Class A common stock will cease to be publicly traded upon consummation of our pending Merger with Siemens Industry.

The market price of our Class A common stock can be volatile.

The market price of our Class A common stock has and may continue to fluctuate from time to time. Our market price may continue to fluctuate substantially depending on a number of factors, many of which are beyond our control and may not be related to our operating

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performance. These fluctuations could cause you to lose all or part of your investment in our Class A common stock, since you might not be able to sell your shares at or above the price you paid for our Class A common stock. Factors that could cause fluctuations in the market price of our Class A common stock include the following:

- any event that results in the termination of our Merger Agreement with Siemens Industry or materially delays the consummation of that transaction;
- price and volume fluctuations in the overall stock market from time to time, including as a result of trends in the economy as a whole;
- volatility in the market prices and trading volumes of technology stocks;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industries in particular;
- the volume of shares of our Class A common stock available for public sale;
- sales of shares of our Class A common stock;
- additional shares of our Class A common stock being sold into the market by our existing stockholders, or the anticipation of such sales, including sales of our Cl common stock upon exercise of outstanding options or upon conversion of our Class B common stock into shares of Class A common stock;
- failure of financial analysts to maintain coverage of us, changes in financial estimates by any analysts who follow our company, or our failure to meet these estim or the expectations of investors;

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- the financial projections we may provide to the public, any changes in these projections or our failure to meet these projections;
- announcements by us or our competitors of new software or new or terminated significant contracts, commercial relationships or capital commitments;
- public analyst or investor reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes or fluctuations in our operating results;
- actual or anticipated developments in our business, our customers' businesses, or our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or our solutions, or third-party proprietary rights;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- any major changes in our management or our board of directors;

- general economic conditions and slow or negative growth of our markets; and
- other events or factors, including those resulting from major weather events, war, potential global health issues, incidents of terrorism or responses to these even

In addition, the stock market in general, and the market for technology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors may affect the market price of our Class A common stock, regardless of our actual operating performance. In the past, following periods of volatility in the overall market and the market prices of a particular company's securities, securities class action litigation has often been instituted against that company. We may become the target of this type of litigation in the future. Securities litigation, if instituted against us, could result in substantial costs and divert our management's attention and resources from our business.

We do not intend to pay dividends in the foreseeable future. As a result, your ability to achieve a return on your investment will depend on appreciation in the price of our Class A common stock.

We have never declared or paid any cash dividends on our Class A common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our Class A common stock in the foreseeable future. Any determination to pay dividends in the future will be at the discretion of our board of directors. directors and subject to restrictions set forth in our Merger Agreement with Siemens Industry. Consequently, your only opportunity to achieve a return on your investment in our company will be if the market price of our Class A common stock appreciates and you sell your shares at a profit. There is no guarantee that the price of our Class A common stock that will prevail in the market will ever exceed the price that you paid.

If we fail to maintain effective internal controls, we may not be able to report financial results accurately or on a timely basis, or to detect fraud, which could have a material adverse effect on our business or share price.

Effective internal controls are necessary for us to provide reasonable assurance with respect to our financial reports and to effectively prevent financial fraud. Pursuant to the Sarbanes-Oxley Act of 2002, or SOX, we are required to periodically evaluate the effectiveness of the design and operation of our internal controls. Internal controls over financial reporting may not prevent or detect misstatements because of inherent limitations, including the possibility of human error or collusion, the circumvention or overriding of controls, or fraud. If we fail to maintain an effective system of internal controls, our business and operating results could be harmed, and we could fail to meet our reporting obligations, which could have a material adverse effect on our business and our share price.

As a public company, we are required to maintain internal controls over financial reporting and to report any material weaknesses in such internal controls. Section 404 of SOX requires annual management assessments of the effectiveness of our internal controls over financial reporting. We have designed, implemented and tested the internal control over financial reporting required to comply with this obligation, which was and is time consuming, costly, and complicated. A material weakness is defined as a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. We cannot assure investors that we will not have material weaknesses in the future. If we identify material weaknesses in our internal control over financial reporting in the future or if we are unable to successfully remediate the identified material weaknesses or, if we are unable to comply with the requirements of Section 404 in a timely manner or assert that our internal control over financial reporting is effective, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our Class A common stock could be negatively affected, and we could become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, which could require additional financial and management resources.

If financial or industry analysts do not publish research or reports about our business or if they issue inaccurate or unfavorable commentary or downgrade our Class A common stock, our stock price and trading volume could decline.

The trading market for our Class A common stock may be influenced by the research and reports that industry or financial analysts publish about us or our business. We do not control these analysts, or the content and opinions included in their reports. We may be slow to attract research coverage, and the analysts who publish information about our Class A common stock still have relatively little experience with our company, which could affect their ability to accurately forecast our results and make it more likely that we fail to meet their estimates. If any of the analysts who cover us issue an inaccurate or unfavorable opinion regarding our stock price, our stock price would likely decline. In addition, the stock prices of many companies in the technology industry have declined significantly after those companies have failed to meet, or often times failed to exceed, the financial guidance publicly announced by the companies or the expectations of analysts. Upon entering into our Merger Agreement with Siemens Industry, we announced that we were suspending our practice of providing guidance with respect to our results of operations. If we resume our practice of providing such guidance and our financial results fail to meet, or fail to exceed, our announced guidance or the expectations of analysts or public investors, analysts could downgrade our Class A common stock or publish unfavorable research about us. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

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Future sales of substantial amounts of our Class A common stock may cause our stock price to decline.

Future sales of a substantial number of shares of our Class A common stock, particularly sales by our directors, executive officers and significant stockholders could adversely affect the market price of our Class A common stock and may make it more difficult to sell Class A common stock at a time and price that you deem appropriate. As of December 31, 2023 December 31, 2024, we had an aggregate of 55,239,516 60,180,921 shares of Class A common stock and 26,814,574 25,393,574 shares of Class B common stock outstanding.

Shares held by directors, executive officers and other affiliates are subject to volume limitations under Rule 144 under the Securities Act and various vesting agreements.

We have registered the offer and sale of an aggregate of approximately 29,939,594 a substantial number of shares of Class A common stock that have been issued or reserved for future issuance under our equity compensation plans on a Form S-8 registration statement. These shares can be freely sold in the public market upon issuance, unless they are held by “affiliates,” as that term is defined in Rule 144 of the Securities Act. Additionally, the number of shares of Class A common stock available for grant and issuance under our 2017 Equity Incentive Plan is subject to an automatic annual increase on January 1 of each year beginning in 2018 by an amount equal to the lesser of (i) 3% of the number of shares of all classes of our common stock outstanding on December 31 of the preceding calendar year or (ii) a lesser number of shares of Class A common stock determined by our board of directors. We also intend to register the offer and sale of any shares of Class A common stock resulting from such increases. If the holders of these shares choose to sell a large number of shares, they could adversely affect the market price for our Class A common stock.

We may also issue shares of our Class A common stock or securities convertible into shares of our Class A common stock from time to time in connection with a financing, acquisition, investment or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the trading price of our Class A common stock to decline.

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The dual class structure of our common stock has the effect of concentrating voting control with certain stockholders who hold shares of our Class B common stock, including our founders, who hold in aggregate approximately 83% 81% of the voting power of our capital stock. This will limit or preclude your ability to influence corporate matters, including the election of directors, amendments of our organizational documents, and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval.

Our Class B common stock has ten votes per share, and our Class A common stock has one vote per share. Our Class B stockholders, including our founders, hold, in aggregate approximately 83% 81% of the voting power of our capital stock. The ten-to-one voting ratio between our Class B and Class A common stock, results in the holders of our Class B common stock collectively controlling a majority of the combined voting power of our common stock and therefore being able to control all matters submitted to our stockholders for approval until 2029, or upon the occurrence of a triggering event at which time all shares of our Class B common stock will automatically convert into shares of our Class A common stock, or on an earlier date, each as set forth in our Delaware certificate of incorporation.

This concentrated control will limit or preclude your ability to influence corporate matters for the foreseeable future, including the election of directors, amendments of our organizational documents, and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval. In addition, this may prevent or discourage unsolicited acquisition proposals or offers for our capital stock that you may feel are in your best interest as one of our stockholders.

Future transfers by holders of our Class B common stock will generally result in those shares converting to Class A common stock, subject to the specific exceptions set forth in our Delaware certificate of incorporation, such as certain transfers effected for estate planning purposes and between or among our founders. The conversion of Class B common stock to Class A common stock will have the effect, over time, of increasing the relative voting power of those holders of Class B common stock who retain their shares in the long-term.

Certain provisions in our charter documents and Delaware law could prevent an acquisition of our company if our Merger Agreement with Siemens Industry were terminated, limit attempts by our stockholders to replace or remove members of our board of directors or current management and may adversely affect the market price of our Class A common stock.

Our Delaware certificate of incorporation and bylaws contain provisions that could delay or prevent a change in control of our company that stockholders may consider favorable if our Merger Agreement with Siemens Industry were terminated, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions may also prevent or delay attempts by stockholders to replace or remove our current management or members of our board of directors. These provisions include:

- providing for a dual class common stock structure for 12 years following the completion of our IPO;

- providing for a classified board of directors with staggered three-year terms, which could delay the ability of stockholders to change the membership of a majority board of directors;
- authorizing our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval;
- the requirement that a special meeting of stockholders may be called only by the chairman of our board of directors, our chief executive officer, our president, or a majority vote of our board of directors, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the remova directors;
- requiring the affirmative vote of holders of at least 66 2 / 3 % 2/3% of the voting power of all of the then outstanding shares of the voting stock, voting together as single class, to adopt, amend, or repeal provisions of (i) our certificate of incorporation relating to the issuance of preferred stock without stockholder approval, vo rights of our Class A common stock and our Class B common stock, and management of our business, and (ii) our bylaws relating to the ability of stockholders tc special meeting and amending our bylaws in their entirety, which may inhibit the ability of an acquirer to effect such amendments to facilitate an unsolicited takeo attempt;
- the ability of our board of directors, by majority vote, to amend our bylaws, which may allow our board of directors to take additional actions to prevent an unsolici takeover and inhibit the ability of an acquirer to amend our bylaws to facilitate an unsolicited takeover attempt; and
- requiring advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upc stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

These and other provisions in our certificate of incorporation, our bylaws and under Delaware law could discourage potential takeover attempts if our Merger Agreement with Siemens Industry were terminated, reduce the price that investors might be willing to pay for shares of our Class A common stock in the future and result in the market price being lower than it would be without these provisions.

Risks Related to Our Indebtedness

Our Convertible Senior Notes maturing on June 1, 2024, and our Convertible Notes due in 2027, or collectively the Convertible Notes, are effectively subordinated to our secured debt and any liabilities of our subsidiaries.

The Convertible Senior Notes maturing on June 1, 2024 (the "2024 Notes") and the Convertible Senior Notes due in 2027 (the "2027 Notes", collectively with the 2024 Notes the "Convertible Notes") rank senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the Convertible Notes; equal in right of payment to any of our liabilities that are not so subordinated; effectively junior in right of payment to any of our secured indebtedness (including all amounts outstanding under our revolving credit facility) to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries. In the event of our bankruptcy, liquidation, reorganization or other winding up, our assets that secure debt ranking senior or equal in right of payment to the Convertible Notes (including all amounts outstanding under our revolving credit facility) will be available to pay obligations on the Convertible Notes only after the secured debt has been repaid in full from these assets, and the assets of our subsidiaries will be available to pay obligations on the Convertible Notes only after all claims senior to the Convertible Notes have been repaid in full. There may not be sufficient assets remaining to pay amounts due on any or all of the Convertible Notes then outstanding. The indenture governing the Convertible Notes will not prohibit us from incurring additional senior debt or secured debt, nor does it prohibit any of our subsidiaries from incurring additional liabilities.

The Convertible Notes are our obligations only and a substantial portion of our operations are conducted through, and a substantial portion of our consolidated assets are held by, our subsidiaries.

The Convertible Notes are our obligations exclusively and are not guaranteed by any of our operating subsidiaries. A substantial portion of our operations is conducted through, and a substantial portion of our consolidated assets is held by, our subsidiaries. Accordingly, our ability to service our debt, including the Convertible Notes, depends in part on the results of operations of our subsidiaries and upon the ability of such subsidiaries to provide us with cash, whether in the form of dividends, loans or otherwise, to pay amounts due on our obligations, including the Convertible Notes. Our subsidiaries are separate and distinct legal entities and have no obligation, contingent or otherwise, to make payments on the Convertible Notes or to make any funds available for that purpose. In addition, dividends, loans or other distributions to us from such subsidiaries may be subject to contractual and other restrictions and are subject to other business considerations.

Servicing our debt will require a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, or to refinance our future indebtedness, including the amounts payable under our revolving credit facility and the Convertible Notes, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. In addition, the credit agreement governing our revolving credit facility contains, and any of our future debt agreements may contain restrictive covenants that may prohibit us from adopting any of these alternatives. Our failure to comply with these covenants could result in an event of default which, if not cured or waived, could result in the acceleration of our debt.

We may still incur substantially more debt or take other actions which would intensify the risks discussed above.

We and our subsidiaries may be able to incur substantial additional debt in the future, subject to the restrictions contained in our debt instruments, some of which may be secured debt. We will not be restricted under the terms of the indenture governing the Convertible Notes from incurring additional debt, securing existing or future debt, recapitalizing our debt or taking a number of other actions that are not limited by the terms of the indenture governing the Convertible Notes that could have the effect of diminishing our ability to make payments on the Convertible Notes when due. Our existing revolving credit facility restricts our ability to incur additional indebtedness, including secured indebtedness, but if those restrictions are waived, or the facility matures or is repaid, we may not be subject to such restrictions under the terms of any subsequent indebtedness.

We may not have the ability to raise the funds necessary to settle conversions of the Convertible Notes in cash or to repurchase the Convertible Notes upon a fundamental change, and our current debt contains, and our future debt may contain, limitations on our ability to pay cash upon conversion or repurchase of the Convertible Notes.

Holders of the Convertible Notes will have the right to require us to repurchase their Convertible Notes upon the occurrence of a fundamental change at a defined repurchase price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon consummation of our pending Merger with Siemens Industry will constitute a make-whole fundamental change, and we will be required to temporarily increase the conversion rate. Upon conversion of the Convertible Notes, unless with respect to our 2027 Notes, we elect to deliver solely shares of our Class A common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Convertible Notes being converted. However, we may not have enough available cash or be able to obtain financing on favorable terms or at all at the time we are required to make repurchases of Convertible Notes surrendered therefor or Convertible Notes being converted. Once the Merger is consummated, we will settle conversions solely in cash based upon per share Merger Consideration payable under the Merger Agreement.

In addition, our ability to repurchase the Convertible Notes or to pay cash upon conversions of the Convertible Notes may be limited by law, by regulatory authority or by agreements governing our indebtedness including our existing revolving credit facility. Our failure to repurchase Convertible Notes at a time when the repurchase is required by the indenture or to pay any cash payable on future conversions of the Convertible Notes as required by the indenture would constitute a default under the indenture. A default under the indenture or the occurrence of a fundamental change itself would likely also lead to a default under our revolving credit facility and may lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Convertible Notes or make cash payments upon conversions thereof.

Our revolving credit facility limits our ability to pay any cash amount upon the conversion or repurchase of the Convertible Notes.

Our existing revolving credit facility prohibits us from making any cash payments on the conversion or repurchase of the Convertible Notes if a default under such credit facility exists or would be created thereby. In addition, our ability to make cash payments on the conversion or repurchase of the Convertible Notes will be limited to the extent we do not satisfy certain financial covenant tests after giving effect to such payments. Any new credit facility that we may enter into may have similar restrictions. Our failure to make cash payments upon the conversion or repurchase of the Convertible Notes as required under the terms of the Convertible Notes would permit holders of the Convertible Notes to accelerate our obligations under the Convertible Notes.

Our loan agreements contain operating and financial covenants that may restrict our business and financing activities.

Our credit agreement, as amended, provides for an initial aggregate commitment amount of $200 million, with a sublimit for the issuance of letters of credit of up to $5.0 million and a sublimit for swing line loans of up to $5.0 million and matures on December 31, 2025 (the “2019 Amended Credit Agreement”). Our 2019 Amended Credit Agreement is unconditionally guaranteed by us and all existing and subsequently acquired controlled domestic subsidiaries. It is also collateralized by a first priority, perfected security interest in, and mortgages on, substantially all of our tangible assets. The 2019 Amended Credit Agreement contains operating financial restrictions and covenants, including liens, limitations on indebtedness, fundamental changes, limitations on guarantees, limitations on sales of assets and sales of receivables, dividends, distributions and other restricted payments, transactions with affiliates, prepayment of indebtedness and limitations on loans and investments in each case subject to certain exceptions. In addition, the 2019 Amended Credit Agreement contains financial covenants relating to maintaining a maximum senior secured leverage ratio of 3.0 to 1.0, as defined in the 2019 Amended Credit Agreement. The restrictions and covenants in the 2019 Amended Credit Agreement, as well as those contained in any future debt financing agreements that we may enter into, may restrict our ability to finance our operations and engage in, expand or otherwise pursue our business activities and strategies. Our ability to comply with these covenants and restrictions may be affected by events beyond our control, and breaches of these covenants and restrictions could result in a default under the loan agreement and any future financing agreements that we may enter into.

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Provisions relating to the conversion of our Convertible Notes may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the 2027 Convertible Notes is triggered prior to the consummation of the Merger, holders of the 2027 Convertible Notes will be entitled to convert the 2027 Convertible Notes at any time during specified periods prior to the consummation of the Merger at their option. If one or more holders elect to convert their 2027 Convertible Notes at such time, unless we elect to satisfy our conversion obligation by delivering solely shares of our Class A common stock (other than paying cash in lieu of delivering any fractional share) with respect to the 2027 Convertible Notes, we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders of the 2027 Convertible Notes do not elect to convert their 2027 Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the 2027 Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital. We have elected to settle the 2024 Notes par value in cash, which we currently expect to fund from our available cash, and will settle the premium in shares of our Class A common stock. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under our existing indebtedness, and any future indebtedness we may incur, and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing, or obtaining additional equity capital on terms that may be onerous or highly dilutive.

Provisions in the indenture governing the Convertible Notes may deter or prevent a business combination that may be favorable to you.

As stated above, if a fundamental change occurs prior to the maturity date, holders of the Convertible Notes will have the right, at their option, to require us to repurchase all or a portion of their Convertible Notes. In addition, if a make-whole fundamental change occurs prior to the maturity date, we will, in some cases, be required to increase the conversion rate for a holder that elects to convert its Convertible Notes in connection with such make-whole fundamental change. Furthermore, the indenture governing the Convertible Notes will prohibit us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the Convertible Notes. These and other provisions in the indenture governing the Convertible Notes could deter or prevent a third-party from acquiring us even when the acquisition may be favorable to you.

Transactions relating to the Convertible Notes may affect the value of our Class A common stock.

As noted above, we have elected to settle the 2024 Notes par value in cash and will settle the premium in shares of our Class A common stock; the settlement of the premium in shares will have a dilutive impact on the ownership interests of existing stockholders. The conversion of some or all of the 2027 Convertible Notes would dilute the ownership interests of existing stockholders to the extent we satisfy our conversion obligation by delivering shares of our Class A common stock upon any conversion of the 2027 Convertible Notes. If holders of our 2027 Convertible Notes elect to convert their notes prior to the consummation of the Merger, we may settle our conversion obligation by delivering to them a significant number of shares of our Class A common stock, which would cause dilution to our existing stockholders.

General Risk Factors

If we are unable to attract and retain key personnel, we may be unable to achieve our business objectives.

Our business is dependent on our ability to attract and retain highly skilled software engineers, data scientists, salespeople, and support teams. There is significant industry competition for these individuals. We have many employees whose equity awards in our company are fully vested and may increase their personal wealth, which could affect their decision to remain with the Company. Failure to attract or retain key personnel could delay or prevent the achievement of our business objectives.

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We may require additional capital to support our business, which may not be available on acceptable terms.

We expect to continue to make investments in our business, which may require us to raise additional funds. funds if our Merger Agreement is terminated for any reason. We may raise these funds through either equity or debt financings. Issuances of equity or convertible debt securities may significantly dilute stockholders and any new equity securities could have rights, preferences and privileges superior to those holders of our Class A common stock. In addition to the restrictions under our current credit agreement, any future debt financings could contain restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital, manage our business and pursue business opportunities, including potential acquisitions.

We may not be able to obtain additional financing on terms favorable to us. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our growth, develop new software or add capabilities and enhancements to our existing software and respond to business challenges could be significantly impaired, and our business may be adversely affected.

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The estimates of market opportunity and forecasts of market growth included in our periodic reports or other public disclosures may prove to be inaccurate, and even if the market in which we compete achieves the forecasted growth, our business could fail to grow at similar rates, if at all.

Market opportunity estimates and growth forecasts included in our periodic reports or other public disclosures, including those we have generated ourselves, are subject to significant uncertainty and are based on assumptions and estimates that may not prove to be accurate. Even if the market in which we compete meets the size estimates and growth forecasted in our periodic reports or other public disclosures, our business could fail to grow for a variety of reasons, which would adversely affect our results of operations.

Adverse global conditions, including economic uncertainty, may negatively impact our financial results.

Global conditions, dislocations in the financial markets, any negative financial impacts affecting United States corporations operating on a global basis as a result of tax reform or changes to existing trade agreements or tax conventions, inflation, or rising interest rates, could adversely impact our business in a number of ways, including longer sales cycles, lower prices for our software license fees, reduced licensing renewals, customer disruption or foreign currency fluctuations.

In addition, the global macroeconomic environment could be negatively affected by, among other things, instability in global economic markets, increased U.S. trade tariffs and trade disputes with other countries, instability in the global credit markets, supply chain weaknesses, instability in the geopolitical environment as a result of geopolitical tensions and conflicts, ongoing efforts to defend U.S. national security, and foreign governmental debt concerns. Such challenges have caused, and may continue to cause, uncertainty and instability in local economies and in global financial markets.

During challenging economic times our customers may be unable or unwilling to make timely payments to us, which could cause us to incur increased bad debt expenses. Our customers may unilaterally extend the payment terms of our invoices, adversely affecting our short-term or long-term cash flows.

Business interruptions could adversely affect our business.

Our operations and our customers are vulnerable to interruptions by fire, flood, earthquake, power loss, telecommunications failure, terrorist attacks, wars, environmental events and climate change, and other events beyond our control. A catastrophic event that results in the destruction of any of our critical business or information technology systems could severely affect our ability to conduct normal business operations, including system interruptions, reputational harm, delays in our software development, breaches of data security and loss of critical data.

We rely on our network and third-party infrastructure and applications, internal technology systems, and our websites for our development, marketing, operational support, hosted services and sales activities. If these systems were to fail or be negatively impacted as a result of a natural disaster or other event, our ability to deliver software and training to our customers could be impaired.

In addition, the occurrence of an epidemic or a pandemic, such as the COVID-19 pandemic, may have an adverse effect on our operating results. The impacts of a potential epidemic or pandemic, or a resurgence of COVID-19, could pose the risk that we or our employees, suppliers, customers and others may be restricted or prevented from conducting business activities for indefinite or intermittent periods of time, including as a result of employee health and safety concerns, shutdowns, shelter in place orders, travel restrictions and other actions and restrictions that may be prudent or required by governmental authorities. The extent to which epidemics and pandemics impact our financial condition or results of operations will depend on many factors outside of our control and whether there is a material impact on the businesses or productivity of our customers, employees, suppliers and other partners.

Our business interruption insurance may not be sufficient to compensate us fully for losses or damages that may occur as a result of these events, if at all.

Our reported financial results may be adversely affected by changes in accounting principles generally accepted in the United States.

GAAP are subject to interpretation by the Financial Accounting Standards Board, or FASB, the United States Securities and Exchange Commission, or the SEC, and various bodies formed to promulgate and interpret appropriate accounting principles. A change in these principles or interpretations could have a significant effect on our reported financial results for periods prior and subsequent to such change. The adoption of new standards may require enhancements or changes in our systems and will continue to require significant time and effort of our financial management team.

We cannot predict the impact of all of the future changes to accounting principles or our accounting policies on our consolidated financial statements going forward, which could have a significant effect on our reported financial results, and could affect the reporting of transactions completed before the announcement of the change. In addition, if we were to change our critical accounting estimates, including those related to the recognition of license revenue and other revenue sources, our operating results could be significantly affected.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

We believe cybersecurity is a necessity for operating our business. As a global leader in computational science and artificial intelligence, we face many cybersecurity threats that range from common attack patterns, such as ransomware and denial-of-service, to attacks from sophisticated and persistent adversaries, including nation state actors, that target companies with innovative technology. Our customers, vendors and other third-party partners face similar cybersecurity threats, and a cybersecurity incident impacting us or any of these entities could materially adversely affect our operations, performance and results of operations. These cybersecurity threats and related risks make it imperative that we carefully execute our cybersecurity operations, strategy and governance.

The Board of Directors are informed of cybersecurity risks and provide oversight to the executive management team with the day-to-day responsibility of cybersecurity functions, auditing and budget. Senior leadership, including our Chief Information Security Officer (CISO), regularly briefs the Board of Directors on our cybersecurity and information security posture and the Board of Directors is apprised of cybersecurity incidents deemed to impair data confidentiality, integrity and/or availability. In the event of an incident, we intend to follow our customized incident response playbooks, which outline the steps to be followed from incident detection to mitigation, recovery and notification, including notifying functional areas (e.g. legal), as well as senior leadership and the Board, as appropriate. Our procedures vary slightly depending on the type of incident at issue (e.g., account compromise, malware, data loss) as well as the data compromised.

Our corporate information security team, led by our CISO, is responsible for our overall information security strategy, policy, security engineering, security operations (as a second line of defense) and cyber threat detection and response.The current CISO has more than ten years' experience in cybersecurity and 35 years as an information technology professional. Given that our CISO has more than 25 years at the Company in multiple positions, he helped incubate and grow our corporate information security team into what it is today. During 2024 Altair chose to grow its security team further, recognizing the ever-increasing threats; a Director for IT Security was brought on board and a number of global staff were added to the Security Operations team. Our information security management philosophy is one of cyber risk prevention and we have the ultimate goal of preventing cyber incidents. Simultaneously, our information security team focuses on increasing our system resilience to minimize data breach (or other compromise) business impact should an incident occur. Cybersecurity is not the sole responsibility of our information security team. During 2024 and into 2025 we have increased the Security team involvement with business leaders. Our Security team meets with business leaders regularly and works closely with internal departments to keep security at the forefront. Our employees and vendors also play a role in our company's cybersecurity efforts. Through our cybersecurity awareness training and other team training we are fostering a culture that all employees and vendors have a role in our cybersecurity defenses.

The corporate information security team has implemented a governance structure and processes to assess, identify, manage and report cybersecurity risks. We also have threat intelligence and insider threat programs to identify external and internal threats, and to mitigate

those threats in a timely manner to the best of our ability. In addition, we have further developed security corporate practices, controls, and frameworks, which we believe enhance our ability to identify and manage cybersecurity risks.

We employ a data privacy counsel to specifically improve our responses to growing international privacy laws. We believe that this enhances our data control and thus may reduce risk.

Third parties also play a role in our cybersecurity and supplement our program. We engage third-party services in some vital areas of our business to conduct evaluations of our security controls, whether through penetration testing, independent audits or consulting on best practices to address new challenges. Additionally, we leverage a Security Operations Center ("SOC")-as-a-Service provider to ensure continuous monitoring and rapid response to potential threats, enhancing our ability to maintain a robust security posture at all times.

We employ risk management functionality and document enterprise information security risks. Our information security team maintains documentation to assess risk and mitigate cyber risk in alignment with risk (understanding general impact and likelihood of risk exploitation), resources, and business process. Cybersecurity risks are tracked throughout the risk management process from risk mitigation to ultimate completion of remediation. From time-to-time significant risks may be escalated to the executive management team and/or the Board in the existing executive management processes for cybersecurity and Board briefing schedule.

We rely on our indirect sales channel partners and supply chain to deliver our products and services to our customers, and a cybersecurity incident at a channel partner, supplier, subcontractor or joint venture partner could materially adversely impact us. We also contractually flow cybersecurity regulatory requirements to our subcontractors in alignment with legal and contractual obligations. Extensive international law and US-sector specific laws pertaining to privacy and data security may create challenges for our supply chain and increase costs as we continue to flow down legal obligations.

Despite our careful planning, we may not be successful in preventing or mitigating a cybersecurity incident that could have a material adverse effect on us. While the Company maintains cybersecurity insurance, the costs related to cybersecurity threats or disruptions may not be fully insured. See Item 1A. "Risk Factors" for a discussion of cybersecurity risks.

Item 2. Properties

Our corporate headquarters are located in Troy, Michigan. We own our corporate headquarters facility, and an undeveloped parcel of land adjacent to our headquarters, which we may develop over the next few years.

We lease or sublease all of our other domestic and international offices. We expect to add facilities as we grow our employee base and expand geographically. We do not manage our facilities by segment because they may be used for multiple purposes, such as administration, sales, and development. We believe that our facilities are adequate to meet our needs for the immediate future, and that, should it be needed, suitable additional space will be available to accommodate expansion of our operations.

Item 3. Legal Proceedings

Securities class action lawsuits and derivative lawsuits are often brought against public companies that have entered into merger agreements. Even if such lawsuits are unsuccessful, defending against these claims can result in substantial costs. Stockholders of Altair have filed, and may in the future file, lawsuits against Altair and/or the directors and officers of Altair in connection with the Merger. As of the date of this Annual Report on Form 10-K, three Lawsuits relating to the Merger have been filed: (i) Elstein v. Altair Engineering Inc., et al., Case No. 2025-211856-CB (i.e., the Elstein Lawsuit), which was filed in the State of Michigan Circuit Court for the Sixth Judicial Circuit, Oakland County, on January 3, 2025 and (ii) Jones v. Altair Engineering Inc., et al., Index No. 650098/2025 (i.e., the Jones Lawsuit) and Kent v. Altair Engineering Inc., et al., Index No. 650113/2025 (i.e., the Kent Lawsuit), both of which were filed in the Supreme Court of the State of New York, County of New York, on January 7, 2025 and January 8, 2025, respectively. The Elstein Lawsuit was filed by a purported stockholder of the Company as an individual action and alleges that the Proxy Statement was materially incomplete due to certain misrepresentations and omissions in violation of Michigan's Uniform Securities Act and Michigan common law. The Elstein Lawsuit names as defendants the Company, its directors and Siemens Industry, and seeks, among other relief, an order enjoining the closing of the vote on the Merger. The Jones Lawsuit and the Kent Lawsuit were each filed by a purported stockholder of the Company as an individual action and allege that the Proxy Statement was materially incomplete due to certain misrepresentations and omissions in violation of New York common law. The Jones Lawsuit and Kent Lawsuit name as defendants the Company and its directors and seek, among other relief, an order enjoining the consummation of the Merger. The Elstein Lawsuit was voluntarily dismissed with prejudice in January 2025 prior to the consummation of the Merger. These lawsuits could prevent or delay the completion of the Merger and result in significant costs to Altair, including any costs associated with the indemnification of directors and officers.

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business. business unrelated to the Merger. We have received, and may in the future continue to receive, claims from third parties asserting, among other things, infringement of their intellectual property rights. Future litigation may be necessary to defend ourselves, our partners and our customers by determining the scope, enforceability and validity of third-party proprietary rights, or to establish and enforce our proprietary rights. The results of any current or future litigation cannot be predicted with certainty and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information for Common Stock

Our Class A common stock began trading on the Nasdaq Global Select Market under the symbol "ALTR" on November 1, 2017.

Our Class B common stock is not listed nor traded on any stock exchange.

Holders

As of February 14, 2024 February 3, 2025, there were approximately 400 registered stockholders of our Class A common stock and 4 registered stockholders of our Class B common stock. We are unable to estimate the total number of stockholders because many of our shares of Class A common stock are held by brokers, banks or other institutions on behalf of stockholders.

Dividends

We have never declared or paid any cash dividends on our common stock. We currently do not anticipate paying any dividends on our common stock in the foreseeable future. The terms of the Merger Agreement prohibit the payment of dividends by Altair. The terms of our 2019 Amended Credit Agreement also restrict our ability to pay dividends, and we may also enter into credit agreements or other borrowing arrangements in the future that will restrict our ability to declare or pay cash dividends on our capital stock. Any Absent contractual prohibitions, any future determination regarding the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects, and other factors our board of directors may deem relevant. There can be no assurance that any dividends will be paid in the future.

Performance Graph

The following shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or incorporated by reference into any of our other filings under the Securities Exchange Act of 1934, as amended, or the Securities Act.

The graph below compares the cumulative total stockholder return on our Class A common stock with the cumulative total return on the Nasdaq Composite Index and the Nasdaq Computer Index. The graph assumes $100 was invested at the market close on December 31, 2018 December 31, 2019, in our Class A common stock, the Nasdaq Composite Index and the Nasdaq Computer Index.

Data for the Nasdaq Composite Index and the Nasdaq Computer Index assumes reinvestment of dividends.

The comparisons in the graph below are based upon historical data and are not indicative of, nor intended to forecast, future performance of our Class A common stock.

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NOTE: Index Data: Copyright NASDAQ OMX, Inc. Used with permission. All rights reserved.

Item 6. Reserved

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Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements (and notes thereto) for the year ended December 31, 2023 December 31, 2024 included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in “Risk factors” Factors” and “Cautionary Note Regarding Forward-Looking Statements” included elsewhere in this Annual Report on Form 10-K.

Overview

We are a global leader in computational science intelligence providing software and cloud solutions in simulation, high-performance computing ("HPC"), data analytics, and artificial intelligence enabling ("AI"). We enable organizations across broad industry segments all industries to compete more effectively and drive smarter decisions in an increasingly connected world. We deliver software and cloud solutions in the areas of simulation and design, high-performance computing (“HPC”), data analytics, and artificial intelligence (“AI”). Our products and services leverage computational intelligence to drive innovation for world - all while creating a greener, more connected, safe, and sustainable future.

Our simulation and AI-driven approach to innovation is powered by our broad portfolio of high-fidelity and high-performance physics solvers, our market-leading technology for optimization and HPC, and our end-to-end platform for developing AI and Internet of Things ("IoT") solutions. Our integrated suite of software optimizes design performance across multiple disciplines encompassing structures, motion, fluids, thermal, electromagnetics, system modeling, and embedded systems, while also providing AI solutions and true-to-life visualization and rendering. Our HPC solutions maximize the efficient utilization of complex compute resources and streamline the workflow management of compute-intensive tasks for applications including AI, modeling and simulation, and visualization. Our data analytics, AI and IoT products include data preparation, data science, MLOps, orchestration, and visualization solutions that fuel engineering, scientific, and business decisions.

Altair's software products represent a comprehensive, open architecture solution for simulation, HPC, data analytics, and AI to empower decision making for improved product design and development, manufacturing, energy management and exploration, financial services, health care, and retail operations. We believe Altair's solutions are compelling due to their openness and usability.

Altair's products offer a comprehensive set of technologies to design and optimize high-performance, efficient, innovative and sustainable products and processes in an increasingly connected world. Our products are categorized by:

- Physics Simulation and Concept Design;
- High Performance and Cloud Computing; and
- Data Analytics, AI, IoT and Smart Product Development.

Altair also provides Client Engineering Services, or CES, to support our customers with long-term ongoing expertise. This has the benefit of embedding us within customers, deepening our understanding of their processes, and allowing us to more quickly perceive trends in the overall market. Our presence at our customers' sites helps us to better tailor our software products' research and development, or R&D, and sales initiatives.

Licensing

There are two licensing methods we employ to deliver our software solutions:

- Most products are available under our unique, patented units-based licensing model known as Altair Units.
- A small subset of our products is available on a node-locked, or hardware specific, and named-user basis. This is especially true for our high-performance computing solutions.

Altair pioneered Altair Units, a patented units-based subscription licensing model for software and other digital content. This units-based subscription licensing model allows flexible and shared access to our offerings, along with more than 150 partner products. Our customers license a pool of units for their organizations giving individual users access to our portfolio of software applications as well as our growing portfolio of partner products. We believe our units-based subscription licensing model lowers barriers to adoption, creates broad engagement, encourages users to work within our ecosystem, and increases revenue. This, in turn, helps drive our recurring software license rate which has been on average approximately 91% 92% over the past five years. Historically, approximately 60% of new software revenue comes from expansion within existing customers.

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Siemens Merger Agreement

On October 30, 2024, the Company entered into an agreement and plan of merger (the "Merger Agreement") with Siemens Industry Software Inc. ("Siemens Industry") and Astra Merger Sub Inc., a wholly owned subsidiary of Siemens Industry ("Merger Sub"), pursuant to which Merger Sub will merge with and into the Company (the "Merger"), with the Company surviving the Merger as a wholly owned subsidiary of Siemens Industry. Our Board of Directors has unanimously approved the Merger Agreement and, on January 22, 2025, our stockholders holding a majority of the voting power of the outstanding Class A Common Stock and Class B Common Stock (collectively, the "Common Shares") entitled to vote on the adoption of the Merger Agreement, voting together as a single class, approved the Merger Agreement. If the Merger is consummated, the Company's securities will be delisted from the Nasdaq Global Select Market and deregistered under the Securities Exchange Act of 1934, as amended, as promptly as practicable after the Merger is consummated.

Subject to the terms and conditions set forth in the Merger Agreement, at the effective time of the Merger (the "Effective Time"), each Common Share (including any Common Shares to the extent issued in accordance with the terms of the Merger Agreement and the Company's Indenture, but excluding (i) Common Shares held by the Company as treasury shares or owned by Siemens Industry, Merger Sub, or any other subsidiary of Siemens Industry immediately prior to the Effective Time and (ii) Common Shares with respect to which appraisal rights are validly and properly demanded and not withdrawn or lost under Section 262 of the Delaware General Corporation Law) issued and outstanding immediately prior to the Effective Time will automatically be converted into the right to receive $113.00 in cash, without interest (the "Merger Consideration"). The Merger Agreement provides also for the holders of vested and unvested restricted stock units and vested and unvested stock options to receive the Merger Consideration less the exercise price of such stock options, subject to the terms and conditions set forth in the Merger Agreement.

The Company and Siemens Industry have each made customary representations, warranties and covenants in the Merger Agreement. Subject to certain exceptions, the Company has agreed, among other things, to covenants relating to the conduct of its business during the interim period between the execution of the Merger Agreement and closing of the Merger.

The Company is subject to customary "no-shop" restrictions on the Company's ability to solicit alternative acquisition proposals, to furnish information to, and participate in discussions or negotiations with, third parties regarding any alternative acquisition proposals. The "fiduciary out" provisions in the Merger Agreement are no longer applicable, given the approval of the Merger by the Company's stockholders.

The Merger Agreement contains certain customary termination rights for the Company and Siemens Industry. The Company and Siemens Industry may agree to terminate the Merger Agreement by mutual written consent. Either the Company or Siemens Industry may terminate the Merger Agreement if (i) the Merger has not been consummated on or before October 30, 2025 (the "End Date") or, if the closing has not occurred by the End Date solely due to a failure to obtain regulatory approvals, April 30, 2026 (the "Extended End Date"), (ii) any applicable law or final, irreversible and non-appealable order that permanently prohibits, renders illegal, or enjoins the Merger is issued by any government authority of competent jurisdiction, or (iii) the other party breaches any representation, warranty or covenant that results in the failure of the related closing condition to be satisfied, subject to a cure period in certain circumstances.

Siemens Industry is required to pay to the Company a one-time fee equal to $638 million if the Merger Agreement is terminated by the Company or Siemens Industry (i) due to failure to close by the End Date (or the Extended End Date, as applicable) or (ii) any applicable law or final, irreversible non-appealable order that permanently prohibits, renders illegal or enjoins the Merger is issued by any government authority of competent jurisdiction, and at such time, the only conditions to the closing not satisfied are (a) receipt of the required regulatory approvals, or (b) only in the case of clause (ii), the absence of any order or law issued by any governmental authority of competent jurisdiction prohibiting, rendering illegal or enjoining the consummation of the Merger, solely related to competition and foreign direct investment laws.

The completion of the Merger remains subject to customary closing conditions, including, (i) the absence of any order or law issued by any governmental authority of competent jurisdiction prohibiting, rendering illegal or enjoining the consummation of the Merger and (ii) the receipt of all required consents, approvals, notifications or filings from or to any governmental authority under the antitrust and foreign investment laws of certain jurisdictions. The obligation of each party to consummate the Merger is also conditioned upon (i) performance and compliance by the other party in all material respects with its pre-closing obligations and covenants under the Merger Agreement, (ii) the accuracy of the representations and warranties of the other party as of the closing (subject to customary materiality qualifiers), and (iii) in Siemens Industry's case, the absence of a continuing material adverse effect with respect to the Company and its subsidiaries, taken as a whole. The Company now anticipates that the Merger may close in the first half of 2025.

Acquisitions

In September 2023, August 2024, we acquired OmniQuest, KSK Analytics ("KSK"), a Michigan based optimization software company. OmniQuest's flagship product, Genesis, is an advanced structural analysis Japanese firm that offers strategic consulting and optimization software that uses training in AI and data analytics. KSK has been a reseller of the finite element to solve problems with many variables Altair RapidMiner platform for data analytics and constraints. OmniQuest will enhance our optimization leadership in the market driving lightweight and structurally efficient designs across the globe. AI.

In July 2023, 2024, we acquired Metrics Design Automation Inc. ("Metrics"), a Canadian company with semiconductor electronic functional simulation and design verification. The Metrics digital simulator, Dsim, will be available through Altair One, Altair's cloud innovation gateway, where it will also be available for desktop download.

In April 2024, we acquired Research in Flight, maker of FlightStream, which provides computational fluid dynamics (CFD) software with a large footprint in the aerospace and defense sector and a growing presence in marine, energy, turbomachinery, and automotive applications. The technology will be integrated into the Altair HyperWorks design and simulation platform.

In April 2024, we acquired the OmniV technology from XLDyn, LLC. OmniV is assets of Cambridge Semantics, a vendor agnostic MBSE requirements management solution. This technology modern data fabric provider and creator of the industry's leading analytical graph database. Cambridge Semantics' technologies will enhance our ability to engage in projects involving digital twins, simulation data management, and engineering data analytics. be integrated into the Altair RapidMiner platform.

We believe that our recent acquisitions result in certain benefits, including expanding our portfolio of software and products and enabling us to better serve our customer's requests for data analytics and simulation technology. However, to realize some of these anticipated benefits, the acquired businesses must be successfully integrated. The success of these acquisitions will depend in part on our ability to realize these anticipated benefits. We may fail to realize the anticipated benefits of these acquisitions for a variety of reasons.

Factors affecting our performance

We believe that our future success will depend on many factors, including those described below. While these areas present significant opportunity, they also present risks that we must manage to achieve successful results. If we are unable to address these challenges, our business, operating results and prospects could be harmed. See Part I, Item 1A. – Risk Factors included elsewhere in this Annual Report on Form 10-K.

Seasonality and quarterly results

Our billings have historically been highest in the first and fourth quarters of any calendar year and may vary in future quarters. The timing of recording billings and the corresponding effect on our cash flows may vary due to the seasonality of the purchasing patterns of our customers. In addition, the timing of the recognition of revenue, the amount and timing of operating expenses, including employee compensation, sales and marketing activities, and capital expenditures, may vary from quarter-to-quarter which may cause our reported results to fluctuate significantly. Furthermore, we may choose to grow our business for the long-term rather than optimize for profitability or cash flows for a particular shorter-term period. This seasonality or the occurrence of any of the factors above may cause our results of operations to vary and our financial statements may not fully reflect the underlying performance of our business.

Foreign currency fluctuations

Because of our substantial international operations, we are exposed to foreign currency risks that arise from our normal business operations, as well as our transactions that are denominated in foreign currencies, including the Euro, British Pound Sterling, Indian Rupee, Japanese Yen, and Chinese Yuan. To identify changes in our underlying business without regard to the impact of currency fluctuations, we evaluate certain of our operating results both on an as reported basis, as well as on a constant currency basis. Our 2023 2024 revenue and profit were adversely affected relative to the prior year by changes in foreign currency rates and we anticipate that this may continue in 2024. 2025.

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Business segments

We have identified two reportable segments: Software and Client Engineering Services:

- *Software* —Our Software segment includes software, software services, and software related services. The software component of this segment includes our portfolio of software products including our solvers and optimization technology products, high-performance computing software applications and hardware products, modeling and visualization tools, data analytics and analysis products, IoT platform and analytics tools as well as support and the complementary software products we offer through our Altair Partner Alliance, or APA. The APA includes technologies ranging from computational fluid dynamics and fatigue to manufacturing process simulation and cost estimation. The software services and related services component of this segment includes consulting, implementation services, and training focused on product design and development expertise and analysis from the component level up to complete product engineering at any stage of the lifecycle.
- *Client Engineering Services* — Our client engineering services, or CES, segment provides client engineering services to support our customers with long-term, ongoing expertise. We operate our CES business by hiring engineers and data

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scientists for placement at a customer site for specific customer-directed assignments. We employ and pay them only for the duration of the placement.

Our other businesses which do not meet the criteria to be separate reportable segments are combined and reported as "Other" which represents innovative services and products, including Toggled, our LED lighting business. Toggled is focused on developing and selling next-generation solid state lighting technology along with communication and control protocols based on our intellectual property for the direct replacement of fluorescent light tubes with LED lamps. Other businesses combined within Other include potential services and product concepts that are still in their development stages.

For additional information about our reportable segments and other businesses, see Note 17 in the Notes to consolidated financial statements in Item 15, Part IV of this Annual Report on Form 10-K.

Components of results of operations

Revenue

Software

Software revenue is principally comprised of subscription licenses, and to a lesser extent, perpetual licenses and associated maintenance and support fees. Subscriptions are typically governed by contracts with annual terms which include product updates, maintenance and support. We generally recognize software license revenue up front, while maintenance and support revenue are generally recognized over the term of the contract. To a much lesser extent, Software also includes revenue from the sale of hardware products.

Software revenue also includes consulting, implementation services and training. We generally recognize revenue for software services as those services are performed.

Software related Engineering services and other

Consulting services from product design and development projects are considered distinct performance obligations and are provided to customers on a time-and-materials, or T&M, or fixed-price basis. We recognize services revenue from our T&M contracts using input-based estimates, utilizing direct labor and contractually agreed-upon hourly rates as the input measure. For fixed-price contracts, software services revenue is recognized over time using a method that measures the extent of progress towards completion of a performance obligation, generally using a cost-input method where revenue is recognized based on the proportion of total cost incurred to estimated total costs at completion.

Client engineering services

We operate our CES business by hiring engineers and data scientists for placement at a customer site for specific customer-directed assignments. We employ and pay them only for the duration of the placement.

Our CES business generates revenue from placing simulation specialists, industrial designers, design engineers, materials experts, development engineers, manufacturing engineers, and information technology specialists. We recognize CES revenue based upon hours worked and contractually agreed-upon hourly rates.

Other

Our other revenue consists primarily of revenue related to our LED lighting business operated out of our wholly-owned subsidiary, Toggled. Toggled designs, and sources through contract manufacturers, LED lighting and related products for sale to consumers and businesses. We also generate revenue through royalties from licensing Toggled technology to third-party manufacturers and resellers.

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Cost of revenue

Cost of software

Cost of software revenue consists of expenses related to software licensing, hardware sales and customer support. Significant expenses include employee compensation and related costs for support team members, including salaries, benefits, bonuses and stock-based compensation, as well as hardware costs, travel costs, certain data center and facility costs and royalties for third-party software products available to customers through our products or as part of our APA.

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Cost of software related engineering services and other

Cost of software services revenue consists of personnel and related costs, such as salaries, benefits, bonuses and stock-based compensation, as well as travel expenses.

Cost of client engineering services

Cost of client engineering services revenue consists primarily of employee compensation and related costs. We employ and pay them only for the duration of the placement at a customer site.

Cost of other

Cost of other revenue includes the cost of LED lighting products and freight related to products sold to retail and commercial sales channels.

Operating expenses

Operating expenses, as defined and discussed below, support all the products and services that we provide to our customers and, as a result, they are presented in aggregate.

Research and development

Research and development expenses consist primarily of employee compensation and related costs associated with our development team, including salaries, benefits, bonuses, professional consulting and development fees, cloud hosting and software maintenance, and stock-based compensation expense. Certain indirect costs, including IT, facilities, and depreciation expenses, are allocated based on global headcount. Our research and development efforts are focused on enhancing the functionality, breadth and scalability of our software, addressing new use cases, and developing additional innovative technologies. Timely development of new products is essential to maintaining our competitive position, and we release new versions of our software on a regular basis. All software development costs are expensed as incurred as our current software development process is essentially completed concurrent with the establishment of technological feasibility.

Sales and marketing

Sales and marketing expenses consist primarily of employee compensation and related costs associated with our sales and marketing staff, including salaries, benefits, bonuses, commissions, and stock-based compensation, and travel, as well as costs relating to our marketing and business development programs including trade shows and events. Certain indirect costs, including IT, facilities, and depreciation expenses, are allocated based on global headcount. We intend to continue to invest resources in our sales and marketing initiatives to drive growth and extend our market position.

General and administrative

General and administrative expenses consist of employee compensation and related costs for executive, finance, legal, human resources, recruiting, and employee-related information technology and administrative personnel, including salaries, benefits, bonuses and stock-based compensation expense, professional fees for external legal and accounting services, recruiting and other consulting services. Certain indirect costs, including IT, facilities, and depreciation expenses, are allocated based on global headcount.

Amortization of intangible assets

Amortization of intangible assets consists primarily of amortization of intangibles associated with acquisitions. We expect to incur additional amortization expense resulting from future strategic acquisitions.

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Other operating (income) expense, (income), net

Other operating (income) expense, (income), net consists primarily of government subsidies, primarily in Europe, in the form of grant income associated with certain of our research and development activities, mark-to-market adjustments for contingent consideration, and other items as disclosed.

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Interest expense

Interest expense consists of interest expense on our outstanding indebtedness and amortization of debt issuance costs.

Other (income) expense, income, net

Other (income) expense, income, net is comprised primarily of foreign currency exchange gains and losses generated from the settlement and remeasurement of transactions denominated in currencies other than the functional currency of our operating units, and interest income on invested cash. Other (income) expense, net also includes the expense on the repurchase of our 0.250% convertible senior notes which mature on June 1, 2024, (the "2024 Notes") for the year ended December 31, 2022.

Income tax expense

Income tax expense is comprised primarily of income taxes related to United States, foreign, and state jurisdictions in which we conduct business. Income tax expense also includes taxes withheld outside of the United States attributable to remittances to the Company from certain foreign subsidiaries. We record interest and penalties related to income tax matters as income tax expense. We expect the amount of income tax expense (benefit), if any, to vary each reporting period depending upon fluctuations in our quantum and tax jurisdictional mix of income (loss). We have substantial United States foreign tax credit carryforwards which begin to expire in 2027, and research and development tax credits which began to expire in 2018. The ability to utilize these tax attributes is highly dependent upon our ability to generate taxable income in the United States in the future.

Our future effective annual tax rate may be materially impacted by the amount of benefits and charges from tax amounts associated with our foreign earnings that are taxed at rates different from the federal statutory rate, the taxation of the foreign earnings in the U.S. under the Global Intangible Low-Taxed Income, or GILTI, and Foreign Derived Intangible Income, or FDII, regimes, changes in valuation allowances, level of profit before tax, accounting for uncertain tax positions, stock-based compensation, business combinations, payments to the Company from certain foreign subsidiaries, closure of statute of limitations, settlements of tax audits, and changes in tax laws including United States tax law changes that were enacted in December 2017. A significant amount of our earnings is generated in our EMEA and APAC regions. Our future effective tax rates may be adversely affected to the extent earnings are lower than anticipated in countries where we have lower statutory tax rates.

As of December 31, 2023 December 31, 2024 and 2022, 2023, we had gross deferred tax assets, or DTAs, of $208.5 million $227.4 million and $179.8 million $208.5 million, respectively, primarily related to capitalized research and development expenses, net operating loss carryforwards, tax credits and share-based compensation. We are entitled to a United States federal tax deduction when non-qualified stock options, or NSOs, are exercised. For 2023 2024 tax year, we recorded a net increase in the valuation allowance of $29.9 million $25.2 million for the gross DTAs. Our ability to utilize any net operating losses or tax credits may be limited under provisions of the Code if we undergo an ownership change after our IPO (generally defined as a greater than 50-percentage point cumulative change (by value) in the equity ownership of certain stockholders over a rolling three-year period). We also inherited net operating losses, or NOLs, from the acquisitions of Univa and RapidMiner, which are subject to specific limitations on usage. We may also be unable to realize our tax credit carryforwards prior to their expiration.

For tax years beginning on or after January 1, 2022, the Tax Act eliminates the option to currently deduct certain qualifying research and development expenses and requires taxpayers to capitalize and amortize such expenses over five years for research activities performed in the United States and 15 years for research activities performed outside the United States pursuant to Section 174 of the Code. Although Congress is considering legislation that would repeal or defer this capitalization and amortization requirement, it is not certain that this provision will be repealed or otherwise modified. If the requirement is not repealed or replaced, it will increase our U.S. federal and state cash taxes and reduce cash flows in fiscal year 2024 2025 and future years.

Based on the evidence available, including a lack of taxable earnings in the United States, we recorded a valuation allowance against substantially all of our net deferred tax assets in the United States. If a change in judgment regarding this valuation allowance were to occur in the future, we will record a potentially material deferred tax benefit, which could result in a favorable impact on our effective tax rate in that period. The utilization of tax attributes to offset taxable income reduces the amount of deferred tax assets subject to a valuation allowance.

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Results of operations

The following table sets forth our results of operations and certain financial data for the years ended December 31, 2023 December 31, 2024 and 2022: 2023:

(in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Year ended December 31, 2024	Year ended December 31, 2023
Revenue:				
Software	$ 549,974	$ 506,508	$ 611,900	$ 549,974
Software related services	28,032	30,661		
Total software and related services	578,006	537,169		
Client engineering services	29,497	28,883		
Other	5,198	6,169		
Engineering services and other	53,888	62,727		
Total revenue	612,701	572,221	665,788	612,701
Cost of revenue:				
Software	71,182	72,443	79,113	71,182
Software related services	21,830	21,858		
Total software and related services	93,012	94,301		
Client engineering services	24,450	23,577		
Other	4,329	5,011		
Engineering services and other	45,690	50,609		
Total cost of revenue	121,791	122,889	124,803	121,791
Gross profit	490,910	449,332	540,985	490,910
Operating expenses:				
Research and development	212,645	202,542	221,161	212,645
Sales and marketing	176,138	163,884	184,280	176,138
General and administrative	70,887	72,288	90,150	70,887
Amortization of intangible assets	30,851	27,510	33,022	30,851
Other operating expense (income), net	146	(9,955)		
Other operating (income) expense, net	(5,313)	146		
Total operating expenses	490,667	456,269	523,300	490,667
Operating loss	243	(6,937)		
Operating income	17,685	243		
Interest expense	6,116	4,377	5,836	6,116
Other (income) expense, net	(18,492)	16,899		
Income (loss) before income taxes	12,619	(28,213)		
Other income, net	(20,781)	(18,492)		
Income before income taxes	32,630	12,619		

Income tax expense		21,545		15,216		18,455		21,545
Net loss	$	(8,926)	$	(43,429)				
Net income (loss)	$	14,175	$	(8,926)				
Other financial information:								
Billings (1)	$	631,795	$	607,602	$	667,876	$	631,795
Adjusted EBITDA (2)	$	129,138	$	108,600	$	149,912	$	129,138
Net cash provided by operating activities	$	127,307	$	39,570	$	154,084	$	127,307
Free cash flow (3)	$	117,114	$	29,922	$	139,998	$	117,114

(1) Billings consists of our total revenue plus the change in our deferred revenue, excluding deferred revenue from acquisitions. For more information about Billings and our non-GAAP financial measures and reconciliations of our non-GAAP financial measures to the most directly comparable financial measures calculated and presented in accordance with GAAP, see "Non-GAAP financial measures" contained herein.

(2) We define Adjusted EBITDA as net income (loss) adjusted for income tax expense (benefit), interest expense, interest income and other, depreciation and amortization, s based compensation expense, restructuring charges, asset impairment charges and other special items as determined by management. For more information about Adju EBITDA and our other non-GAAP financial measures and reconciliations of our non-GAAP financial measures to the most directly comparable financial measure calculat and presented in accordance with GAAP, see "Non-GAAP financial measures" contained herein.

(3) We define Free Cash Flow as net cash provided by operating activities less capital expenditures. For a reconciliation of Free Cash Flow to the most directly comparable financial measure calculated and presented in accordance with GAAP, see "Non-GAAP financial measures" contained herein.

Change in Presentation of Revenue and Cost of Revenue

Effective in the first quarter of 2024, the Company changed the presentation of revenue and cost of revenue in its Consolidated Statements of Operations to combine the financial statement line items ("FSLIs") labeled "Software related services", "Client engineering services" and "Other" into one FSLI labeled "Engineering services and other". The change in presentation has been applied retrospectively and does not affect the software revenue, total revenue, software cost of revenue, or total cost of revenue amounts previously reported or have any effect on segment reporting.

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Change in Classification of Indirect Costs

As indicated in Note 2 to the Consolidated Financial Statements, beginning in the first quarter of 2023, we refined the classification of certain indirect costs to reflect the way we are now reviewing the information in decision making and to improve comparability with peers. These indirect costs include certain IT, facilities, and depreciation expenses that were previously reported primarily in General and administrative expense. These indirect costs have now been reclassified to Research and development, Sales and marketing, and General and administrative expenses based on global headcount. We believe this refined methodology better reflects the nature of the costs and financial performance of the Company.

As a result, the consolidated statements of operations have been recast for prior periods presented to reflect the effects of the changes to Research and development, Sales and marketing, and General and administrative expense. There was no net impact to total operating expenses, income from operations, net income or net income per share for any periods presented. The consolidated balance sheets, consolidated statements of comprehensive income, consolidated statements of changes in stockholders' equity, and the consolidated statements of cash flows were not affected by changes in the presentation of these costs.

Years ended December 31, 2023 December 31, 2024 and 2022 2023

Revenue

Software

	Year ended December 31,		Change		Year ended December 31,		Change	
(dollars in thousands)	**2023**	**2022**	**$**	**%**	**2024**	**2023**	**$**	**%**

Software revenue	$ 549,974	$ 506,508	$ 43,466	9 %	$ 611,900	$ 549,974	$ 61,926	11 %
As a percent of software segment revenue	95 %	94 %						
As a percent of consolidated revenue	90 %	89 %			92 %	90 %		

Software revenue increased 9% 11% for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023, or 10% 13% in constant currency. The increase was driven by growth in software license revenue primarily by strong retention and expansions within existing accounts, particularly in the aerospace & defense and automotive verticals. vertical.

Software related Engineering services and other

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %
Software related services revenue	$ 28,032	$ 30,661	$ (2,629)	(9 %)				
As a percent of software segment revenue	5 %	6 %						
Engineering services and other revenue	$ 53,888	$ 62,727	$ (8,839)	(14 %)				
As a percent of consolidated revenue	5 %	5 %			8 %	10 %		

Software related The 14% decrease in engineering services and other revenue decreased 9% for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023, as a result of was primarily due to lower customer demand for these services. engineering services during the period.

Client engineering services Cost of revenue

Software

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %
Client engineering services revenue	$ 29,497	$ 28,883	$ 614	2 %				
Cost of software revenue	$ 79,113	$ 71,182	$ 7,931	11 %				
As a percent of software revenue	13 %	13 %						
As a percent of consolidated revenue	5 %	5 %			12 %	12 %		

CES Cost of software revenue increased 2% $7.9 million, or 11%, for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Customer demand for CES has stabilized in the current year compared to the year-over-year declines in the prior year.

Other

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %
Other revenue	$ 5,198	$ 6,169	$ (971)	(16 %)
As a percent of consolidated revenue	1 %	1 %		

The 16% decrease in other revenue Employee compensation and related expense, third-party sales commissions, and royalty expense increased $8.5 million, $0.9 million, and $0.8 million, respectively, for the year ended December 31, 2023 December 31, 2024. Additionally, travel costs increased $0.6 million, and depreciation expense increased $0.3 million for the year ended December 31, 2024. These increases were partially offset by decreases in hardware costs and stock-based compensation expense of $1.8 million and $1.7 million, respectively.

Cost of engineering services and other

(dollars in thousands)	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %
Cost of engineering services and other revenue	$ 45,690	$ 50,609	$ (4,919)	(10 %)
As a percent of other revenue	85 %	81 %		
As a percent of consolidated revenue	7 %	8 %		

Cost of engineering services and other revenue decreased 10% for the year ended December 31, 2024, as compared to the year ended December 31, 2022, was due to reduced sales by Toggled, our LED lighting business.

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Cost of revenue

Software

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %
Cost of software revenue	$ 71,182	$ 72,443	$ (1,261)	(2%)
As a percent of software revenue	13%	14%		
As a percent of consolidated revenue	12%	13%		

Cost of software revenue decreased $1.3 million, or 2%, for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily due to a $5.8 million decrease in hardware costs. This decrease was partially offset by increases in employee compensation and related expense, stock-based compensation expense, royalty expense and travel costs of $1.8 million, $1.7 million, $0.8 million and $0.7 million, respectively. The increase in employee compensation was primarily due to increased headcount in the current year.

Software related services

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %
Cost of software related services revenue	$ 21,830	$ 21,858	$ (28)	(0%)
As a percent of software related services revenue	78%	71%		
As a percent of consolidated revenue	4%	4%		

Cost of software related services was flat for the year ended December 31, 2023, as compared to the year ended December 31, 2022. Employee compensation and related expense, product costs, shop supplies, and inventory obsolescence expense decreased $0.7 million $1.9 million, $1.5 million, $1.1 million, and $0.3 million, respectively, for the year ended December 31, 2023. This decrease was partially offset by increases in facilities costs of $0.5 million and professional services of $0.2 million for the year ended December 31, 2023.

Client engineering services

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %
Cost of client engineering services revenue	$ 24,450	$ 23,577	$ 873	4%
As a percent of client engineering services revenue	83%	82%		
As a percent of consolidated revenue	4%	4%		

Cost of CES revenue increased $0.9 million for the year ended December31, 2023, as compared to the year ended December 31, 2022, consistent with the increase in CES revenue.

Other

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %
Cost of other revenue	$ 4,329	$ 5,011	$ (682)	(14%)
As a percent of other revenue	83%	81%		
As a percent of consolidated revenue	1%	1%		

Cost of other revenue decreased 14% for the year ended December 31, 2023, as compared to the year ended December 31, 2022. Manufacturing costs decreased $0.8 million for the year ended December 31, 2023, which was partially offset by an increase in inventory obsolescence expense of $0.2 million for the year ended December 31, 2023 December 31, 2024.

Gross profit

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %

Gross profit	$ 490,910	$ 449,332	$ 41,578	9 %	$ 540,985	$ 490,910	$ 50,075	10 %
As a percent of consolidated revenue	80 %	79 %			81 %	80 %		

Gross profit increased $41.6 million $50.1 million, or 9% 10%, for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. This increase in gross profit was primarily attributable to the increase in software revenue combined with a decrease in cost of revenue.

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Operating expenses

Operating expenses, as discussed below, support all the products and services that we provide to our customers and, as a result, they are reported and discussed in the aggregate.

Research and development

	Year ended December 31,		Change		Year ended December 31,		Change	
(dollars in thousands)	**2023**	**2022**	**$**	**%**	**2024**	**2023**	**$**	**%**
Research and development	$ 212,645	$ 202,542	$ 10,103	5 %	$ 221,161	$ 212,645	$ 8,516	4 %
As a percent of consolidated revenue	35 %	35 %			33 %	35 %		

Research and development expenses increased $10.1 million $8.5 million, or 5% 4%, for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Employee compensation and related expense increased $9.9 million $14.6 million, primarily due to annual merit increases and increased headcount, as a result of acquisitions. well as retention awards in connection with the pending Merger with Siemens Industry. Additionally, cloud hosting and software maintenance and other IT related expense increased $1.7 million, facilities costs increased $0.7 million, and travel costs increased $0.4 million $2.0 million for the year ended December 31, 2023 December 31, 2024. These increases were partially offset by a decrease in stock-based compensation expense of $2.4 million $8.2 million.

Sales and marketing

	Year ended December 31,		Change		Year ended December 31,		Change	
(dollars in thousands)	**2023**	**2022**	**$**	**%**	**2024**	**2023**	**$**	**%**
Sales and marketing	$ 176,138	$ 163,884	$ 12,254	7 %	$ 184,280	$ 176,138	$ 8,142	5 %
As a percent of consolidated revenue	29 %	29 %			28 %	29 %		

Sales and marketing expenses increased $12.3 million $8.1 million, or 7% 5%, for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Employee compensation and related expense increased $12.3 million $14.1 million, primarily due to annual merit increases and increased headcount. Additionally, headcount, as well as retention awards in connection with the pending Merger with Siemens Industry, and travel costs increased $1.5 million, and $1.3 million. Additionally, selling expenses, facilities costs, and cloud hosting and software maintenance expense each increased $0.6 million $0.5 million for the year ended December 31, 2023 December 31, 2024. These increases were partially offset by a decrease in stock-based compensation expense of $2.0 million $8.9 million.

General and administrative

	Year ended December 31,		Change		Year ended December 31,		Change	
(dollars in thousands)	**2023**	**2022**	**$**	**%**	**2024**	**2023**	**$**	**%**
General and administrative	$ 70,887	$ 72,288	$ (1,401)	(2 %)	$ 90,150	$ 70,887	$ 19,263	27 %
As a percent of consolidated revenue	12 %	13 %			14 %	12 %		

General and administrative expenses decreased $1.4 million increased $19.3 million, or 2% 27%, for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Professional fees decreased $4.3 million increased $16.4 million, employee primarily as a result of legal and financial advisory expenses related to the pending Merger with Siemens Industry. Employee compensation and related expense decreased $1.7 million increased $1.3 million, stock-based compensation expense increased $0.9 million, travel costs increased $0.4 million, and travel costs decreased $0.5 million cloud hosting and software maintenance expense increased $0.3 million for the year ended December 31, 2023 December 31, 2024. These decreases were partially offset by increases in stock-based compensation expense, non-income tax expense, and charitable contributions of $3.5 million, $1.1 million, and $0.5 million, respectively.

Amortization of intangible assets

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %
Amortization of intangible assets	$ 30,851	$ 27,510	$ 3,341	12 %	$ 33,022	$ 30,851	$ 2,171	7 %
As a percent of consolidated revenue	5 %	5 %			5 %	5 %		

Amortization of intangible assets increased $3.3 million $2.2 million for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Amortization of intangible assets in the current year increased primarily as a result of recent acquisitions.

Other operating expense (income), net

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %
Other operating expense (income), net	$ 146	$ (9,955)	$ 10,101	NM
As a percent of consolidated revenue	0 %	(2 %)		

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Other operating (income) expense, net

(dollars in thousands)	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %
Other operating (income) expense, net	$ (5,313)	$ 146	$ 5,459	NM
As a percent of consolidated revenue	(1 %)	0 %		

Other operating (income), expense, net increased $10.1 million was $5.3 million of income for the year ended December 31, 2023 December 31, 2024, as compared to $0.1 million of expense for the year ended December 31, 2022 December 31, 2023. We For the year ended December 31, 2024, we recognized $5.4 million of grant income, $0.6 million of royalty income, and a $0.5 million loss on the mark-to-market adjustment of contingent consideration associated with acquisitions. For the year ended December 31, 2023, we recognized a $5.7 million loss on the mark-to-market adjustment of contingent consideration associated with the World Programming acquisition, for the year ended December 31, 2023, compared to a $7.2 million gain for the year ended December 31, 2022. This loss was partially offset by a $2.6 million increase in $5.6 million of grant income, for the year ended December 31, 2023. and $0.2 million of royalty income.

Interest expense

(dollars in thousands)	Year ended December 31, 2023	Year ended December 31, 2022	Change $	Change %	Year ended December 31, 2024	Year ended December 31, 2023	Change $	Change %
Interest expense	$ 6,116	$ 4,377	$ 1,739	40 %	$ 5,836	$ 6,116	$ (280)	(5 %)
As a percent of consolidated revenue	1 %	1 %			1 %	1 %		

Interest expense increased $1.7 million decreased for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022. Interest expense increased December 31, 2023, as a result of the interest costs on settlement of the 1.750% convertible senior notes due in 2027 (the "2027 Notes") which were issued 2024 Notes in June 2022. 2024.

Other (income) expense, income, net

	Year ended December 31,	Change	Year ended December 31,	Change

(dollars in thousands)	2023	2022	$	%	2024	2023	$	%
Other (income) expense, net	$ (18,492)	$ 16,899	$ 35,391	NM				
Other income, net	$ (20,781)	$ (18,492)	$ 2,289		12 %			
As a percent of consolidated revenue	(3 %)	3 %			(3 %)	(3 %)		

Other (income) expense, income, net increased by $35.4 million $2.3 million for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Other (income) expense, income, net for the year ended December 31, 2024, includes $23.0 million of interest income and $2.2 million in net foreign currency losses. Other income, net for the year ended December 31, 2023, includes $16.9 million of interest income and $1.6 million in net foreign currency gains. Other (income) expense, net for the year ended December 31, 2022, includes $16.6 million expense on the repurchase of a portion of our 2024 Notes, $4.4 million in net foreign currency losses and $4.1 million of interest income. The increase in interest income in the current year was due to higher average interest rates and investment balances in 2023 2024 as compared to 2022. 2023.

Income tax expense

	Year ended December 31,		Change		Year ended December 31,		Change	
(dollars in thousands)	2023	2022	$	%	2024	2023	$	%
Income tax expense	$ 21,545	$ 15,216	$ 6,329	42 %	$ 18,455	$ 21,545	$ (3,090)	(14 %)

The effective tax rate was 171% 57% and (54%) 171% for the year ended December 31, 2023 December 31, 2024 and 2022, 2023, respectively. The tax rate is affected by the Company being a U.S. resident taxpayer, the tax rates in the U.S. and other jurisdictions in which the Company operates, the relative amount of income earned by jurisdiction and the relative amount of losses or income for which no benefit or expense is recognized due to a valuation allowance. The effective tax rate was impacted by the geographic income mix in 2023 2024 as compared to 2022, 2023, primarily related to a United States pre-tax loss of $21.8 million losses for the year years ended December 31, 2023, December 31, 2024 and 2023, for which a tax benefit was not recognized due to the valuation allowance compared to a United States pre-tax loss of $62.7 million for the year ended December 31, 2022, for which a tax benefit was not recognized due to the valuation allowance in 2024 and 2023, as well as changes in uncertain tax positions. Income tax expense also includes taxes withheld outside of the United States attributable to remittances to the Company from certain foreign subsidiaries for which offsetting tax credits are not recognizable due to valuation allowance considerations.

Net loss income (loss)

	Year ended December 31,		Change		Year ended December 31,		Change	
(dollars in thousands)	2023	2022	$	%	2024	2023	$	%
Net loss	$ (8,926)	$ (43,429)	$ (34,503)	(79 %)				
Net income (loss)	$ 14,175	$ (8,926)	$ 23,101	NM				

Net loss income was $8.9 million and $43.4 million for the years ended December 31, 2023 and 2022, respectively. The reduction in net loss $14.2 million for the year ended December 31, 2024, compared to a net loss of $8.9 million for the year ended December 31, 2023. The improvement in net income for the year ended December 31, 2024, was largely attributable to the increase in software revenue and interest income, partially offset by the increase in operating expenses and a loss on the mark-to-market adjustment of contingent consideration as compared to the year ended December 31, 2022. The net loss for the year ended December 31, 2022 included expense recognized on the repurchase of a portion of our 2024 Notes, and a gain on the mark-to-market adjustment of contingent consideration. noted above.

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For information regarding the comparison of results of operations for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, please see Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2022 December 31, 2023.

Non-GAAP financial measures

We monitor the following key non-GAAP (United States generally accepted accounting principles) financial and operating metrics to help us evaluate our business, measure our performance, identify trends affecting our business, formulate business plans and make strategic decisions. In analyzing and planning for our business, we supplement our use of GAAP financial measures with non-GAAP financial measures, including Billings as a liquidity measure, Adjusted EBITDA as a performance measure and Free Cash Flow as a liquidity measure.

	Year ended December 31,						Year ended December 31,					
(in thousands)	2023		2022		2021		2024		2023		2022	
Billings	$	631,795	$	607,602	$	539,855	$	667,876	$	631,795	$	607,602
Adjusted EBITDA	$	129,138	$	108,600	$	85,253	$	149,912	$	129,138	$	108,600
Free Cash Flow	$	117,114	$	29,922	$	53,774	$	139,998	$	117,114	$	29,922

Billings. Billings consists of our total revenue plus the change in our deferred revenue, excluding deferred revenue from acquisitions during the period. Given that we generally bill our customers at the time of sale but typically recognize a portion of the related revenue ratably over time, management believes that Billings is a meaningful way to measure and monitor our ability to provide our business with the working capital generated by upfront payments from our customers.

Billings increased by $24.2 million $36.1 million, or 4% 6%, for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. This increase in Billings was attributable to an increase in Software segment billings.

Adjusted EBITDA. We define Adjusted EBITDA as net income (loss) adjusted for income tax expense (benefit), interest expense, interest income and other, depreciation and amortization, stock-based compensation expense, restructuring charges, asset impairment charges and other special items as determined by management. We believe that Adjusted EBITDA is a meaningful measure of performance as it is commonly utilized by us and the investment community to analyze operating performance in our industry.

Adjusted EBITDA increased by $20.5 million, or 19% was $149.9 million, for the year ended December 31, 2023 December 31, 2024, as compared to $129.1 million for the year ended December 31, 2022 December 31, 2023. This increase in Adjusted EBITDA was primarily attributable to the increase in gross profit, partially offset by an increase in operating expenses.

Free Cash Flow. Free Cash Flow is a non-GAAP financial measure that we calculate calculated as cash flow provided by operating activities less capital expenditures. We believe that Free Cash Flow is useful in analyzing our ability to service and repay debt, when applicable, and return value directly to stockholders.

Net cash provided by operating activities for the year ended December 31, 2023 December 31, 2024, was $127.3 million $154.1 million, which reflects an increase of $87.7 million $26.8 million compared to the year ended December 31, 2022 December 31, 2023. Free Cash Flow increased $87.2 million $22.9 million, or 291% 20%, for the year ended December 31, 2023 December 31, 2024, as compared to year ended December 31, 2022 December 31, 2023. This increase in Free Cash Flow was primarily attributable to a non-recurring $65.9 million payment in the prior year on an existing legal judgment against World Programming, and an improvement in our cash-related profitability for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023. Free Cash Flow was adversely impacted by approximately $13.2 million of expenses paid related to the pending Merger with Siemens Industry.

These non-GAAP financial measures reflect an additional way of viewing aspects of our business that, when viewed with our GAAP results and the accompanying reconciliations to corresponding GAAP financial measures included in the tables below, may provide a more complete understanding of factors and trends affecting our business. These non-GAAP financial measures should not be relied upon to the exclusion of GAAP financial measures and are by definition an incomplete understanding of the Company and must be considered in conjunction with GAAP measures.

We believe that the non-GAAP measures disclosed herein are only useful as an additional tool to help management and investors make informed decisions about our financial and operating performance and liquidity. By definition, non-GAAP measures do not give a full understanding of the Company. To be truly valuable, they must be used in conjunction with the comparable GAAP measures. In addition, non-GAAP financial measures are not standardized. It may not be possible to compare these financial measures with other companies' non-GAAP financial measures having the same or similar names. We strongly encourage investors to review our consolidated financial statements and the notes thereto in their entirety and not to rely on any single financial measure.

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Reconciliation of non-GAAP financial measures

The following tables provide reconciliations of revenue to Billings, net loss to Adjusted EBITDA, and net cash provided by operating activities to Free Cash Flow:

Billings

(in thousands)	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Revenue	$ 612,701	$ 572,221	$ 532,179	$ 665,788	$ 612,701	$ 572,221
Ending deferred revenue	163,703	144,460	106,032	167,616	163,703	144,460
Beginning deferred revenue	(144,460)	(106,032)	(95,079)	(163,703)	(144,460)	(106,032)
Deferred revenue acquired	(149)	(3,047)	(3,277)	(1,825)	(149)	(3,047)
Billings	$ 631,795	$ 607,602	$ 539,855	$ 667,876	$ 631,795	$ 607,602

Adjusted EBITDA

(in thousands)	Year Ended December 31,			Year Ended December 31,		
	2023	2022	2021	2024	2023	2022
Net loss	$ (8,926)	$ (43,429)	$ (8,794)			
Net income (loss)	$ 14,175	$ (8,926)	$ (43,429)			
Income tax expense	21,545	15,216	8,506	18,455	21,545	15,216
Stock-based compensation	85,581	84,787	44,549	67,680	85,581	84,787
Interest expense	6,116	4,377	12,065	5,836	6,116	4,377
Depreciation and amortization	39,124	35,504	25,644	42,164	39,124	35,504
Restructuring expense	—	—	5,053			
Special adjustments, interest income and other (1)	(14,302)	12,145	(1,770)	1,602	(14,302)	12,145
Adjusted EBITDA	$ 129,138	$ 108,600	$ 85,253	$ 149,912	$ 129,138	$ 108,600

(1) The year ended December 31, 2024, includes $22.3 million of expenses related to the pending Merger with Siemens Industry, $1.9 million currency losses on acquisition-related intercompany loans, $0.5 million losses from the mark-to-market adjustment of contingent consideration associated with acquisitions, and $23.0 million of interest income. The year ended December 31, 2023, includes $3.2 million currency gains on acquisition-related intercompany loans, $5.7 million losses from the mark-to-market adjustment of contingent consideration associated with the World Programming acquisition, and $16.9 million of interest income. The year ended December 31, 2022, includes $16.6 million expense on repurchase of convertible senior notes, $6.8 million currency losses on acquisition-related intercompany loans, a $7.2 million gain from the mark-to-market adjustment of contingent consideration associated with the World Programming acquisition, and $4.1 million of interest income. The year ended December 31, 2021, includes $1.2 million currency gains on acquisition-related intercompany loans.

Free Cash Flow

(in thousands)	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024 (1)	2023	2022
Net cash provided by operating activities	$ 127,307	$ 39,570	$ 61,623	$ 154,084	$ 127,307	$ 39,570
Capital expenditures	(10,193)	(9,648)	(7,849)	(14,086)	(10,193)	(9,648)
Free Cash Flow	$ 117,114	$ 29,922	$ 53,774	$ 139,998	$ 117,114	$ 29,922

(1) Free Cash Flow for the year ended December 31, 2024, was adversely impacted by approximately $13.2 million of expenses paid related to the pending Merger with Siemens Industry.

Recurring Software License Rate. software license rate

A key factor to our success is our recurring software license rate, which we measure through billings, Billings, primarily derived from annual renewals of our existing subscription customer agreements. The recurring software license rate is intended to convey the percentage of software billings that are recurring in nature. Recurring license streams allow us to create more consistent, predictable cash flows and drive greater long-term customer value. We believe the recurring software license rate is a key factor to our success and we monitor this measure to ensure our go-to-market strategy is driving long-term success of our business.

We calculate our recurring software license rate for a particular period by dividing (i) the sum of software term-based license billings, Billings, software license maintenance billings, Billings, and 20% of software perpetual license billings Billings which we believe approximates maintenance as an element of the arrangement by (ii) the total software license Billings including all term-based subscriptions, maintenance, and perpetual license billings from all customers for that period. Our recurring software license rate was 93%, 92% 93%, and 92% for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively.

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Liquidity and capital resources

As of December 31, 2023 December 31, 2024, our principal sources of liquidity were $467.5 million $561.9 million in cash and cash equivalents and $200.0 million availability on our credit facility. As of December 31, 2023 December 31, 2024, our outstanding debt consists of $81.7 million and $230.0 million convertible notes due in 2024 and 2027, respectively. 2027.

During the period quarter ended December 31, 2023 December 31, 2024, the conditions allowing holders of the 2027 Notes convertible notes to convert were not met. Therefore, the 2027 Notes convertible notes were classified as long-term debt current on the consolidated balance sheet as of December 31, 2023 December 31, 2024. We Until the Merger is consummated, we have the ability to settle the 2027 Notes convertible notes in cash, shares of our common stock, or a combination of cash and shares of our common stock at our own election.

The 2024 Notes are convertible at the option of the holders and mature on June 1, 2024, and were classified as current on the consolidated balance sheet as of December 31, 2023. We have elected to settle the 2024 Notes par value of $81.7 million in cash, which we currently expect to fund from our available cash, and will settle the premium of $65.9 million in shares of our Class A common stock.

In May 2023, our board of directors approved an increase under our existing stock repurchase program from $50.0 million to $75.0 million of our outstanding Class A Common Stock. During the year ended December 31, 2023, under our stock repurchase program, we repurchased 91,273 shares of our Class A Common Stock at an average price of $46.63 per share for a total cost of approximately $4.3 million. As of December 31, 2023, approximately $49.1 million of shares remained available for repurchase under the program.

We continue to evaluate possible may pursue future acquisitions and other strategic transactions designed to expand our business. As a result, our expected uses of cash could change, our cash position could be reduced, interest income may be reduced due to a decrease in investable cash, or we may incur additional debt obligations to the extent we complete additional acquisitions.

Our existing cash and cash equivalents may fluctuate during fiscal 2024, 2025, due to changes in our planned cash expenditures, including changes in incremental costs such as direct costs and integration costs related to acquisitions. Cash from operations could also be affected by various risks and uncertainties, including, but not limited to, the effects of geopolitical events. It is possible that certain customers may unilaterally decide to extend payments on accounts receivable, however our customer base is comprised primarily of larger organizations with typically strong liquidity and capital resources.

We believe that our existing cash balances, together with funds generated from operations and amounts available under our credit facility, will be sufficient to finance our operations and meet our foreseeable cash requirements for the next twelve months. We also believe that our financial resources, along with managing discretionary expenses, will allow us to manage our business operations for the foreseeable future and withstand geopolitical events, which could include reductions in revenue and delays in payments from customers and partners. We will continue to evaluate our financial position as developments evolve relating to global unrest.

Revolving credit facility

As of December 31, 2023 December 31, 2024, there were no outstanding borrowings under the 2019 Amended Credit Agreement and there was $200.0 million available for future borrowing. The 2019 Amended Credit Agreement is available for general corporate purposes, including working capital, capital expenditures and permitted acquisitions.

The 2019 Amended Credit Agreement is secured by collateral including (i) substantially all of our properties and assets, and the properties and assets of our domestic subsidiaries but excluding any patents, copyrights, patent applications or copyright applications or any trade secrets or software products and (ii) pledges of the equity interests in all present and future domestic subsidiaries (subject to certain exceptions as provided for under the 2019 Amended Credit Agreement). Our direct and indirect domestic subsidiaries are guarantors of all of the obligations under the 2019 Amended Credit Agreement. In addition, the 2019 Amended Credit Agreement contains financial covenants which require, as of the end of each fiscal quarter, a Senior Secured Leverage Ratio not greater than 3.0 to 1.0, as such terms are defined in the 2019 Amended Credit Agreement. As of December 31, 2023 December 31, 2024, we were in compliance with all financial covenants. For additional information about the 2019 Amended Credit Agreement, see Note 7 in the Notes to consolidated financial statements in Item 15, Part IV of this Annual Report on Form 10-K.

Cash flows

As of December 31, 2023 December 31, 2024 and 2022, 2023, respectively, we had an aggregate of cash and cash equivalents of $467.5 million $561.9 million and $316.1 million $467.5 million, which we held for working capital purposes, acquisitions, and capital expenditures. As of December 31, 2023 December 31, 2024 and 2022,

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2023, respectively, $362.5 million $403.8 million and $222.0 million $362.5 million of this aggregate amount was held in the United States, and $98.7 million $148.0 million and $88.3 million $98.7 million was held in the APAC and EMEA regions combined, with the remainder held in Canada, Mexico, and South America.

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Other than statutory limitations, there are no significant restrictions on the ability of our subsidiaries to pay dividends or make other distributions to Altair. Based on our current liquidity needs and repatriation strategies, we expect that we can manage our global liquidity needs without material adverse tax implications.

The following table summarizes our cash flows for the periods indicated:

	Year ended December 31,			Year ended December 31,		
(in thousands)	**2023**	**2022**	**2021(1)**	**2024**	**2023**	**2022(1)**
Net cash provided by operating activities	$ 127,307	$ 39,570	$ 61,623	$ 154,084	$ 127,307	$ 39,570
Net cash used in investing activities	(15,852)	(154,511)	(62,482)	(46,130)	(15,852)	(154,511)
Net cash provided by financing activities	37,766	22,981	175,947			
Net cash (used in) provided by financing activities	(7,035)	37,766	22,981			
Effect of exchange rate changes on cash, cash equivalents and restricted cash	1,397	(5,094)	(2,623)	(6,453)	1,397	(5,094)
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 150,618	$ (97,054)	$ 172,465	$ 94,466	$ 150,618	$ (97,054)

(1) For information regarding a comparison of net cash provided/used in operating activities, investing activities and financing activities for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, ple see Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2022 December 31, 2023.

Net cash provided by operating activities

Net cash provided by operating activities for the year ended December 31, 2023 December 31, 2024, was $127.3 million $154.1 million, which reflects an increase of $87.7 million $26.8 million compared to the year ended December 31, 2022 December 31, 2023. This increase was the result of a non-recurring $65.9 million payment in the prior year on an existing legal judgment against World Programming, and an improvement in our operating results and changes to our working capital position for the year ended December 31, 2023 December 31, 2024, as compared to the year ended December 31, 2022 December 31, 2023.

Net cash used in investing activities

Net cash used in investing activities for the year ended December 31, 2023 December 31, 2024, was $15.9 million $46.1 million, which reflects a decrease an increase of $138.7 million $30.3 million compared to the year ended December 31, 2022 December 31, 2023. For the year ended December 31, 2022 December 31, 2024, we paid $96.7 million for the acquisition of RapidMiner, and an additional $47.8 million $32.1 million related to other business acquisitions and investments. investments, and we had $14.1 million of capital expenditures.

Net cash (used in) provided by financing activities

Net cash used in financing activities for the year ended December 31, 2024, was $7.0 million, compared to net cash provided by financing activities for the year ended December 31, 2023, was of $37.8 million, which reflects an increase in cash provided of $14.8 million compared with. For the year ended December 31, 2022. December 31, 2024, we paid $81.7 million for the settlement of the remaining balance of our 2024 convertible notes, we received $65.5 million from the exercise of common stock options and we received $9.2 million from employee stock purchase plan contributions. For the year ended December 31, 2023, we received $36.1 million from the exercise of common stock options. For the year ended December 31, 2022, options, $8.0 million from employee stock purchase plan contributions, and we received aggregate proceeds of $224.3 million from the issuance of our 2027 Notes, net of certain discounts and commissions, partially offset by $192.4 million proceeds used for the repurchase of a portion of our 2024 Notes. In addition, for the years ended December 31 2023 and 2022, we usedpaid $6.3 million and $19.7 million, respectively, to repurchase shares of our Class A Common Stock under our stock repurchase program.

Effect of exchange rate changes on cash, cash equivalents and restricted cash

There was an adverse effect of exchange rate changes on cash, cash equivalents and restricted cash of $6.5 million for the year ended December 31, 2024, compared to a favorable effect of exchange rate changes on cash, cash equivalents and restricted cash of $1.4 million for the year ended December 31, 2023, compared to an adverse effect of exchange rate changes on cash, cash equivalents and restricted cash of $5.1 million for the year ended December 31, 2022.

Commitments

As of December 31, 2023December 31, 2024, our principal commitments consist of our $81.7 million and $230.0 million convertible notes due in 2024 and 2027, respectively. 2027.

We had contingent payment obligations for deferred professional fees of up to $135.2 million as of December 31, 2024, which may become payable in 2025, subject to certain terms which would cause such contingent amounts to become payable.

We had contingent payment obligations for the purchase of a software license of $7.1 million as of December 31, 2024, which may become payable in 2025, subject to certain terms which would cause such contingent amounts to become payable.

As of December 31, 2023December 31, 2024, we had a net benefit liability of $16.9 million$17.3 million associated with our pension and post-retirement benefit plans. For additional information on pension and other post-retirement benefits, including expected benefit payments for the next 10 years, see Note 14 in the Notes to consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

We have non-cancelable contractual agreements primarily related to the hosting of our data storage processing, storage, and other computing services, as well as other commitments. We had $40.0 million$41.1 million in non-cancelable contractual agreements as of December 31, 2023December 31, 2024, primarily due within threetwo years.

We also have approximately $39.5 million$33.5 million of tax liabilities associated with uncertain tax positions. There is a high degree of uncertainty regarding the future cash outflows associated with these amounts. For additional discussion of uncertain tax positions, see Note 12 in the Notes to consolidated financial statements included elsewhere in this Annual Report on Form 10-K.
Under certain circumstances specified in the Merger Agreement, we would have been required to pay a termination fee of $372.0 million if the Merger Agreement was terminated. As a result of our stockholders' approval of the Merger Agreement on January 22, 2025, the circumstances in which we would be required to pay a termination fee no longer apply.

Critical accounting estimates

Our management’s discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues generated and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting estimates discussed below are critical to understanding our historical and future performance, as these estimates relate to the more significant areas involving management’s judgments and assumptions. Refer to Note 2 to our consolidated financial statements for our significant accounting policies related to our critical accounting estimates.

Revenue recognition

We generate revenue from our Software and CES segments and our other businesses. Revenue is recognized by identifying a contract with a customer, identifying the performance obligations in the contract, determining the transaction price, allocating the transaction price to the performance obligations in the contract, and recognizing revenue when (or as) we satisfy a performance obligation.

Software

Software revenue includes product revenue from software product licensing arrangements, related services consisting of software maintenance and support in the form of post-contract customer support (PCS or maintenance) and professional services such as consulting and training services. Software products are sold to customers primarily under a term-based software licensing model and to a lesser degree, perpetual software licenses. We enter into contracts that include combinations of products, maintenance and services, which are accounted for as separate performance obligations with differing revenue recognition patterns.

Most term-based software license agreements include our patented units-based subscription model which allows customers to license a pool of units for their organizations, providing individual users flexible access to our portfolio of engineering software applications as well as to our growing portfolio of partner products. The amount of software usage is limited by the number of the units licensed by the customer. Revenue from these arrangements is fixed (based on the units licensed) and is not based on actual customer usage of each software product.

Revenue from term-based software licenses is classified as license software revenue. Term-based licenses are sold only as a bundled arrangement that includes the rights to a term software license and PCS, which includes unspecified technical enhancements and customer support. Maximizing the use of observable inputs, we determined that a majority of the estimated standalone selling price of the term-based license is attributable to the term license and a minority is attributable to the PCS. The license component is recognized as revenue upon the later of delivery of the licensed product or the beginning of the license period. The PCS is classified as maintenance revenue and is recognized ratably over the term of the contract, as we provide the PCS benefit over time.

In addition to term-based software licenses, we sell perpetual licenses. Typically, our perpetual licenses are sold with PCS, which includes unspecified technical enhancements and customer support. Revenue from the software component is classified as license software revenue and is recognized upon the later of delivery of the licensed product or the beginning of the license period. We allocate values in bundled perpetual and PCS arrangements based on the standalone selling prices of the perpetual license and PCS. Revenue from PCS is classified as maintenance revenue and is recognized ratably over the term of the contract, as we satisfy the PCS performance obligation over time.

Revenue from training, consulting and other services is recognized as the services are performed. For contracts in which the service consists of a single performance obligation, such as providing a training class to a customer, we recognize revenue upon completion of the performance obligation. For service contracts that are longer in duration and often include multiple performance obligations (for

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example, both training and consulting), we measure the progress toward completion of the obligations and recognize revenue accordingly. In measuring progress towards the completion of performance obligations, we typically utilize output-based estimates for services with contractual billing arrangements that are not based on time and materials, and estimate output based on the total tasks completed as compared to the total tasks required for each work contract. Input-based estimates are utilized for services that involve general consultations with contractual billing arrangements based on time and materials, utilizing direct labor as the input measure.

We also execute arrangements through indirect channel partners in which the channel partners are authorized to market and distribute our software products to end users of our products and services in specified territories. In sales facilitated by channel partners, the channel partner generally bears the risk of collection from the end-user customer. We recognize revenue from transactions with channel partners in a manner consistent with the direct sales described above for both perpetual and term-based licenses. Revenue from channel partner transactions is the amount remitted to us by the channel partners. This amount includes a fee for PCS that is compensation for providing technical enhancements and the second level of technical support to the end user, which is recognized over the period that PCS is to be provided. We do not offer right of return, product rotation or price protection to any of its channel partners.

Some of our contracts with customers contain multiple performance obligations. Judgment is required in determining whether each performance obligation is distinct. We allocate the transaction price for each contract to each performance obligation based on the relative standalone selling price, or SSP, for each performance obligation within each contract. The SSP is the price that we would sell a promised service separately to one of our customers. Judgment is required to determine the SSP for each distinct performance obligation. We estimate SSP using information such as past transactions, internally approved pricing guidelines related to the performance obligations and other information reasonably available to us.

Non-income related taxes collected from customers and remitted to governmental authorities are recorded on the consolidated balance sheet as accounts receivable, net and other accrued expenses and current liabilities. These amounts are reported on a net basis in the consolidated statements of operations and do not impact reported revenues or expenses. Certain hardware revenue is included within software revenue and is recognized when all revenue recognition criteria stated above are met, which is generally when the products are delivered to end customers.

Acquisitions

We account for acquisitions of entities that include inputs and processes and have the ability to create outputs as business combinations. We allocate the fair value of purchase consideration of acquired businesses to the identifiable tangible and intangible assets acquired and liabilities assumed in the transaction based upon their estimated fair values as of the acquisition date. The excess of the purchase price over those fair values is recorded as goodwill. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated statements of operations.

We determine the estimated fair values using information available to us and engage independent third-party valuation specialists when necessary. We generally use an income approach to determine the fair value of intangible assets acquired. Estimating fair values can be complex and subject to significant business judgment. Critical estimates in valuing certain of the intangible assets we have acquired include, but are not limited to, future expected cash flows from product sales, customer contracts and acquired technologies, expenses to operate the acquired business, and discount rates. Unanticipated events and circumstances may occur that could affect either the accuracy or validity of such assumptions, estimates or actual results. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, these estimates are based on historical experience and information obtained from the management of the acquired companies and are inherently uncertain.

Income taxes

We utilize the asset and liability method of accounting for income taxes in accordance with ASC 740, *Accounting for Income Taxes*. Under this method, deferred tax assets and liabilities are determined based on differences between the financial reporting and tax basis of assets and liabilities. Deferred tax assets and liabilities are measured using the enacted tax rates and statutes that will be in effect when those differences are expected to reverse. Deferred tax assets can result from unused operating losses, research and development credits, foreign tax credit carryforwards, and deductions recorded for financial statement purposes prior to them being deductible on a tax return. Valuation allowances are provided against net deferred tax assets if, based upon the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

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The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income and the reversal of taxable temporary differences. We consider, among other available information, scheduled reversals of deferred tax liabilities, projected future taxable income, limitations on the availability of tax credit carryforwards, and other evidence assessing the potential realization of deferred tax assets. Adjustments to the valuation allowance are included in the tax provision in our consolidated statements of operations in the period they become known or can be estimated.

The valuation allowance is based on our estimates of taxable income for jurisdictions in which we operate and the period over which our deferred tax assets may be recoverable. Historically, we have had substantial United States tax credit carryforwards which began to expire in 2018. The ability to utilize these DTAs is highly dependent upon our ability to generate taxable income in the United States in the future.

We apply a more-likely-than-not recognition threshold to our accounting for tax uncertainties. We review all of our tax positions and make determinations as to whether our tax positions are more likely than not to be sustained upon examination by the relevant taxing authorities. Only those benefits, or exposures, that have a greater than fifty percent likelihood of being sustained upon examination by taxing authorities are recognized. Interest and penalties related to uncertain tax positions are recorded in income tax expense (benefit) in the consolidated statements of operations.

Recently issued accounting pronouncements

For information regarding recent accounting guidance and the impact of this guidance on our consolidated financial statements, see Note 2 of the Notes to consolidated financial statements in Item 15, Part IV of this Annual Report on Form 10-K, which is incorporated by reference.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to certain global market risks, including foreign currency exchange risk and interest rate risk associated with our debt.

Foreign Currency Risk

As a result of our substantial international operations, we are exposed to foreign currency risks that arise from our normal business operations, including in connection with our transactions that are denominated in foreign currencies. In addition, we translate sales and financial results denominated in foreign currencies into United States dollars for purposes of our consolidated financial statements. As a result, appreciation of the United States dollar against these foreign currencies generally will have a negative impact on our reported revenue and operating income while depreciation of the United States dollar against these foreign currencies will generally have a positive effect on reported revenue and operating income.

As of December 31, 2023 December 31, 2024, we do not have any foreign currency hedging contracts. Based on our current international operations, we do not plan on engaging in hedging activities in the near future.

Market Risk and Interest Rate Risk

In June 2022, we issued $230.0 million aggregate principal amount of 1.750% convertible senior notes due in 2027 (the "2027 "Convertible Notes"). In June 2019, we issued $230.0 million aggregate principal amount of 0.250% convertible senior notes due 2024 (the "2024 Notes" together with the 2027 Notes "Convertible Notes"), of which approximately $148.3 million aggregate principal amount had been repurchased as of December 31, 2023. The 2027 Notes and 2024 Our Convertible Notes have fixed annual interest rates at 1.750% and 0.250%, respectively, and, therefore, we do not have interest rate exposure on our Convertible Notes. However, the value of the Convertible Notes is exposed to interest rate risk. Generally, the fair market value of our fixed interest rate Convertible Notes will increase as interest rates fall and decrease as interest rates rise. In addition, the fair values of the Convertible Notes are affected by our stock price. The fair value of the Convertible Notes will generally increase as our Class A common stock price increases in value and will generally decrease as our Class A common stock price declines in value. Additionally, we carry the Convertible Notes at face value less unamortized issuance costs on our balance sheet, and we present the fair value for required disclosure purposes only.

As of December 31, 2023 December 31, 2024, we had cash, cash equivalents and restricted cash of $467.6 million $562.0 million, consisting primarily of bank deposits and money market funds. As of December 31, 2023 December 31, 2024, we had no borrowings outstanding under our 2019 Amended Credit Agreement. Such interest-bearing instruments carry a degree of interest rate risk; however, historical fluctuations of interest expense have not been significant.

Interest rate risk relates to the gain/increase or loss/decrease we could incur on our debt balances and interest expense associated with changes in interest rates. Changes in interest rates would impact the amount of interest income we realize on our invested cash

balances. It is our policy not to enter into derivative instruments for speculative purposes, and therefore, we hold no derivative instruments for trading purposes.

Item 8. Financial Statements and Supplementary Data.

The financial statements required by this Item 8 are included in our consolidated financial statements and set forth in the pages indicated in Part IV, Item 15(a) of this Annual Report on Form 10-K and are incorporated herein by reference.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures (as defined in Rule 13a-15(e) or 15d-15(e) of the Securities Exchange Act) Act of 1934, as amended (the "Exchange Act")) that are designed to ensure that information required to be disclosed in periodic reports filed with the SEC under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. The Company's management, with the participation of its Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) Act) as of December 31, 2023 December 31, 2024. Based upon that evaluation, the Company's Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of December 31, 2023 December 31, 2024.

(b) Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f) and 15d(f). Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with United States generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis.

Our management, including our Chief Executive Officer and Chief Financial Officer, conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2023 December 31, 2024 based on the criteria established by Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). In accordance with guidance issued by the Securities and Exchange Commission, companies are permitted to exclude acquisitions from their assessment of internal control over financial reporting for the first fiscal year in which the acquisition occurred. Accordingly, we have excluded from our assessment the internal control over financial reporting of OmniQuest KSK Analytics Inc., Metrics Design Automation Inc., and Research in Flight, LLC which was acquired in September 2023 and is are included in our December 31, 2023 December 31, 2024 consolidated financial statements. OmniQuest statements and constituted less than 1% of total and net assets (excluding acquired goodwill and intangible assets) as of December 31, 2023 December 31, 2024, and less than 1% of revenues for the year then ended.

Based on the evaluation under these frameworks, management has concluded that our internal control over financial reporting was effective as of December 31, 2023 December 31, 2024. The results of management's assessment have been reviewed with the Audit Committee.

The effectiveness of our internal control over financial reporting as of December 31, 2023 December 31, 2024, has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included elsewhere herein.

(c) Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fourth quarter ended December 31, 2023 December 31, 2024, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

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Item 9B. Other Information.

Insider Trading Arrangements and Policies

On During the fiscal quarter ended November 15, 2023 December 31, 2024, Teresa A. Harris James R. Scapa, a our member of our board of directors Chairman and Chief Executive Officer, adopted terminated a his previously adopted Rule 10b5-1 plan providing plan. The trading arrangement provided for the sale of up to 5,580 156,000 shares of the Company's our Class A common stock. Pursuant stock, was set to this plan Ms. Harris may sell shares beginning on March 5, 2024, subject to terms of the agreement, and the plan terminates on expire no later than November 15, 2024 May 28, 2025. The trading arrangement is , and was intended to satisfy the affirmative defense of Rule 10b5-1.

During the quarter ended December 31, 2024, except as provided above, none of the Company's directors or officers adopted or terminated a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement," as those terms are defined in Regulation S-K, Item 408, that was intended to satisfy the affirmative defense conditions of Rule 10b5-1(c).

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

None.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The Company has an insider trading policy governing the purchase, sale and other dispositions of the Company's securities that applies to all Company personnel, including directors, officers, employees, and other covered persons. The Company also follows procedures for the repurchase of its securities. The Company believes that its insider trading policy and repurchase procedures are reasonably designed to promote compliance with insider trading laws, rules and regulations, and listing standards applicable to the Company. A copy of the Company's insider trading policy is filed as Exhibit 19.1 to this Form 10-K.

The remaining information called for by this item will be set forth in our Proxy Statement for the 2024 2025 Annual Meeting of Stockholders, or Proxy Statement, to be filed with the SEC within 120 days of the fiscal year ended December 31, 2023 December 31, 2024, and is incorporated herein by reference.

Item 11. Executive Compensation.

The information called for by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

The information required by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) *Documents Filed as Part of This Annual Report on Form 10-K:*

(1) *Financial Statements:* The following consolidated financial statements and reports of the independent registered account firm are filed as part of this report:

(2) *Financial Statement Schedule:* The schedules have been omitted because they are not applicable, are not required, or the information required to be set forth therein is included in the consolidated financial statements or notes thereto.

(3) *Exhibits:* The exhibits listed in the accompanying Exhibit Index immediately following the financial statements are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K.

(b) Exhibits: See Item 15(a)(3) as set forth above.

(c) Financial Statement Schedules: See Item 15(a)(2) as set forth above.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Altair Engineering Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Altair Engineering Inc. and subsidiaries (the Company) as of December 31, 2023 December 31, 2024 and 2022, 2023, the related consolidated statements of operations, comprehensive income (loss), loss, changes in stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2023 December 31, 2024, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2023 December 31, 2024 and 2022, 2023, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 December 31, 2024, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2023December 31, 2024, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 22, 2024February 20, 2025 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit MattersMatter

The critical audit mattersmatter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit mattersmatter below, providing a separate opinionsopinion on the critical audit mattersmatter or on the accounts or disclosures to which it relates.

	Software Revenue Recognition
Description of the Matter	As described in Note 3, the Company's software contracts with customers typically include promises to transfer licenses and services to a customer. Judgment is required to determine if the promises are separate performance obligations within the context of the arrangement, and if so, the allocation of the transaction price to each performance obligation. The Company's determination of standalone selling price for performance obligations is based on the midpoint of the range of historical observable prices for goods and services sold separately. In addition, the Company estimates the standalone selling price for certain performance obligations where observable prices are not directly available, or a significant portion of historical prices are not within the range. The Company estimates the standalone selling price at contract inception considering all information that is reasonably available and based on the amount of consideration for which the Company expects to be entitled in exchange for transferring the promised good or service to the customer. Auditing the Company's estimate of the standalone selling prices in software contracts was challenging and complex due to the Company's wide range of observable prices from goods or services sold separately and the estimation used for certain performance obligations where observable prices are not available.

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How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of the Company's process and controls to establish and monitor the relative standalone selling price for each distinct performance obligation in software contracts.

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To test the estimated standalone selling prices, our audit procedures included, among others, evaluating the assumptions used by the Company to determine the standalone selling price for each distinct performance obligation in its software contracts. For example, we evaluated the methodology used to determine the standalone selling price by testing a historical analysis prepared by the Company and practices observed in the industry. We also tested the completeness and accuracy of the data used in the analysis and recalculated the standalone selling prices.

We have served as the Company's auditor since 2015.

/s/ Ernst & Young LLP

Detroit, Michigan
February 22, 2024
20, 2025

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Altair Engineering Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Altair Engineering Inc. and subsidiaries' internal control over financial reporting as of December 31, 2023 December 31, 2024, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Altair Engineering Inc. and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023 December 31, 2024, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of OmniQuest, KSK Analytics Inc., Metrics Design Automation Inc., and Research in Flight, LLC which is are included in the December 31, 2023 December 31, 2024 consolidated financial statements of the Company and constituted less than 1% of total and net assets (excluding acquired goodwill and intangible assets) as of December 31, 2023 December 31, 2024, and less than 1% of revenues for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of OmniQuest. KSK Analytics Inc., Metrics Design Automation Inc., and Research in Flight, LLC.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2023 2024 consolidated financial statements of the Company and our report dated February 22, 2024 February 20, 2025 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Detroit, Michigan

February 22, 2024 20, 2025

ALTAIR ENGINEERING INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	December 31,		December 31,	
(in thousands)	**2023**	**2022**	**2024**	**2023**
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents	$ 467,459	$ 316,146	$ 561,898	$ 467,459
Accounts receivable, net	190,461	170,279	173,509	190,461
Income tax receivable	16,650	11,259	21,513	16,650
Prepaid expenses and other current assets	26,053	29,142	28,058	26,053
Total current assets	700,623	526,826	784,978	700,623
Property and equipment, net	39,803	37,517	41,008	39,803
Operating lease right of use assets	30,759	33,601	31,117	30,759
Goodwill	458,125	449,048	462,459	458,125
Other intangible assets, net	83,550	107,609	72,937	83,550
Deferred tax assets	9,955	9,727	8,770	9,955
Other long-term assets	40,678	40,410	44,378	40,678
TOTAL ASSETS	$ 1,363,493	$ 1,204,738	$ 1,445,647	$ 1,363,493
LIABILITIES AND STOCKHOLDERS' EQUITY				
CURRENT LIABILITIES				
Accounts payable	$ 8,995	$ 10,434	$ 7,316	$ 8,995
Accrued compensation and benefits	45,081	42,456	50,328	45,081
Current portion of operating lease liabilities	8,825	10,396	7,876	8,825
Other accrued expenses and current liabilities	48,398	56,371	56,058	48,398
Deferred revenue	131,356	113,081	139,085	131,356
Current portion of convertible senior notes, net	81,455	—	227,106	81,455

Total current liabilities	324,110	232,738	487,769	324,110
Convertible senior notes, net	225,929	305,604	—	225,929
Operating lease liabilities, net of current portion	22,625	24,065	24,141	22,625
Deferred revenue, non-current	32,347	31,379	28,531	32,347
Other long-term liabilities	47,151	41,216	48,017	47,151
TOTAL LIABILITIES	652,162	635,002	588,458	652,162
Commitments and contingencies				
STOCKHOLDERS' EQUITY				
Preferred stock ($0.0001 par value), authorized 45,000 shares, none issued or outstanding	—	—	—	—
Common stock ($0.0001 par value)				
Class A common stock, authorized 513,797 shares, issued and outstanding 55,240 and 52,277 shares as of December 31, 2023 and 2022, respectively	5	5		
Class B common stock, authorized 41,203 shares, issued and outstanding 26,814 and 27,745 shares as of December 31, 2023 and 2022, respectively	3	3		
Class A common stock, authorized 513,797 shares, issued and outstanding 60,181 and 55,240 shares as of December 31, 2024 and 2023, respectively	6	5		
Class B common stock, authorized 41,203 shares, issued and outstanding 25,394 and 26,814 shares as of December 31, 2024 and 2023, respectively	3	3		
Additional paid-in capital	864,135	721,307	1,010,789	864,135
Accumulated deficit	(130,503)	(121,577)	(116,328)	(130,503)
Accumulated other comprehensive loss	(22,309)	(30,002)	(37,281)	(22,309)
TOTAL STOCKHOLDERS' EQUITY	711,331	569,736	857,189	711,331
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 1,363,493	$ 1,204,738	$ 1,445,647	$ 1,363,493

See accompanying notes to consolidated financial statements.

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ALTAIR ENGINEERING INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,			Year Ended December 31,		
(in thousands, except per share data)	**2023**	**2022**	**2021**	**2024**	**2023**	**2022**
Revenue						
License	$ 393,144	$ 363,520	$ 324,808	$ 435,288	$ 393,144	$ 363,520
Maintenance and other services	156,830	142,988	128,938	176,612	156,830	142,988
Total software	549,974	506,508	453,746	611,900	549,974	506,508
Software related services	28,032	30,661	31,823			
Total software and related services	578,006	537,169	485,569			
Client engineering services	29,497	28,883	39,282			
Other	5,198	6,169	7,328			
Engineering services and other	53,888	62,727	65,713			
Total revenue	612,701	572,221	532,179	665,788	612,701	572,221
Cost of revenue						
License	15,088	20,497	19,929	15,099	15,088	20,497

Maintenance and other services	56,094	51,946	47,862	64,014	56,094	51,946
Total software	71,182	72,443	67,791	79,113	71,182	72,443
Software related services	21,830	21,858	23,205			
Total software and related services	93,012	94,301	90,996			
Client engineering services	24,450	23,577	31,710			
Other	4,329	5,011	6,960			
Engineering services and other	45,690	50,609	50,446			
Total cost of revenue	121,791	122,889	129,666	124,803	121,791	122,889
Gross profit	490,910	449,332	402,513	540,985	490,910	449,332
Operating expenses						
Research and development	212,645	202,542	167,341	221,161	212,645	202,542
Sales and marketing	176,138	163,884	141,484	184,280	176,138	163,884
General and administrative	70,887	72,288	66,474	90,150	70,887	72,288
Amortization of intangible assets	30,851	27,510	18,357	33,022	30,851	27,510
Other operating expense (income), net	146	(9,955)	(3,482)			
Other operating (income) expense, net	(5,313)	146	(9,955)			
Total operating expenses	490,667	456,269	390,174	523,300	490,667	456,269
Operating income (loss)	243	(6,937)	12,339	17,685	243	(6,937)
Interest expense	6,116	4,377	12,065	5,836	6,116	4,377
Other (income) expense, net	(18,492)	16,899	562	(20,781)	(18,492)	16,899
Income (loss) before income taxes	12,619	(28,213)	(288)	32,630	12,619	(28,213)
Income tax expense	21,545	15,216	8,506	18,455	21,545	15,216
Net loss	$ (8,926)	$ (43,429)	$ (8,794)			
Loss per share:						
Net loss per share attributable to common stockholders, basic and diluted	$ (0.11)	$ (0.55)	$ (0.12)			
Weighted average shares outstanding:						
Weighted average number of shares used in computing net loss per share, basic and diluted	80,596	79,472	76,179			
Net income (loss)	$ 14,175	$ (8,926)	$ (43,429)			
Income (loss) per share, basic						
Income (loss) per share	$ 0.17	$ (0.11)	$ (0.55)			
Weighted average shares	84,085	80,596	79,472			
Income (loss) per share, diluted						
Income (loss) per share	$ 0.16	$ (0.11)	$ (0.55)			
Weighted average shares	88,558	80,596	79,472			

See accompanying notes to consolidated financial statements.

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ALTAIR ENGINEERING INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS) LOSS

(in thousands)	Year Ended December 31, 2023	2022	2021
Net loss	$ (8,926)	$ (43,429)	$ (8,794)
Other comprehensive income (loss), net of tax:			
Foreign currency translation (net of tax effect of $0 for all periods)	9,011	(24,084)	(7,254)
Retirement related benefit plans (net of tax effect of $177, $(308) and $(296), respectively)	(1,318)	3,032	1,101
Total other comprehensive income (loss)	7,693	(21,052)	(6,153)
Comprehensive income (loss)	$ (1,233)	$ (64,481)	$ (14,947)

(in thousands)	Year Ended December 31, 2024	2023	2022
Net income (loss)	$ 14,175	$ (8,926)	$ (43,429)
Other comprehensive (loss) income, net of tax:			
Foreign currency translation (net of tax effect of $0 for all periods)	(15,490)	9,011	(24,084)
Retirement related benefit plans (net of tax effect of $(251), $177 and $(308), respectively)	518	(1,318)	3,032
Total other comprehensive (loss) income	(14,972)	7,693	(21,052)
Comprehensive loss	$ (797)	$ (1,233)	$ (64,481)

See accompanying notes to consolidated financial statements.

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ALTAIR ENGINEERING INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)

(in thousands)	Common stock Class A Shares	Class A Amount	Class B Shares	Class B Amount	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total stockholders' equity
Balance at December 31, 2020	44,216	$ 4	30,111	$ 3	$ 474,669	$ (93,293)	$ (2,797)	$ 378,586
Net loss	—	—	—	—	—	(8,794)	—	(8,794)
Issuance of common stock in private placement, net of issuance costs	2,936	1	—	—	199,871	—	—	199,872

(in thousands)	Common stock Class A Shares	Class A Amount	Class B Shares	Class B Amount	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total stockholders' equity

Issuance of common stock for acquisitions	155	—	—	—	3,690	—	—	3,690								
Exercise of stock options	1,478	—	—	—	2,262	—	—	2,262								
Vesting of restricted stock	373	—	—	—	—	—	—	—								
Conversion from Class B to Class A common stock	2,366	—	(2,366)	—	—	—	—	—								
Stock-based compensation	—	—	—	—	43,734	—	—	43,734								
Foreign currency translation, net of tax	—	—	—	—	—	—	(7,254)	(7,254)								
Retirement related benefit plans, net of tax	—	—	—	—	—	—	1,101	1,101								
Balance at December 31, 2021	51,524	5	27,745	3	724,226	(102,087)	(8,950)	613,197	51,524	$ 5	27,745	$ 3	$ 724,226	$ (102,087)	$ (8,950)	$ 613,197
Cumulative effect of an accounting change	—	—	—	—	(50,009)	23,939	—	(26,070)	—	—	—	—	(50,009)	23,939	—	(26,070)
Net loss	—	—	—	—	—	(43,429)	—	(43,429)	—	—	—	—	—	(43,429)	—	(43,429)
Settlement of convertible senior notes	—	—	—	—	(29,756)	—	—	(29,756)	—	—	—	—	(29,756)	—	—	(29,756)
Repurchase and retirement of common stock	(461)	—	—	—	(21,658)	—	—	(21,658)	(461)	—	—	—	(21,658)	—	—	(21,658)
Reclassification of mezzanine equity to permanent equity	—	—	—	—	784	—	—	784	—	—	—	—	784	—	—	784
Issuance of common stock for acquisitions	111	—	—	—	224	—	—	224	111	—	—	—	224	—	—	224
Issuance of common stock for employee stock purchase program	185	—	—	—	8,723	—	—	8,723	185	—	—	—	8,723	—	—	8,723
Exercise of stock options	440	—	—	—	3,577	—	—	3,577	440	—	—	—	3,577	—	—	3,577

Vesting of restricted stock	478	—	—	—	—	—	—	—	478	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	85,196	—	—	85,196	—	—	—	—	85,196	—	—	85,196
Foreign currency translation, net of tax	—	—	—	—	—	—	(24,084)	(24,084)	—	—	—	—	—	—	(24,084)	(24,084)
Retirement related benefit plans, net of tax	—	—	—	—	—	—	3,032	3,032	—	—	—	—	—	—	3,032	3,032
Balance at December 31, 2022	52,277	$ 5	27,745	$ 3	$ 721,307	$ (121,577)	$ (30,002)	$ 569,736	52,277	5	27,745	3	721,307	(121,577)	(30,002)	569,736
Net loss	—	—	—	—	—	(8,926)	—	(8,926)	—	—	—	—	—	(8,926)	—	(8,926)
Repurchase and retirement of common stock	(91)	—	—	—	(4,256)	—	—	(4,256)	(91)	—	—	—	(4,256)	—	—	(4,256)
Issuance of common stock for acquisitions	349	—	—	—	17,570	—	—	17,570	349	—	—	—	17,570	—	—	17,570
Issuance of common stock for employee stock purchase program	183	—	—	—	7,793	—	—	7,793	183	—	—	—	7,793	—	—	7,793
Exercise of stock options	1,052	—	—	—	36,140	—	—	36,140	1,052	—	—	—	36,140	—	—	36,140
Vesting of restricted stock	539	—	—	—	—	—	—	—	539	—	—	—	—	—	—	—
Conversion from Class B to Class A common stock	931	—	(931)	—	—	—	—	—	931	—	(931)	—	—	—	—	—
Stock-based compensation	—	—	—	—	85,581	—	—	85,581	—	—	—	—	85,581	—	—	85,581
Foreign currency translation, net of tax	—	—	—	—	—	—	9,011	9,011	—	—	—	—	—	—	9,011	9,011
Retirement related benefit plans, net of tax	—	—	—	—	—	—	(1,318)	(1,318)	—	—	—	—	—	—	(1,318)	(1,318)
Balance at December 31, 2023	55,240	$ 5	26,814	$ 3	$ 864,135	$ (130,503)	$ (22,309)	$ 711,331	55,240	5	26,814	3	864,135	(130,503)	(22,309)	711,331
Net income	—	—	—	—	—	14,175	—	14,175								

Settlement of convertible senior notes	797	—	—	—	—	—	—	—
Issuance of common stock for acquisitions	259	—	—	—	4,020	—	—	4,020
Issuance of common stock for employee stock purchase program	125	—	—	—	8,549	—	—	8,549
Exercise of stock options	1,808	1	—	—	66,405	—	—	66,406
Vesting of restricted stock	532	—	—	—	—	—	—	—
Conversion from Class B to Class A common stock	1,420	—	(1,420)	—	—	—	—	—
Stock-based compensation	—	—	—	—	67,680	—	—	67,680
Foreign currency translation, net of tax	—	—	—	—	—	—	(15,490)	(15,490)
Retirement related benefit plans, net of tax	—	—	—	—	—	—	518	518
Balance at December 31, 2024	60,181	$ 6	25,394	$ 3	$ 1,010,789	$ (116,328)	$ (37,281)	$ 857,189

See accompanying notes to consolidated financial statements.

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ALTAIR ENGINEERING INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,			Year Ended December 31,		
(in thousands)	**2023**	**2022**	**2021**	**2024**	**2023**	**2022**
OPERATING ACTIVITIES:						
Net loss	$ (8,926)	$ (43,429)	$ (8,794)			
Adjustments to reconcile net loss to net cash provided by operating activities:						
Net income (loss)	$ 14,175	$ (8,926)	$ (43,429)			

Adjustments to reconcile net income (loss) to net cash provided by operating activities:						
Depreciation and amortization	39,124	35,504	25,644	42,164	39,124	35,504
Amortization of debt discount and issuance costs	1,869	1,792	11,428			
Stock-based compensation expense	85,581	84,787	44,549	67,680	85,581	84,787
Deferred income taxes	(2,319)	(4,164)	(1,502)	(707)	(2,319)	(4,164)
Loss (gain) on mark-to-market adjustment of contingent consideration	5,706	(7,153)	—	476	5,706	(7,153)
Expense on repurchase of convertible senior notes	—	16,621	—	—	—	16,621
Other, net	74	387	1,271	2,015	1,943	2,179
Changes in assets and liabilities:						
Accounts receivable	(19,141)	(34,175)	(15,645)	14,560	(19,141)	(34,175)
Prepaid expenses and other current assets	(1,915)	1,014	(9,026)	(7,622)	(1,915)	1,014
Other long-term assets	(52)	2,852	(6,682)	2,431	(52)	2,852
Accounts payable	(1,878)	3,771	(3,857)	(2,127)	(1,878)	3,771
Accrued compensation and benefits	1,783	280	7,761	7,013	1,783	280
Other accrued expenses and current liabilities	9,068	(59,463)	6,365	7,791	9,068	(59,463)
Deferred revenue	18,333	40,946	10,111	6,235	18,333	40,946
Net cash provided by operating activities	127,307	39,570	61,623	154,084	127,307	39,570
INVESTING ACTIVITIES:						
Payments for acquisition of businesses, net of cash acquired	(27,070)	(3,236)	(134,541)			
Capital expenditures	(10,193)	(9,648)	(7,849)	(14,086)	(10,193)	(9,648)
Payments for acquisition of businesses, net of cash acquired	(3,236)	(134,541)	(53,983)			
Other investing activities, net	(2,423)	(10,322)	(650)	(4,974)	(2,423)	(10,322)
Net cash used in investing activities	(15,852)	(154,511)	(62,482)	(46,130)	(15,852)	(154,511)
FINANCING ACTIVITIES:						
Settlement of convertible senior notes	(81,729)	—	—			
Proceeds from the exercise of common stock options	36,140	3,577	2,262	65,537	36,140	3,577
Proceeds from employee stock purchase plan contributions	7,978	8,976	4,222	9,157	7,978	8,976
Payments for repurchase and retirement of common stock	(6,255)	(19,659)	—	—	(6,255)	(19,659)
Proceeds from issuance of convertible senior notes, net of underwriters' discounts and commissions	—	224,265	—	—	—	224,265
Repurchase of convertible senior notes	—	(192,422)	—	—	—	(192,422)
Payments for issuance costs of convertible senior notes	—	(1,523)	—	—	—	(1,523)
Proceeds from private placement of common stock	—	—	200,000			
Payments on revolving commitment	—	—	(30,000)			
Other financing activities	(97)	(233)	(537)	—	(97)	(233)
Net cash provided by financing activities	37,766	22,981	175,947			
Net cash (used in) provided by financing activities	(7,035)	37,766	22,981			
Effect of exchange rate changes on cash, cash equivalents and restricted cash	1,397	(5,094)	(2,623)	(6,453)	1,397	(5,094)
Net increase (decrease) in cash, cash equivalents and restricted cash	150,618	(97,054)	172,465	94,466	150,618	(97,054)
Cash, cash equivalents and restricted cash at beginning of year	316,958	414,012	241,547	467,576	316,958	414,012
Cash, cash equivalents and restricted cash at end of period	$ 467,576	$ 316,958	$ 414,012	$ 562,042	$ 467,576	$ 316,958
Supplemental disclosures of cash flow:						
Interest paid	$ 4,242	$ 2,425	$ 633	$ 4,339	$ 4,242	$ 2,425
Income taxes paid	$ 11,291	$ 8,941	$ 9,168	$ 9,306	$ 11,291	$ 8,941
Supplemental disclosure of non-cash investing and financing activities:						
Issuance of common stock in connection with acquisitions	$ 17,570	$ 224	$ 3,690	$ 4,020	$ 17,570	$ 224

Promissory notes issued and deferred payment obligations for acquisitions and investments	$ 3,201	$ 1,350	$ 86,936	$ 7,774	$ 3,201	$ 1,350
Property and equipment in accounts payable and other current liabilities	$ 1,019	$ 659	$ 1,056	$ 1,049	$ 1,019	$ 659
Finance leases	$ —	$ —	$ 9			

See accompanying notes to consolidated financial statements.

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ALTAIR ENGINEERING INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Description of business

Altair Engineering Inc. (“Altair” or the “Company”) is incorporated in the state of Delaware. The Company is a global leader in computational science and artificial intelligence enabling organizations across broad industry segments to drive smarter decisions in an increasingly connected world. Altair delivers software and cloud solutions in the areas of simulation, and design, high-performance computing (“HPC”), data analytics, and artificial intelligence (“AI”). Altair’s products and services leverage computational intelligence science to drive innovation and intelligent decisions for a more connected, safe, and sustainable future. The Company is based in Troy, Michigan.

The Company’s simulation and AI-driven approach to innovation is powered by the Company’s broad portfolio of high-fidelity and high-performance physics solvers, our market leading technology for optimization and HPC, and our end-to-end platform for developing AI and Internet of Things (“IoT”) solutions. The Company’s integrated suite of software optimizes design performance across multiple disciplines encompassing structures, motion, fluids, thermal management, electromagnetics, system modeling, and embedded systems, while also providing AI solutions and true-to-life visualization and rendering. The Company's HPC solutions maximize the efficient utilization of complex compute resources and streamline the workflow management of compute-intensive tasks for applications including AI, modeling and simulation, and visualization. Altair's data analytics, AI, and IoT products include data preparation, data science, MLOps, orchestration, and visualization solutions that fuel engineering, scientific, and business decisions.

Altair also provides Client Engineering Services to support its customers with long-term ongoing product design and development expertise. This has the benefit of embedding the Company within customers, deepening its understanding of their processes, and allowing the Company to quickly perceive trends in the overall market, helping the Company to better tailor its software products’ research and development and sales initiatives. The Company hires engineers and data scientists for placement at a customer site for specific customer-directed assignments.

Pending Merger with Siemens Industry

On October 30, 2024, Altair entered into an agreement and plan of merger (the “Merger Agreement”) with Siemens Industry Software, Inc. ("Siemens Industry") and Astra Merger Sub Inc., a wholly owned subsidiary of Siemens Industry (“Merger Sub”), pursuant to which Merger Sub will merge with and into Altair (the “Merger”), with Altair surviving the Merger as a wholly owned subsidiary of Siemens Industry. Altair stockholders will receive $113.00 per share in cash, representing an enterprise value of approximately $10.6 billion. The $113.00 per share cash consideration represents a 19% premium to the closing price of Altair common stock on October 21, 2024. The transaction, which was unanimously approved by the Altair Board of Directors and obtained approval by Altair's stockholders, may close in the first half of 2025, following the receipt of certain regulatory approvals and foreign investment approvals and the satisfaction of customary closing conditions. Upon completion of the transaction, Altair’s common stock will no longer be listed on any public stock exchange.

For the year ended December 31, 2024, the Company incurred approximately $22.3 million in expenses related to the pending Merger with Siemens Industry. These costs are included in Cost of revenue for $1.2 million, Research and development expense for $1.8 million, Sales and marketing expense for $1.3 million, and General and administrative expense for $18.2 million.

2. Summary of significant accounting policies

Principles of consolidation

The accompanying consolidated financial statements have been prepared using accounting principles generally accepted in the United States of America (“GAAP”). The consolidated financial statements include the results of the Company and its controlled subsidiaries. Intercompany accounts and transactions have been eliminated in the consolidated financial statements.

Change in Classification Presentation of Indirect Costs Revenue and Cost of Revenue

Beginning Effective in the first quarter of 2023, 2024, the Company refined its classification of certain indirect costs to reflect the way management is now reviewing the information in decision making and to improve comparability with peers. These indirect costs include certain IT, facilities, and depreciation expenses that were previously reported primarily in General and administrative expense. These indirect costs have now been reclassified to Research and development, Sales and marketing, and General and administrative expenses based on global headcount. Management believes this refined methodology better reflects the nature of the costs and financial performance of the Company.

As a result, the Company's consolidated statements of operations have been recast for prior periods presented to reflect the effects of the changes to Research and development, Sales and marketing, and General and administrative expense. There was no net impact to total operating expenses, income from operations, net income or net income per share for any periods presented. The consolidated balance sheets, consolidated statements of comprehensive income, consolidated statements of changes in stockholders' equity, and the consolidated statements of cash flows were not affected by changes in changed the presentation of these costs. revenue and cost of revenue in its Consolidated

Statements of Operations to combine the financial statement line items (FSLIs) labeled "Software related services", "Client engineering services" and "Other" into one FSLI labeled "Engineering services and other". The change in presentation has been applied retrospectively and does not affect the software revenue, total revenue, software cost of revenue, or total cost of revenue amounts previously reported or have any effect on segment reporting.

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The following table summarizes the changes made to the consolidated statement of operations for the years ended December 31, 2022 and 2021 (in thousands):

	Year ended December 31, 2022		Year ended December 31, 2021	
	Previously Reported	Recast	Previously Reported	Recast
Operating expenses:				
Research and development	$ 185,863	$ 202,542	$ 151,049	$ 167,341
Sales and marketing	155,245	163,884	132,750	141,484
General and administrative	97,606	72,288	91,500	66,474
Amortization of intangible assets	27,510	27,510	18,357	18,357
Other operating income, net	(9,955)	(9,955)	(3,482)	(3,482)
Total operating expenses	$ 456,269	$ 456,269	$ 390,174	$ 390,174

Use of estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and reported amounts of revenue and expenses during the reporting periods. On an ongoing basis, management evaluates its significant estimates including the stand alone selling price, or SSP, for each distinct performance obligation included in customer contracts with multiple performance obligations, the incremental borrowing rate used in the valuation of lease liabilities, fair value of convertible senior notes, provision for expected credit losses, tax valuation allowances, liabilities for uncertain tax provisions, impairment of goodwill and intangible assets, retirement obligations, useful lives of intangible assets, revenue for fixed price contracts, and stock-based compensation. Actual results could differ from those estimates.

Foreign currency translation

The functional currency of the Company's foreign subsidiaries is their respective local currency. The assets and liabilities of the subsidiaries are translated to U.S. dollars at the exchange rate as of the balance sheet date. Equity balances and transactions are translated using historical exchange rates. Revenues and expenses are translated at the average exchange rate during the period. Translation adjustments arising from the use of differing exchange rates from period to period are recorded as a component of accumulated other comprehensive loss within stockholders' equity.

All assets and liabilities denominated in a currency other than the functional currency are remeasured into the functional currency with gains and losses recognized in foreign currency losses, net, in the consolidated statements of operations. The Company has no transactions which hedge purchase commitments and no intercompany balances which are designated as being of a long-term investment in nature.

Revenue recognition

Software revenue

Revenue is derived principally from the licensing of software products and from related maintenance contracts. The Company enters into contracts that include combinations of products, maintenance and services, which are accounted for as separate performance obligations with differing revenue recognition patterns.

Revenue from term-based software licenses is classified as software revenue. Term-based licenses are sold only as a bundled arrangement that includes the rights to a term-based software license and post-contract customer support (PCS), which includes unspecified technical enhancements and customer support. Maximizing the use of observable inputs, the Company determined that a majority of the estimated standalone selling prices of the term-based license is attributable to the term-based license and a minority is attributable to the PCS. The license component is classified as license revenue and recognized as revenue upon the later of delivery of the licensed product or the beginning of the license period. PCS is classified as maintenance and other services and is recognized ratably over the term of the contract, as the Company provides the PCS benefit over time as a stand ready to perform obligation.

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In addition to term-based software licenses, the Company sells perpetual licenses. Software revenue is recognized upon the later of delivery of the licensed product or the beginning of the license period. Typically, the Company’s perpetual licenses are sold with PCS. The Company allocates value in bundled perpetual and PCS arrangements based on the value relationship between the software license and maintenance. Revenue from PCS is classified as maintenance and other services and is recognized ratably over the term of the contract, as the Company satisfies the PCS performance obligation over time as a stand ready to perform obligation.

Revenue from training, consulting and other services is recognized as the services are performed and is classified as maintenance and other services in the consolidated statement of operations. For contracts in which the service consists of a single performance obligation, such as providing a training class to a customer, the Company recognizes revenue upon completion of the performance obligation. For service contracts that are longer in duration and often include multiple performance obligations (for example, point-in-time training and consulting), the Company measures the progress toward completion of the obligations and recognizes revenue accordingly. In measuring progress towards the completion of performance obligations, the Company typically utilizes output-based estimates for services with fixed fee arrangements, and estimates output based on the total tasks completed as compared to the total tasks required for each contract. Input-based estimates are utilized for services that involve general consultations with contractual billing arrangements based on time and materials, utilizing direct labor as the input measure.

The Company also executes arrangements through indirect channel partners in which the channel partners are authorized to market and distribute the Company's software products to end users of the Company's products and services in specified territories. In sales facilitated by channel partners, the channel partner bears the risk of collection from the end-user customer. The Company recognizes revenue from transactions with channel partners in a manner consistent with the direct sales described above for both perpetual and term-based licenses.

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Revenue from channel partner transactions is the amount remitted to the Company by the channel partners. This amount includes a fee for PCS that is compensation for providing technical enhancements and the second level of technical support to the end user, which is recognized over the period that PCS is to be provided. The Company does not offer right of return, product rotation, or price protection to any of its channel partners.

Non-income related taxes collected from customers and remitted to governmental authorities are recorded on the consolidated balance sheets as accounts receivable, net and other accrued expenses and current liabilities. These amounts are reported on a net basis in the consolidated statements of operations and do not impact reported revenues or expenses. Certain hardware revenue is included within software revenue and is recognized when all revenue recognition criteria stated above are met, which is generally when the products are delivered to end customers.

Software related Engineering services and other revenue

Consulting services from product design and development projects are considered distinct performance obligations and are provided to customers on a time-and-materials ("T&M") or fixed-price basis. The Company recognizes software services revenue for T&M contracts based upon hours worked and contractually agreed upon hourly rates using the input method. Revenue from fixed-price engagements is recognized using the output method based on the ratio of costs incurred to total estimated project costs.

Client engineering services

Client engineering services revenue are derived from professional services for staffing primarily representing engineers and data scientists located at a customer site. These professional services are considered distinct performance obligations and are provided to customers on a T&M basis. The Company recognizes this revenue for T&M contracts based upon hours worked and contractually agreed upon hourly rates using the input method.

Other

Other revenue includes product revenue Revenue from the sale of LED products, primarily for the replacement of fluorescent tubes. Revenue from the sale of LED products florescent tubes, is recognized when all revenue recognition criteria stated above are met, which is generally when the products are delivered to resellers or to end customers. Sales returns, which reduce revenue, are estimated using historical experience.

Property and equipment, net

Property and equipment are stated at cost, less accumulated depreciation and amortization. Equipment held under capital leases are stated at the present value of minimum lease payments less accumulated amortization. Depreciation is calculated using the straight-line method over the estimated useful lives of the assets.

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Expenditures for maintenance and repairs are charged to expense in the period incurred. Major expenditures for betterments are capitalized when they meet the criteria for capitalization. When assets are retired or otherwise disposed of, the cost and accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in the consolidated statements of operations in the period realized.

Building and improvements are depreciated over an estimated useful life of five to thirty-nine years. Computer equipment and software is depreciated over an estimated useful life of three to five years. Office furniture and equipment is depreciated over an estimated useful life of five to fifteen years. Leasehold improvements and assets acquired under capital leases are amortized over the lease term or the estimated useful life of the related asset or improvement, whichever is shorter.

Software development costs

Software development costs incurred prior to the establishment of technological feasibility are expensed as incurred. Technological feasibility is established upon the completion of a detailed program design. Capitalization of software development costs may begin upon the establishment of technological feasibility and ends when the product is available for general release. Generally, the time between the establishment of technological feasibility and commercial release of software is short. As such, all internal software development costs have been expensed as incurred and included in research and development expense in the accompanying consolidated statements of operations.

Impairment of long-lived assets

Long-lived assets, such as property and equipment, and definite-lived intangible assets, including developed technology, and customer relationships, and tradenames are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group to be tested for possible impairment, the Company compares the undiscounted future cash flows expected to be generated by that asset or asset group to its carrying amount. If the

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carrying amount of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment charge is recognized to the extent that the carrying amount exceeds its fair value. Fair value is determined through various valuation techniques, including discounted cash flow models and third-party independent appraisals. No impairment losses were recognized in 2024, 2023, 2022, or 2021. 2022.

Goodwill and other indefinite-lived intangible assets

Goodwill represents the excess of the consideration transferred for an acquired entity over the estimated fair values of the net tangible assets and the identifiable assets acquired. As described in Note 4 – Acquisitions, the Company has recorded goodwill in connection with certain acquisitions. Goodwill and other indefinite-lived intangible assets are is not amortized but rather are reviewed for impairment annually or more frequently if facts or circumstances indicate that the carrying value may not be recoverable.

The Company has determined that there is one reporting unit with goodwill subject to goodwill impairment testing. An entity has the option to perform a qualitative assessment to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying amount prior to performing the quantitative two-step impairment test.

The Company has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount prior to performing the quantitative two-step impairment test. The qualitative assessment evaluates various events and circumstances, such as macro-economic conditions, industry and market conditions, cost factors, relevant events and financial trends that may impact a reporting unit's fair value. If, after assessing the totality of events or circumstances, an entity determines it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill, then additional impairment testing is not required. However, if an entity concludes otherwise, then it is required to perform the two-step goodwill impairment test.

The impairment test involves comparing the estimated fair value of a reporting unit with its book value, including goodwill. If the estimated fair value exceeds book value, goodwill is considered not to be impaired. If, however, the fair value of the reporting unit is less than book value, then an impairment loss is recognized in an amount equal to the amount that the book value of the reporting unit exceeds its fair value, not to exceed the total amount of goodwill allocated to the reporting unit.

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The Company performs its annual impairment review of goodwill in the fourth quarter of each year and when a triggering event occurs between annual impairment dates. For 2023, 2024, the Company performed a qualitative assessment of goodwill and determined that it was not more likely than not that the fair value of its reporting unit with goodwill was less than its carrying amount. Accordingly, the Company determined that its goodwill was not impaired.

The Company performs its annual impairment review of indefinite-lived intangibles in the fourth quarter of each year and when a triggering event occurs between annual reporting dates.In 2023, the Company performed a qualitative assessment of indefinite-lived trade names and determined there was no indication of impairment. Accordingly, no impairment charges were recognized in 2023.

Government assistance

The Company receives incentives from federal, state and local governments in different regions of the world to primarily encourage the Company to establish, maintain, or increase investment or employment in the region. Government incentives are recorded in the consolidated financial statements in accordance with their purpose as a reduction of expense or other income based on the substance of the incentive received. Benefits are generally recorded when the conditions of the grant are met and there is reasonable assurance of receipt and receipt. The amounts are recorded in earnings as the expenses in which the incentive is meant to offset are incurred. For the years ended December 31, 2023 December 31, 2024, 2023 and 2022, respectively, other operating income includes $5.4 million, $5.6 million and $3.0 million of government related funding.

Receivable for R&D credit

The French government provides a research and development ("R&D") tax credit known as Credit Impôt Recherche, or CIR, in order to encourage Companies to invest in R&D. The tax credit is deductible from the French income tax and any excess is carried forward for three years. After three years, any unused credit may be reimbursed to the Company by the French government. As of December 31, 2024, the Company had approximately $10.6 million of receivables from the French government related to CIR, of which $5.8 million was recorded in Income tax receivable and the remaining $4.8 million was recorded in Other long-term assets. As of December 31, 2023, the Company had approximately $12.1 million of receivables from the French government related to CIR, of which $5.7 million was recorded in Income tax receivable and the remaining $6.4 million was recorded in Other long-term assets. As of December 31, 2022, the Company had approximately $10.0 million receivables from the French government related to CIR, of which $3.1 million was recorded in Income tax receivable and the remaining $6.9 million was recorded in Other long-term assets. CIR is subject to customary audit by the French tax authorities.

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Other Investments

Other investments include non-marketable equity investments in privately held companies, which do not have readily determinable fair values, and in which the Company does not have a controlling interest or significant influence. The Company applies the measurement alternative for non-marketable equity securities, measuring them at cost, less any impairment. These investments are presented within other long-term assets on our consolidated balance sheets and are periodically analyzed to determine whether there are indicators of impairment.

Income taxes

The Company accounts for income taxes under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and for operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date. The Company records net deferred tax assets to the extent it believes that these assets will more likely than not be realized. These deferred tax assets are subject to periodic assessments as to recoverability and if it is determined that it is more likely than not that the benefits will not be realized, valuation allowances are recorded which increase the provision for income taxes. In making such determination, the Company considers all available positive and negative evidence, including historical taxable income, projected future taxable income, the expected timing and reversal of existing temporary differences, ability to carryback losses, and tax planning strategies. If based upon the evidence, it is more likely than not that the deferred tax asset will not be realized, a valuation allowance is recorded. A valuation allowance is recognized to reduce deferred tax assets to the amount that management believes is more likely than not to be realized.

The Company applies a more-likely-than-not recognition threshold to its accounting for tax uncertainties. The Company reviews all of its tax positions and makes determinations as to whether its tax positions are more likely than not to be sustained upon examination by the relevant taxing authorities. Only those benefits that have a greater than fifty percent likelihood of being sustained upon

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examination by taxing authorities are recognized. Interest and penalties related to uncertain tax positions are recorded in the provision for income taxes in the consolidated statements of operations.

Research and development costs

Research and development costs are expensed as incurred. Research and development expenses consist primarily of salaries and benefits of research and development employees and costs incurred related to the development of new software products and significant enhancements and engineering changes to existing software products.

Advertising costs

Advertising costs are expensed as incurred. Advertising expenses were $5.1 4.6 million, $5.0 5.1 million and $4.3 5.0 million for the years ended December 31, 2023 December 31, 2024, 2023 and 2022, and 2021, respectively.

Assets held for sale

Assets held for sale are reported at the lower of the carrying amount or fair value less costs to sell. Depreciation expense is not recognized on assets held for sale. As of December 31, 2022, an office building in Korea and related assets of $2.7 million were classified as held for sale and presented in Prepaid expenses and other current assets. The sale of the building was finalized in February 2023.

Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, current portion of operating lease liabilities, and operating lease liabilities, net of current portion on the Company's consolidated balance sheets.

Stock-based compensation

Employee stock-based awards, consisting of stock options, restricted stock units (RSUs) and employee stock purchase plan (ESPP) shares expected to be settled by issuing shares of Class A common stock, are recorded as equity awards. The fair value of stock options and ESPP shares on the date of grant is measured using the Black-Scholes option pricing model. The Company expenses the grant date fair value of its time-vested stock options subject to graded vesting using the straight-line method over the applicable service period. The Company expenses the fair value of ESPP shares over the offering period. The fair value of RSUs is measured using the fair value of the Company's Class A common stock on the date of the grant. The fair value of RSUs is recognized as expense on a straight-line basis over the requisite service period, which is generally four years.

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Business combinations

The Company accounts for business acquisitions using the acquisition method of accounting. The fair value of purchase consideration of the acquired businesses is allocated to the identifiable tangible and intangible assets acquired and liabilities assumed in the transaction based upon their estimated fair values as of the acquisition date. The excess of the purchase price over those fair values is recorded as goodwill. During the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated statements of operations.

Recent accounting guidance

Accounting standards not yet adopted

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Reference Rate Reform – In March 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2020-04 *Reference Rate Reform (Topic 848) - Facilitation of the Effects of Reference Rate Reform on Financial Reporting.* This ASU provides optional expedients and exceptions for applying U.S. GAAP to contract modifications and hedging relationships, subject to meeting certain criteria, that reference LIBOR or another rate that is expected to be discontinued. The amendments in the guidance are optional and effective for all entities as of March 12, 2020 through December 31, 2022. In October 2022, the FASB Board voted to amend the sunset date of Company adopted ASU 2020-04 to on December 31, 2024. The Company is currently evaluating the impact adoption of this new guidance on its consolidated financial statements and related disclosures and does did not expect this guidance to have a material effect on its the Company's consolidated financial statements.

Segment Reporting – In November 2023, the FASB issued ASU 2023-07 *Segment Reporting (Topic 280) - Improvements to Reportable Segment Disclosures.* The update is intended to improve reportable segment disclosure requirements, primarily through enhanced disclosures about significant expenses. The ASU requires disclosures to include significant segment expenses that are regularly provided to the chief operating decision maker (CODM), a description of other segment items by reportable segment, and any additional measures of a segment's profit or loss used by the CODM when deciding how to allocate resources. The ASU also requires all annual disclosures currently required by Topic 280 to be included in interim periods. The Company adopted this update is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024, with early adoption permitted and requires retrospective application to all prior periods presented in the financial statements. The Company is currently evaluating the impact of adopting the updated standard. year ended December 31, 2024.

Accounting standards not yet adopted

Income Taxes – In December 2023, the FASB issued ASU 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*, which updates income tax disclosures related to the tax rate reconciliation and requires disclosure of income taxes paid by jurisdiction. The amendments are effective for fiscal years beginning after December 15, 2024. Early adoption is permitted. The amendments should be applied prospectively; however, retrospective application is permitted. The Company is currently evaluating this ASU to determine the effect on its related disclosures.

Income Statement – In November 2024, the FASB issued ASU 2024-03, *Income Statement - Reporting Comprehensive Income - Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses*, which requires additional disclosures over certain expenses, including purchases of inventory, employee compensation, depreciation, intangible asset amortization, and other specific expense categories. This update also requires disclosure of the total amount of selling expenses and the Company's definition of selling expenses. This update is effective for fiscal years beginning after December 15, 2026, and interim periods within fiscal years beginning after December 15, 2027. Early adoption is permitted. The Company is evaluating this ASU to determine the effect on its related disclosures.

Debt – In November 2024, the FASB issued ASU 2024-04, *Debt - Debt with Conversion and Other Options (Subtopic 470-20): Induced Conversion of Convertible Debt Instruments*, which clarifies the requirements for determining whether certain settlements of convertible debt instruments should be accounted for as an induced conversion. This update is effective for fiscal years beginning after December 15, 2025, including interim periods within those fiscal periods. Early adoption is permitted. The Company is evaluating this ASU to determine the effect on its related disclosures.

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3. Revenue from contracts with customers

Significant judgments

Software revenue

The Company’s contracts with customers typically include promises to transfer licenses and services to a customer. Judgment is required to determine if the promises are separate performance obligations within the context of the arrangement, and if so, the allocation of the transaction price to each performance obligation. The Company’s determination of standalone selling price for performance obligations is based on the midpoint of the range of historical observable prices for goods and services sold separately. In addition, the Company estimates the standalone selling price for certain performance obligations where observable prices are not directly available, or a significant portion of historical prices are not within the range. In instances where standalone selling price was not determined based on the range of historical observable prices for goods and services sold separately, the Company used an adjusted market assessment approach to estimate the standalone selling price. In such cases the Company has considered market conditions and other observable inputs, such as internal price lists, peer data, and industry data for a similar or identical product or service. The Company estimates standalone selling price at contract inception considering all information that is reasonably available and is based on the amount of consideration for which the Company expects to be entitled in exchange for transferring the promised good or service to the customer. The corresponding revenues are recognized as the related performance obligations are satisfied.

The Company’s contracts do not include a significant financing component requiring adjustment to the transaction price. Payment terms vary by contract type; however, arrangements typically stipulate a requirement for the customer to pay within 30 to 60 days.

The Company rarely enters into agreements to modify previously executed contracts, which constitute contract modifications. The Company assesses each of these contract modifications to determine (i) if the additional products and services are distinct from the products and services in the original arrangement; and (ii) if the amount of consideration expected for the added products and services reflects the stand-alone selling price of those products and services, as adjusted for contract-specific circumstances. A contract modification meeting both criteria is accounted for as a separate contract. A contract modification not meeting both criteria is considered a change to the original contract and is accounted for on either (i) a prospective basis as a termination of the existing contract and the creation of a new contract; or (ii) a cumulative catch-up basis. Generally, the Company’s contract modifications meet both criteria and are accounted for as a separate contract, as adjusted for contract-specific circumstances.

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Disaggregation of revenue

The Company disaggregates its revenue by type of performance obligation and timing of revenue recognition as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Term licenses and other	$ 353,065	$ 320,181	$ 283,226			
Term licenses and other software products	$ 388,751	$ 353,065	$ 320,181			
Perpetual licenses	40,079	43,339	41,582	46,537	40,079	43,339
Maintenance	148,779	135,752	122,733	164,380	148,779	135,752
Professional software services	8,051	7,236	6,205	12,232	8,051	7,236
Software related services	28,032	30,661	31,823	25,367	28,032	30,661
Client engineering services	29,497	28,883	39,282	25,027	29,497	28,883
Other	5,198	6,169	7,328	3,494	5,198	6,169
Total revenue	$ 612,701	$ 572,221	$ 532,179	$ 665,788	$ 612,701	$ 572,221

The Company derived approximately 13.6 13.3%, 13.9 13.6% and 12.0 13.9% of its total revenue through indirect sales channels for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively.

Costs to obtain a contract

The Company pays commissions for new software product and PCS sales as well as for renewals of existing software and PCS contracts. Commissions paid to obtain renewal contracts are not commensurate with the commissions paid for new product sales and therefore, a portion of the commissions paid for new contracts relate to future renewals.

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The Company accounts for new product sales commissions using a portfolio approach and allocates the cost of commissions in proportion to the allocation of the transaction price of license and PCS performance obligations. Commissions allocated to the license and license renewal components are expensed at the time the license revenue is recognized. Commissions allocated to PCS are capitalized and amortized on a straight-line basis over a period of four years, reflecting the Company's estimate of the expected period that it will benefit from those commissions. As of December 31, 2023 December 31, 2024 and 2022, 2023, respectively, capitalized costs to obtain a contract were $4.3 4.8 million and $3.9 4.3 million recorded in Prepaid and other current assets and $0.9 1.0 million and $0.4 0.9 million recorded in Other long-term assets. Sales commissions were $9.1 million, $8.8 million and $8.3 million for the years ended December 31, 2023 December 31, 2024, 2023 and 2022, respectively, and were included in Sales and marketing expense in the Company's consolidated statements of operations.

Contract assets

As of December 31, 2023 December 31, 2024 and 2022, 2023, respectively, contract assets were $5.2 4.9 million and $6.3 5.2 million included in Accounts receivable and $2.7 2.1 million and $2.3 2.7 million included in Prepaid expenses and other current assets in the Company's consolidated balance sheets.

Deferred revenue

Deferred revenue consists of billings made or payments received in advance of revenue recognition from software license, PCS and professional services agreements. The timing of revenue recognition may differ from the timing of billings to customers. Payment terms vary by the type and location of customer and the products or services offered. The term between invoicing and when payment is due is not significant. The Company generally invoices its customers annually for the forthcoming year of software licenses, and more frequently for other products and services. Accordingly, the Company's deferred revenue balance does not include revenue for future years of multiple year non-cancellable contracts that have not yet been billed.

Approximately $106.9 131.2 million of revenue recognized during 2023 2024 was included in the deferred revenue balances at the beginning of the year.

Revenue allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, which includes deferred revenue and amounts that will be invoiced and recognized as revenue in future periods. Contracted revenue not yet recognized was $251.8 270.6 million as of December 31, 2023 December 31, 2024, of which the Company expects to recognize approximately 66 71% over the next 12 months and the remainder thereafter.

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4. Acquisitions

2023 2024 Acquisitions

During the year ended December 31, 2023 December 31, 2024, the Company completed afour acquisitions that were accounted for as business combinations under the acquisition that was insignificant to the Company's consolidated financial statements. method. The preliminary aggregate purchase price transaction consideration of this acquisition was $6.1 36.8 million and was allocated to the assets acquired and liabilities assumed at their estimated fair values. The fair values assigned to the identifiable intangible assets acquired were based on estimates and assumptions determined by management. The aggregate allocation included $2.2 21.4 million to developed technology, $0.4 3.1 million to customer relationships, and $2.9 13.0 million to goodwill, of which $5.1 million is deductible for tax purposes. The operating results of this acquisition have been included in the consolidated financial statements since the acquisition date. All goodwill is was recorded in the Software segment. The Company expects to finalize the purchase accounting as soon as practicable, but not later than one year from the respective acquisition date. dates. These acquisitions were financed with cash on hand. The operating results of each acquisition have been included in the consolidated financial statements since the respective dates of acquisition and were not material to the consolidated financial statements. The Company's transaction costs related to the acquisition these 2024 acquisitions were not material.

Prior acquisitions

The Company finalized the valuation of all 2022 its 2023 acquisitions as of December 31, 2023 during the period ended December 31, 2024. There were no significant changes to the preliminary fair value of assets acquired and liabilities assumed, as previously reported.

The Company recognized a $0.5 million loss, a $5.7 million loss and a $7.2 million gain, respectively, for the years ended December 31, 2023 December 31, 2024, 2023 and 2022, from a mark-to-market adjustment adjustments of contingent consideration associated with the World Programming acquisition. acquisitions. The mark-to-market adjustments were included in Other operating (income) expense, (income), net in the consolidated statements of operations.

As of December 31, 2022, the Company had a $12.0 million contingent consideration liability related to the World Programming acquisition. The Company settled the liability in October 2023 by issuing 257,382 shares of its Class A common stock in accordance with the acquisition agreement.

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5. Supplementary Information

Cash, cash equivalents and restricted cash

The Company considers all highly liquid investments with original or remaining maturities of 90 days or less at the date of purchase to be cash equivalents. Cash and cash equivalents are recorded at cost, which approximates fair value. Restricted cash is included in Other long-term assets on the consolidated balance sheets. The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the consolidated balance sheets that sum to the total of the amounts reported in the consolidated statements of cash flows (in thousands):

	December 31,		December 31,	
	2023	2022	2024	2023
Cash and cash equivalents	$ 467,459	$ 316,146	$ 561,898	$ 467,459
Restricted cash included in other long-term assets	117	812	144	117
Total cash, cash equivalents, and restricted cash	$ 467,576	$ 316,958	$ 562,042	$ 467,576

Restricted cash represents amounts required for a contractual agreement with an insurer for the payment of potential health insurance claims, and term deposits for bank guarantees.

Accounts receivable, net

Accounts receivable, net consisted of the following (in thousands):

	December 31,		December 31,	
	2023	2022	2024	2023
Accounts receivable, trade	$ 185,275	$ 163,989	$ 168,625	$ 185,275
Contract assets	5,186	6,290	4,884	5,186
Accounts receivable, net	$ 190,461	$ 170,279	$ 173,509	$ 190,461

A provision for expected credit losses for groups of billed and unbilled receivables and contract assets that share similar risk characteristics is recorded based on an evaluation of historical loss experience, current conditions, and reasonable and supportable forecasts. Accounts are written off when it becomes apparent that such amounts will not be collected, generally when amounts are past due by greater than one year. Generally, the Company does not require collateral or charge interest on accounts receivable. Accounts

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receivable were reported net of a provision for credit loss of $2.9 1.7 million and $2.6 2.9 million at December 31, 2023 December 31, 2024 and 2022, 2023, respectively. Activity in the provision for credit loss was as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Balance, beginning of year	$ (2,590)	$ (2,539)	$ (2,559)	$ (2,941)	$ (2,590)	$ (2,539)
Provision charged to expense	(299)	(203)	(514)	(414)	(299)	(203)
Write-off, net of recoveries	6	498	500	1,508	6	498
Effects of foreign currency translation	(58)	(346)	34	102	(58)	(346)
Balance, end of year	$ (2,941)	$ (2,590)	$ (2,539)	$ (1,745)	$ (2,941)	$ (2,590)

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Property and equipment, net

Property and equipment consisted of the following (in thousands):

	Estimated useful lives	December 31, 2023	December 31, 2022	Estimated useful lives	December 31, 2024	December 31, 2023
Land	Indefinite	$ 8,376	$ 7,994	Indefinite	$ 8,371	$ 8,376
Building and improvements	5-39 years	17,528	16,995	5-39 years	17,903	17,528
Computer equipment and software	3-5 years	45,678	45,340	3-5 years	47,397	45,678
Office furniture and equipment	5-15 years	14,402	15,457	5-15 years	13,738	14,402
Leasehold improvements	(1)	8,380	8,766	(1)	9,284	8,380
Total property and equipment		94,364	94,552		96,693	94,364
Less: accumulated depreciation and amortization		54,561	57,035		55,685	54,561
Property and equipment, net		$ 39,803	$ 37,517		$ 41,008	$ 39,803

(1) Shorter of lease term or estimated useful life, generally ranging from five to ten years.

Depreciation expense was $8.3 9.1 million, $8.0 8.3 million and $7.3 8.0 million for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively.

Other liabilities

The following table provides the details of other accrued expenses and current liabilities (in thousands):

	December 31, 2023	December 31, 2022	December 31, 2024	December 31, 2023
Income taxes payable	$ 12,239	$ 11,524	$ 13,965	$ 12,239
Accrued VAT	8,710	8,402	10,390	8,710
Accrued professional fees	5,718	2,436		
Obligations related to acquisitions of businesses and technology	5,621	3,286		
Employee stock purchase plan obligations	4,155	3,969	4,762	4,155
Obligations related to acquisition of businesses	3,286	13,136		
Customer advances	2,700	921		
Accrued royalties	2,562	2,313		
Non-income tax liabilities	2,473	2,465	2,335	2,473
Accrued professional fees	2,436	3,637		
Billings in excess of cost	2,385	1,874	2,138	2,385
Accrued royalties	2,313	2,593		
Defined contribution plan liabilities	1,454	1,393	1,491	1,454
Other current liabilities	6,247	6,457	7,076	8,947
Total	$ 48,398	$ 56,371	$ 56,058	$ 48,398

The following table provides the details of other long-term liabilities (in thousands):

	December 31, 2023	December 31, 2022	December 31, 2024	December 31, 2023
Income tax reserves	$ 16,254	$ 10,852	$ 11,902	$ 16,254
Pension and other post-retirement liabilities	15,815	12,273	16,052	15,815
Deferred tax liabilities	12,870	16,775	13,314	12,870
Other liabilities	2,212	1,316	6,749	2,212
Total	$ 47,151	$ 41,216	$ 48,017	$ 47,151

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Private placement financing

In September 2021, the Company issued 2,935,564 shares of its Class A common stock in a private placement to Matrix Capital Management Company LP, for aggregate proceeds of $200.0 million. The Company filed a registration statement with the U.S. Securities and Exchange Commission (the "SEC") registering the resale of the shares of common stock issued in the private placement declared or deemed effective by the SEC in August 2022.

Restructuring expense

In 2021, the Company initiated a restructuring plan to realign resources with the Company's current business outlook and cost structure. The restructuring plan resulted in charges for employee termination benefits of $5.1 million for the year ended December 31, 2021. The restructuring costs were attributable primarily to the Software reportable segment. The restructuring plan was completed and all amounts were paid in 2021. There were no restructuring costs for the years ended December 31, 2023 and 2022.

Other (income) expense, net

Other (income) expense, net consists of the following (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Interest income	$ (16,855)	$ (4,127)	$ (541)	$ (22,995)	$ (16,855)	$ (4,127)
Foreign exchange (gain) loss	(1,637)	4,405	1,103			
Foreign exchange loss (gain)	2,214	(1,637)	4,405			
Expense on repurchase of convertible senior notes	—	16,621	—	—	—	16,621
Other (income) expense, net	$ (18,492)	$ 16,899	$ 562	$ (20,781)	$ (18,492)	$ 16,899

6. Goodwill and other intangible assets

Goodwill

The changes in the carrying amount of goodwill, which is attributable to the Software reportable segment, are as follows (in thousands):

Balance as of December 31, 2021	$ 370,178
Acquisitions	96,092
Foreign currency translation and other	(17,222)
Balance as of December 31, 2022	449,048
Acquisitions	2,948
Foreign currency translation and other	6,129
Balance as of December 31, 2023	$ 458,125

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Balance as of December 31, 2022	$ 449,048
Acquisitions	2,948
Foreign currency translation and other	6,129
Balance as of December 31, 2023	458,125

Acquisitions	13,027
Foreign currency translation and other	(8,693)
Balance as of December 31, 2024	$ 462,459

Other intangible assets

A summary of other intangible assets is shown below (in thousands):

	December 31, 2023			
	Weighted average amortization period	Gross carrying amount	Accumulated amortization	Net carrying amount
Definite-lived intangible assets:				
Developed technology	4-6 years	$ 142,368	$ 90,729	$ 51,639
Customer relationships	7-10 years	58,316	37,779	20,537
Other intangibles	4-10 years	1,459	563	896
Total definite-lived intangible assets		202,143	129,071	73,072
Indefinite-lived intangible assets:				
Trade names		10,478		10,478
Total other intangible assets		$ 212,621	$ 129,071	$ 83,550

	December 31, 2024			
	Weighted average amortization period	Gross carrying amount	Accumulated amortization	Net carrying amount
Developed technology	4-6 years	$ 159,815	$ 112,494	$ 47,321
Customer relationships	4-10 years	60,556	44,524	16,032
Trade names and other intangibles	3-10 years	11,551	1,967	9,584
Total other intangible assets		$ 231,922	$ 158,985	$ 72,937

	December 31, 2022			
	Weighted average amortization period	Gross carrying amount	Accumulated amortization	Net carrying amount
Definite-lived intangible assets:				
Developed technology	4-6 years	$ 135,703	$ 67,665	$ 68,038
Customer relationships	7-10 years	57,143	29,148	27,995
Other intangibles	4-10 years	1,448	298	1,150
Total definite-lived intangible assets		194,294	97,111	97,183
Indefinite-lived intangible assets:				
Trade names		10,426		10,426
Total other intangible assets		$ 204,720	$ 97,111	$ 107,609

	December 31, 2023			
	Weighted average amortization period	Gross carrying amount	Accumulated amortization	Net carrying amount

Developed technology	4-6 years	$ 142,368	$ 90,729	$ 51,639
Customer relationships	7-10 years	58,316	37,779	20,537
Trade names and other intangibles	4-10 years	11,937	563	11,374
Total other intangible assets		$ 212,621	$ 129,071	$ 83,550

Amortization expense related to amortizing intangible assets was $30.9 33.0 million, $27.5 30.9 million and $18.4 27.5 million for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively.

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Estimated amortization expense for the next five years as of December 31, 2023 December 31, 2024, is as follows (in thousands):

Year ending		
December 31, 2024	$ 28,835	
December 31, 2025	22,103	$ 29,670
December 31, 2026	15,920	23,528
December 31, 2027	4,689	11,680
December 31, 2028	1,286	5,981
December 31, 2029	1,922	
Thereafter	239	156
Total	$ 73,072	$ 72,937

7. Debt

Convertible senior notes

2027 Notes

In June 2022, the Company issued $230.0 million aggregate principal amount of 1.750% convertible senior notes due in 2027 (the "2027 Notes"), which includes the initial purchaser’s exercise in full of its option to purchase an additional $30.0 million principal amount of the 2027 Notes, in a private offering. The net proceeds from the issuance of the 2027 Notes was $224.3 million after deducting discounts, commissions and estimated issuance costs.

The Company entered into an Indenture relating to the issuance of the 2027 Notes dated June 14, 2022 (the “Indenture”), by and between the Company and U.S. Bank Trust Company, National Association, as trustee. The Indenture includes customary covenants and sets forth certain events of default after which the 2027 Notes may be declared immediately due and payable and sets forth certain

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types of bankruptcy or insolvency events of default involving the Company after which the 2027 Notes become automatically due and payable. The 2027 Notes are senior unsecured obligations of the Company.

The 2027 Notes mature on June 15, 2027, unless earlier repurchased, redeemed or converted. The Prior to the consummation of the Merger, the Company may redeem for cash all or, subject to certain limitations, any portion of the 2027 Notes, at its option, on or after June 20, 2025 if the last reported sale price of Altair's Class A Common Stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period, at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. Once the Merger is consummated, the Company will settle conversions solely in cash based upon the per share Merger Consideration payable under the Merger Agreement. The 2027 Notes bear interest at a rate of 1.750% per year, payable semiannually in arrears on June 15 and December 15 of each year, which commenced on December 15, 2022.

The 2027 Notes have an initial conversion rate of 13.9505 shares of the Company's Class A common stock per $1,000 principal amount of 2027 Notes, which is equivalent to an initial conversion price of approximately $71.68 per share of Class A common stock. The conversion rate will be subject to adjustment upon the occurrence of certain events specified in the Indenture but will not be adjusted for any accrued and unpaid interest. In addition, upon the occurrence of a make whole fundamental change, which includes the Merger, or a redemption period (each as defined in the Indenture), the Company will, in certain circumstances, increase the conversion rate by a specified number of additional shares for a holder who elects to convert its 2027 Notes in connection with such make whole fundamental change or during the relevant redemption period. Holders Prior to the Merger, holders of the 2027 Notes may convert all or any portion of their 2027 Notes at any time prior to the close of business on the business day immediately preceding December 15, 2026, in integral multiples of $1,000 principal amount, only under the following circumstances:

- during any calendar quarter, if the last reported sale price of the Class A Common Stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any five consecutive trading day period (the “measurement period”) in which the trading price (as defined in the Indenture) per $1,000 principal amount of the 2027 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Class A Common Stock and the conversion rate on each such trading day;

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- if the Company calls the 2027 Notes for redemption (which the Company may not do prior to June 20, 2025), at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date but only with respect to the 2027 Notes called (or deemed called) for redemption; or
- upon the occurrence of specified corporate events.

On or after December 15, 2026 until the close of business on the business day immediately preceding the maturity date, holders may convert their 2027 Notes at any time, regardless of the foregoing circumstances. Upon conversion prior to the consummation of the Merger, the Company will pay or deliver, as the case may be, cash, shares of Class A Common Stock or a combination of cash and shares of the Class A Common Stock, at the Company’s election, in the manner and subject to the terms and conditions provided in the Indenture.

During the period ended December 31, 2024, the conditions allowing holders of the 2027 Notes to convert were met. Therefore, the 2027 Notes were classified as current on the consolidated balance sheet as of December 31, 2024. During the period ended December 31, 2023, the conditions allowing holders of the 2027 Notes to convert were not met. Therefore, the 2027 Notes were classified as long-term debt on the consolidated balance sheet as of December 31, 2023.

As of December 31, 2023 December 31, 2024, the “if converted value” of the 2027 Notes exceeded the principal amount by $40.0 120.1 million.

2024 Notes

In June 2019, the Company issued $230.0 million aggregate principal amount of 0.25% convertible senior notes maturing on June 1, 2024 (the "2024 Notes" together with the 2027 Notes "Convertible Notes"), which includes the underwriters’ exercise in full of their option to purchase an additional $30.0 million principal amount of the 2024 Notes, in a public offering. The net proceeds from the issuance of the 2024 Notes were $221.9 million after deducting the underwriting discounts and commissions and issuance costs. The 2024 Notes have had an initial conversion rate of 21.5049 shares of the Company's Class A common stock per $1,000 principal amount of 2024 Notes, which is was equivalent to an initial conversion price of approximately $46.50 per share of its Class A common stock. The interest rate is was fixed at 0.25% per year, payable semi-annually in arrears on June 1 and December 1 of each year, which commenced on December 1, 2019. The 2024 Notes mature on June 1, 2024, unless, earlier repurchased or redeemed by the Company or converted pursuant to their terms.

Prior to January 1, 2022, the Company separated the 2024 Notes into liability and equity components. On issuance, the carrying amount of the equity component was recorded as a debt discount and subsequently amortized to interest expense. Effective January 1, 2022, the Company adopted ASU 2020-06 using the modified retrospective approach. As a result, the 2024 Notes are accounted for as a single liability measured at amortized cost, as no other embedded features require bifurcation and recognition as derivatives. Adoption of the new standard resulted in a decrease to Accumulated deficit of $23.9 million, a decrease to Additional paid-in capital of $50.0 million, and an increase to Convertible senior notes, net of $26.1 million.

During the year ended December 31, 2022, using proceeds from the issuance of the 2027 Notes, the Company entered into separate privately negotiated transactions with certain holders of the 2024 Notes to repurchase and retire $148.2 million aggregate principal amount of the 2024 Notes for an aggregate amount of $192.4 million of cash including accrued and unpaid interest. The Company recognized expense of $16.6 million, representing the fair value of the consideration paid to certain holders of the 2024 Notes in excess of the value to which they were entitled to receive on the respective settlement dates. The amount is included in Other expense, net in the Company's consolidated statement of operations.

As of December 31, 2023, until the close of business on the business day immediately preceding the maturity date, holders may convert their In June 2024, Notes at any time. Upon conversion, the Company has elected to settle settled the 2024 Notes par value in cash and to settle the premium in shares of Class A common stock, subject to the terms and conditions provided in the Indenture. As of December 31, 2023, $81.7 million remaining principal amount of the 2024 Notes remained outstanding and were classified as current liabilities on the consolidated balance sheet. totaling approximately $

As of December 31, 2023, the "if converted value" of the 2024 Notes exceeded 81.7 million by paying cash for the principal amount by of $66.2 81.7 million and issuing 796,817 shares of the Company's common stock, with a fair value of $70.8 million.

The net carrying value of the 2027 and 2024 Notes was as follows (in thousands):

	December 31, 2023		December 31, 2022		December 31, 2024		December 31, 2023	
	2027 Notes	2024 Notes	2027 Notes	2024 Notes	2027 Notes	2024 Notes	2027 Notes	2024 Notes
Principal	$ 230,000	$ 81,729	230,000	$ 81,754	$ 230,000	$ —	230,000	$ 81,729
Less: unamortized debt issuance costs	4,071	274	5,247	903	2,894	—	4,071	274
Net carrying amount	$ 225,929	$ 81,455	$ 224,753	$ 80,851	$ 227,106	$ —	$ 225,929	$ 81,455

The interest expense related to the 2027 and 2024 Notes was as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Contractual interest expense	$ 4,230	$ 2,452	$ 575	$ 4,110	$ 4,230	$ 2,452
Amortization of debt issuance cost and discount	1,806	1,745	11,405	1,452	1,806	1,745
Total	$ 6,036	$ 4,197	$ 11,980	$ 5,562	$ 6,036	$ 4,197

Credit agreement

Revolving credit facility

On November 7, 2022 As of December 31, 2024, the Company exercised the $50.0 million accordion feature of its credit facility in accordance with the terms and conditions set forth in its credit agreement. In June 2022, the Company amended its credit agreement to, among other things, permit the issuance of the 2027 Notes and extend the maturity date of the credit facility to December 31, 2025.

As of December 31, 2023, the Company has had a $200.0 million credit agreement with a maturity date of December 31, 2025 (“2019 Amended Credit Agreement”) and there were no outstanding borrowings. The 2019 Amended Credit Agreement is available for general corporate purposes, including working capital, capital expenditures, and permitted acquisitions.

Borrowings under the 2019 Amended Credit Agreement bear interest at a rate per annum equal to an agreed upon applicable margin plus, at the Company’s option, either the Alternate Base Rate (defined as the greatest of (1) the Prime Rate (as defined in the 2019 Amended Credit Agreement) in effect on such day, (2) the Federal Funds Effective Rate (as defined in the 2019 Amended Credit Agreement) in effect on such day plus 1/2 of 1.00% and (3) the Adjusted Term SOFR Rate (as defined in the 2019 Amended Credit Agreement) for one-month interest period as published two U.S. Government Securities Business Days prior to such day (or if such day is not a business day, the immediately preceding business day) plus 1.00%) or the Adjusted Term SOFR Rate. The applicable

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margin for borrowings under the 2019 Amended Credit Agreement is based on the Company’s most recently tested senior secured leverage ratio and will vary from (a) in the case of Term Benchmark loans, 1.25% to 2.00%, and (b) in the case of ABR loans or swingline loans, 0.25% to 1.00%. The Company pays a commitment fee ranging from 0.15% to 0.30% on the unused portion of the 2019 Amended Credit Agreement.

Collateral and guarantees

The 2019 Amended Credit Agreement is secured by collateral including (i) substantially all of the Company’s properties and assets, and the properties and assets of the Company’s domestic subsidiaries but excluding any patents, copyrights, patent applications or copyright applications or any trade secrets or software products and (ii) pledges of the equity interests in all present and future domestic subsidiaries (subject to certain exceptions as provided for under the 2019 Amended Credit Agreement). The Company’s direct and indirect domestic subsidiaries are guarantors of all the obligations under the 2019 Amended Credit Agreement.

Debt covenants

The 2019 Amended Credit Agreement requires the Company to maintain a Senior Secured Leverage Ratio not greater than 3.00 to 1.00 as of the last day of each fiscal quarter. The Senior Secured Leverage Ratio is defined as the ratio of total indebtedness secured by a lien (net of unrestricted domestic cash in excess of $20.0 million) to EBITDA, as such terms are defined in the 2019 Amended Credit Agreement, for the rolling four quarter period ending on such date. As of December 31, 2023 December 31, 2024, the Company was in compliance with its financial covenants.

Other

The Company has available overdraft and line of credit facilities in several countries in which it operates. These credit facilities are with various domestic and international banks and are at quoted market rates. As of December 31, 2023 December 31, 2024 and 2022, 2023, the Company had $2.4 2.0 million and $3.1 2.4 million, respectively, of availability under these facilities and there were no outstanding commitments.

8. Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease assets and operating lease obligations on the Company’s consolidated balance sheets.

Right of use (“ROU”) assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make lease payments under the lease. Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. At commencement date, the ROU asset also includes adjustments for lease prepayments, lease incentives received and the lessee's initial direct costs, if applicable. As most of the Company’s leases do not provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at commencement date in determining the present value of future payments. The incremental borrowing rates are determined using rates specific to the term of the lease, economic environments where lease activity is concentrated, value of lease portfolio, and assuming full collateralization of the loans. Subsequent to the commencement date, the operating ROU asset is equal to the remeasured lease liability adjusted for cumulative prepaid or accrued rent if the lease payments are uneven throughout the lease term, unamortized lease incentives, unamortized initial direct costs and any impairment of the ROU assets. The lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease cost for minimum lease payments is recognized on a straight-line basis over the lease term.

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The Company does not recognize a lease liability or ROU asset for short-term leases (leases with a term of twelve months or less). For contracts with lease and non-lease components, the Company does not allocate the contract consideration, and accounts for the lease and non-lease components as a single lease component.

The Company’s operating leases consist of office facilities, office equipment and cars. The Company’s leases have remaining terms of less than one year to 15 years, some of which include one or more options to renew and some of which include options to terminate the leases within the next three years. The Company does did not have any finance leases as of December 31, 2023 December 31, 2024.

Operating lease cost was $13.1 14.0 million, $13.4 13.1 million and $13.8 13.4 million for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively. Operating lease cost includes short-term leases and variable lease costs, which are immaterial. Rent cost related to operating leases for office facilities was $11.3 11.7 million, $11.7 11.3 million and $12.2 11.7 million for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively.

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Supplemental balance sheet Other information related to lease liabilities was operating leases for the years ended December 31, 2024, 2023 and 2022 is as follows:

(in thousands, except lease term and discount rate)	December 31, 2023	December 31, 2022
Operating leases:		
Operating lease ROU assets	$ 30,759	$ 33,601
Current portion of operating lease liabilities	$ 8,825	$ 10,396
Operating lease liabilities, net of current portion	22,625	24,065
Total operating lease liabilities	$ 31,450	$ 34,461
Weighted average remaining lease term	6.0	3.4
Weighted average discount rate	3.9 %	3.8 %

	December 31, 2024	December 31, 2023
Weighted average remaining lease term of operating leases	5.7 years	6 years
Weighted average discount rate of operating leases	4.6 %	3.9 %

Supplemental cash flow information related to leases was as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021			
(in thousands)	2024	2023	2022			
Cash paid for amounts included in the measurement of lease liabilities:						
Operating cash flows from operating leases	$ (11,606)	$ (12,949)	$ (12,058)	$ (10,641)	$ (11,606)	$ (12,949)
ROU assets obtained in exchange for new operating lease obligations	$ 17,023	$ 12,455	$ 6,577	$ 9,150	$ 17,023	$ 12,455

Maturities of operating lease liabilities as of December 31, 2023 December 31, 2024, were as follows (in thousands):

Year ending December 31,		
2024	$ 10,169	
2025	7,197	$ 9,550
2026	5,789	8,614
2027	3,893	6,277
2028	2,073	3,438
2029	2,669	
Thereafter	7,988	7,492
Total lease payments	37,109	
Less: imputed interest	5,659	
Total future lease payments	38,040	
Less: present value adjustment	6,023	
Total operating lease liabilities	$ 31,450	$ 32,017

9. Fair value measurements

The accounting guidance for fair value, among other things, defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The framework for measuring fair value consists of a three-level valuation hierarchy that prioritizes the inputs to valuation techniques used to measure fair value based upon whether such inputs are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect market assumptions made by the reporting entity. The three-level hierarchy for the inputs to valuation techniques is briefly summarized as follows:

Level 1— Quoted prices in active markets for identical assets and liabilities at the measurement date;

Level 2— Observable inputs, other than the quoted prices in active markets, that are observable either directly or indirectly; and

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Level 3— Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

An asset's or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

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The carrying value of cash and cash equivalents, accounts receivable and accounts payable approximate fair value due to their short maturities. Interest on the Company's line of credit is at a variable rate, and as such the debt obligation outstanding approximates fair value.

The carrying value of the Company's Convertible 2027 Notes are at face value less unamortized debt issuance costs. The estimated fair values value of the Convertible 2027 Notes, which the Company has classified as Level 2 financial instruments, were was determined based on quoted bid prices of the Convertible 2027 Notes on the last trading day of each reporting period. As of December 31, 2023 December 31, 2024, the estimated fair value of the 2027 Notes and 2024 Notes was $297.6 358.1 million, and $147.6 million, respectively, and is presented for required disclosure purposes only. For further information on the Convertible Notes see Note 7.

10. Stockholders' equity

Preferred stock

As of December 31, 2023 December 31, 2024, the Company had authorized 45,000,000 shares of preferred stock, par value $0.0001, of which no shares were issued or outstanding. The Board of Directors has the authority to issue the preferred stock in one or more series and to fix rights, preferences, privileges, and restrictions, including dividends and the number of shares constituting any series or the designation of such series, without any further vote or action by the stockholders.

Common stock

As of December 31, 2023 December 31, 2024, the Company had authorized 513,796,572 shares of Class A common stock, par value $0.0001, and 41,203,428 shares of Class B common stock, par value $0.0001. The rights of the holders of Class A common stock and Class B common stock are identical, except with respect to voting and conversion rights. Each share of Class A common stock is entitled to one vote per share. Each share of Class B common stock is entitled to ten votes per share and is convertible into one share of Class A common stock.

The holders of Class A and Class B common stock are entitled to dividends at the sole discretion of the Board of Directors. No common stock dividends were declared or paid in 2024, 2023, 2022, or 2021. 2022.

Stock repurchase program

In May 2023, the Company's Board of Directors approved an increase under our existing The Company has a stock repurchase program from $50.0 million for up to $75.0 million of the Company's outstanding Class A Common Stock. As permitted by securities laws and other legal requirements and subject to market conditions and other factors, purchases under the program may be made from time to time in the open market at prevailing prices, or through privately negotiated transactions. The Company is not obligated to repurchase any dollar amount or number of shares, and the stock repurchase program may be suspended or terminated at any time. All shares repurchased under the stock repurchase program are retired. The Company intends to use the share repurchase plan to opportunistically return capital to shareholders while still focusing on its primary goal of investing in the business to drive growth.

The Company did not repurchase any shares in 2024. During the year ended December 31, 2023, under the Company's stock repurchase program, the Company repurchased 91,273 shares at an average price of $46.63 per share for a total cost of $4.3 million. As of December 31, 2022, $49.1 million of shares of Class A Common Stock remained available for repurchase under the program.

11. Stock-based compensation

2001 stock-based compensation plans

Nonqualified stock option plan

In 2001, the Company established the Nonqualified Stock Option Plan ("NSO Plan") under which 994,884 623,539 stock options with an exercise price of $.000025 remain outstanding as of December 31, 2023 December 31, 2024. The NSO Plan was terminated in 2003. Stock options under the NSO plan were immediately vested and have a contractual term of 35 years from the date of grant. The outstanding awards will continue to be governed by their existing terms under the NSO Plan. The NSO Plan is accounted for as an equity plan.

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The following table summarizes the stock option activity under the NSO Plan:

	Number of options	Weighted average exercise price per share	Weighted average remaining contractual	Aggregate intrinsic value (in millions)

				term (years)		
Outstanding as of December 31, 2022	1,158,260	$	0.000025	14.0		
Exercised	(163,376)	$	0.000025			
Outstanding and exercisable as of December 31, 2023	994,884	$	0.000025	13.0	$	83.7

	Number of options		Weighted average exercise price per share	Weighted average remaining contractual term (years)		Aggregate intrinsic value (in millions)
Outstanding as of December 31, 2023	994,884	$	0.000025	13.0		
Exercised	(371,345)	$	0.000025			
Outstanding and exercisable as of December 31, 2024	623,539	$	0.000025	12.0	$	68.0

The total intrinsic value of the NSO Plan stock options exercised during the years ended December 31, 2023 December 31, 2024, 2023 and 2022, and 2021, was $33.8 million, $11.5 million $11.0 million and $78.7 11.0 million, respectively.

2012 stock-based compensation plans

During 2012, the Company established the 2012 Incentive and Nonqualified Stock Option Plan (“2012 Plan”) which permits the issuance of 5,200,000 shares of Class A common stock for the grant of nonqualified stock options (“NQSO”) and incentive stock options (“ISO”) for management, other employees, and board members of the Company. The options are issued at a price equal to or greater than fair market value at date of grant. All options have a contractual term of 10 years from date of grant.

The 2012 Plan is accounted for as an equity plan. For those options expected to vest, compensation expense is recognized on a straight-line basis over a four-year period, the total requisite service period of the awards.

The following table summarizes the stock option activity under the 2012 Plan for the periods indicated as follows:

	Number of options		Weighted average exercise price per share	Weighted average remaining contractual term (years)		Aggregate intrinsic value (in millions)
Outstanding as of December 31, 2022	374,574	$	4.34	3.4		
Exercised	(103,215)	$	4.03			
Outstanding and exercisable as of December 31, 2023	271,359	$	4.46	2.5	$	21.6

	Number of options		Weighted average exercise price per share	Weighted average remaining contractual term (years)		Aggregate intrinsic value (in millions)
Outstanding as of December 31, 2023	271,359	$	4.46	2.5		
Exercised	(111,992)	$	4.24			
Outstanding and exercisable as of December 31, 2024	159,367	$	4.62	1.9	$	16.7

The total intrinsic value of the 2012 Plan stock options exercised during the years ended December 31, 2023 December 31, 2024, 2023 and 2022, and 2021, was $10.1 million, $6.6 million $8.5 million and $17.5 8.5 million, respectively.

2017 stock-based compensation plan

In 2017, the Company’s board of directors adopted the 2017 Equity Incentive Plan (“2017 Plan”), which was approved by the Company’s stockholders. The 2017 Plan provides for the grant of incentive stock options to the Company’s employees and any parent and subsidiary corporations’ employees, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance units, performance shares, other cash-based and stock-based awards to the Company's employees, directors and consultants and the Company's parent, subsidiary, and affiliate corporations' employees and consultants. The 2017 Plan has 16,999,318 19,460,908 authorized shares of the Company's Class A common stock reserved for issuance. As of December 31, 2023 December 31, 2024, the Company had 4,965,437 6,625,144 shares of its common stock available for future issuances under the 2017 Plan.

The following table summarizes the restricted stock units, or RSUs, awarded under the 2017 Plan for the period:

	Number of RSUs
Outstanding as of December 31, 2022 December 31, 2023	1,230,774 1,086,351
Granted	423,771 384,424
Vested	(538,997 530,732)
Forfeited	(29,197 33,191)
Outstanding as of December 31, 2023 December 31, 2024	1,086,351 906,852

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The weighted average grant date fair value of the RSUs granted in 2024 was $65.80 80.60 and the RSUs generally vest in four equal annual installments. The fair value of RSUs that vested during the year ended December 31, 2023 December 31, 2024, was $35.5 47.2 million. Total compensation cost related to nonvested awards not yet recognized as of December 31, 2023 December 31, 2024, was $91.4 98.9 million and is expected to be recognized over a weighted average period of 2.1 2.2 years.

The following table summarizes the stock option activity under the 2017 Plan for the period:

	Number of options	Weighted average exercise price per share	Weighted average remaining contractual term (years)	Aggregate intrinsic value (in millions)	Number of options	Weighted average exercise price per share	Weighted average remaining contractual term (years)	Aggregate intrinsic value (in millions)
Outstanding as of December 31, 2022	7,491,491	$ 50.39	8.5					
Outstanding as of December 31, 2023	7,602,078	$ 52.81	7.8					
Granted	1,017,785	$ 65.19			417,459	$ 79.19		
Exercised	(785,550)	$ 45.23			(1,325,265)	$ 49.91		
Forfeited	(121,648)	$ 56.85			(124,821)	$ 55.94		
Outstanding as of December 31, 2023	7,602,078	$ 52.81	7.8	$ 238.3				
Exercisable as of December 31, 2023	3,650,320	$ 49.99	6.9	$ 124.7				
Outstanding as of December 31, 2024	6,569,451	$ 55.01	7.1	$ 355.4				
Exercisable as of December 31, 2024	3,940,042	$ 51.61	6.5	$ 226.5				

The total intrinsic value of the 2017 Plan stock options exercised during the years ended December 31, 2023 December 31, 2024, 2023 and 2022, and 2021, was $58.6 million, $20.7 million $1.1 million and $0.7 1.1 million, respectively.

Fair value of equity awards

The Company measures the fair value of its stock options on the date of grant using the Black-Scholes option pricing model. This valuation model requires the Company to make certain estimates and assumptions, including assumptions related to the expected price volatility of the Company's stock, the period under which the options will be outstanding, the rate of return on risk-free investments, and the expected dividend yield for the Company's stock.

The fair values of the Company's stock options granted during the year ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, were estimated using the following assumptions:

	2023 grants	2022 grants	2021 grants	2024 grants	2023 grants	2022 grants
Weighted average grant date fair value per share	$65.19 - 67.65	$44.63 - 64.79	$61.93 - 80.06	$79.03 - 85.52	$65.19 - 67.65	$44.63 - 64.79
Expected volatility	35%	35%	35%	35%	35%	35%
Expected term (in years)	6.25	6.25	6.25	6.25	6.25	6.25
Risk-free interest rate	3.5% - 4.3%	1.7% - 4.2%	1.1% - 1.2%	4.2% - 4.3%	3.5% - 4.3%	1.7% - 4.2%
Expected dividend yield	0%	0%	0%	0%	0%	0%

These assumptions and estimates are as follows:

- *Fair Value of Common Stock*. The Company used the publicly quoted price as reported on the Nasdaq Global Select Market as the fair value of its common stock.
- *Expected Term*. The Company used the simplified method to determine the expected term.
- *Risk-Free Interest Rate*. The Company based the risk-free interest rate on U.S. Treasury zero-coupon yield curves with a remaining term equal to the expected term of the option.
- *Expected Volatility*. As the Company does not have an extensive trading history for its common stock, the expected volatility was derived using the historical volatility of the returns of comparable publicly traded companies combined with the brief trading history of the Company's common stock.

2021 Employee Stock Purchase Plan

The Company has an Employee Stock Purchase Plan ("ESPP") which allows eligible employees to purchase shares of common stock through payroll deductions. As of December 31, 2023 December 31, 2024, the Company had 2,832,220 2,706,534 shares of its common stock available for future issuances under the ESPP.

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The purchase price for each share of common stock purchased under the ESPP will be 85% of the lower of (a) the fair market value per share on the first day of the applicable offering period or (b) the fair market value per share on the applicable purchase date.

Each offering period will last a number of months determined by the plan administrator, up to a maximum of 27 months. The initial final offering period began on July 15, 2021 2024, and ended on January 14, 2022 2025, and new. The plan administrator has suspended all future offering periods are expected to begin on each January 15 and July 15 thereafter, unless modified by the plan administrator. periods.

The ESPP allows allowed participants to purchase the Company's common stock through payroll deductions, up to a maximum of 15% of their eligible compensation or $25,000, whichever is lower, and subject to limitations under Section 423 of the Internal Revenue Code. The plan administrator has limited participant contributions to $1,000 per month to prevent prejudicial advantages to higher compensated employees. Participants may withdraw from the ESPP and receive a refund of their accumulated payroll contributions at any time prior to a purchase date.

The Company issued 125,686, 182,883 shares and 184,897 shares of common stock under the ESPP during the years ended December 31, 2023 December 31, 2024, 2023 and 2022, respectively. There were no issuances of common stock under the ESPP during the year ended December 31, 2021. As of December 31, 2023 December 31, 2024 and 2022, 2023, $4.2 4.8 million and $4.0 4.2 million, respectively, has been withheld on behalf of employees for future purchases under the ESPP due to the timing of payroll deductions and was reported in current liabilities. The Company recognized $2.4 2.9 million, $2.6 2.4 million and $1.2 2.6 million of stock-based compensation expense related to the ESPP for the years ended December 31, 2023 December 31, 2024, 2022, 2023, and 2021, 2022, respectively.

Other

In connection with the acquisition of World Programming in December 2021, per the World Programming stock purchase agreement, $29.5 million of the Company's Class A Common Stock will be was issued to existing employees, subject to continuing employment and certain other contingencies. The accounting treatment for these shares in the context of the business combination was to recognize the expense as a post-combination expense, not as transaction consideration.

The estimated post combination expense to the Company as a result of the World Programming business combination was approximately $29.5 million which is recognized on an accelerated method over the employment period. As of December 31, 2023 December 31, 2024, the weighted average remaining service period was 1.0 year. Once the vesting conditions of the service period are met, the Company will issue shares for each award. was met. Stock-based compensation expense includes $8.0 3.1 million, $17.6 8.0 million and $0.7 17.6 million for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively.

In connection with the acquisition of Powersim Inc. in March 2022, per the Powersim stock purchase agreement, 68,792 shares of the Company's Class A Common Stock will be were issued to existing employees, subject to continuing employment and certain other contingencies. The shares will be were issued on the one- and two-year anniversaries of the closing. The accounting treatment for these shares in the context of the business combination was to recognize the expense as a post-combination expense, not as transaction consideration. The post combination expense was determined to have a fair value of approximately $4.3 million and was recognized on an accelerated method over the employment period. As of December 31, 2024, the service period was met, and all shares have been issued. Stock-based compensation expense includes $0.2 million, $1.4 million and $2.7 million for the years ended December 31, 2024, 2023 and 2022, respectively.

In connection with the acquisition of Concept Engineering in June 2022, per the Concept Engineering stock purchase agreement, 105,082 shares of the Company's Class A Common Stock were issued to existing employees, subject to continuing employment and certain other contingencies. The shares were issued in installments of 34,396 52,541 shares on the one- and two-year anniversaries of the closing, closing. The accounting treatment for these shares in the context of the business combination was to recognize the expense as a post-combination expense, not as transaction consideration. The post combination expense was determined to have a fair value of approximately $6.0 million and was recognized on an accelerated method over the employment period. As of December 31, 2024, the service period was met, and all shares have been issued. Stock-based compensation expense includes $0.6 million, $2.6 million and $2.7 million for the years ended December 31, 2024, 2023 and 2022, respectively.

In connection with the acquisition of Research in Flight ("RIFL") in April 2024, the Company agreed to issue an aggregate of 18,000 shares of the Company's Class A Common Stock to stockholders of RIFL, with 9,000 shares issuable on each of April 15, 2025, and April 2026, subject to potential reduction in certain circumstances. The accounting treatment for these shares in the context of the business combination was to recognize the expense as a post-combination expense, not as transaction consideration. The post combination expense was determined to have a fair value of approximately $4.3 1.5 million and which is recognized on an accelerated method over the employment two-year period. As of December 31, 2023 December 31, 2024, the weighted average remaining service recognition period was 0 is .2 1.3 years. Stock-based compensation expense includes $1.4 million and $2.7 0.8 million for the years year ended December 31, 2023 and 2022, respectively. December 31, 2024.

In connection with the acquisition of Concept Engineering in June 2022, per the Concept Engineering stock purchase agreement, 105,082 shares of the Company's Class A Common Stock will be issued to existing employees, subject to continuing employment and certain other contingencies. The shares will be issued in installments of 52,541 shares on the one- and two-year anniversaries of the closing, subject to potential reduction in certain circumstances. The accounting treatment for these shares in the context of the business combination was to recognize the expense as a post-combination expense, not as transaction consideration. The post combination expense was determined to have a fair value of approximately $6.0 million and is recognized on an accelerated method over the employment period. As of December 31, 2023, the weighted average remaining service period was 0.4 years. Stock-based compensation expense includes $2.6 million and $2.7 million for the years ended December 31, 2023 and 2022, respectively.

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Stock-based compensation expense

The stock-based compensation expense was recorded as follows (in thousands):

	Year ended December 31,	Year ended December 31,

	2023	2022	2021	2024	2023	2022
Cost of revenue-software	$ 10,095	$ 8,351	$ 5,619	$ 8,397	$ 10,095	$ 8,351
Research and development	33,842	36,250	16,561	25,630	33,842	36,250
Sales and marketing	28,376	30,370	15,044	19,459	28,376	30,370
General and administrative	13,268	9,816	7,325	14,194	13,268	9,816
Total stock-based compensation expense	$ 85,581	$ 84,787	$ 44,549	$ 67,680	$ 85,581	$ 84,787

12. Income taxes

The components of income (loss) before income taxes are as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
U.S.	$ (21,803)	$ (62,702)	$ (27,850)	$ (8,279)	$ (21,803)	$ (62,702)
Non-U.S.	34,422	34,489	27,562	40,909	34,422	34,489
	$ 12,619	$ (28,213)	$ (288)	$ 32,630	$ 12,619	$ (28,213)

The significant components of the income tax expense are as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Current						
U.S. Federal	$ —	$ —	$ —	$ —	$ —	$ —
Non-U.S.	22,746	18,759	9,781	19,168	22,746	18,759
U.S. State and Local	1,118	621	227	(6)	1,118	621
Total current	23,864	19,380	10,008	19,162	23,864	19,380
Deferred						
U.S. Federal	35	23	26	36	35	23
Non-U.S.	(2,384)	(4,206)	(1,550)	(773)	(2,384)	(4,206)
U.S. State and Local	30	19	22	30	30	19
Total deferred	(2,319)	(4,164)	(1,502)	(707)	(2,319)	(4,164)
Income tax expense	$ 21,545	$ 15,216	$ 8,506	$ 18,455	$ 21,545	$ 15,216

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The reconciliation of income taxes calculated at the U.S. Federal statutory income tax rate to income tax expense is as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
U.S. federal statutory rate	21 %	21 %	21 %	21 %	21 %	21 %
Income taxes at U.S. federal statutory rate	$ 2,650	$ (5,925)	$ (60)	$ 6,852	$ 2,650	$ (5,925)
Foreign income taxes at rates other than the federal statutory rate	1,733	2,249	2,950	2,626	1,733	2,249
U.S. state and local income taxes, net of U.S. federal tax benefit	(1,952)	(5,976)	(4,826)	(3,054)	(1,952)	(5,976)
U.S. effect of foreign operations	(9,931)	15,827	1,827	2,315	(9,931)	15,827

Change in valuation allowance	29,849	7,830	20,212	25,493	29,849	7,830
Foreign withholding taxes	7,444	6,738	(4,545)	8,501	7,444	6,738
U.S. foreign tax credit and deduction	(17,522)	(12,315)	(288)	(8,261)	(17,522)	(12,315)
Research and development tax credit	391	(326)	(784)	597	391	(326)
Stock-based compensation	1,361	8,649	(12,791)	(7,695)	1,361	8,649
Other	123	1,250	753	920	123	1,250
Uncertain tax positions	6,370	472	6,058	(693)	6,370	472
FDII deduction	(169)	(5,245)	—	(9,146)	(169)	(5,245)
Mark-to-market adjustment of contingent consideration	1,198	(1,502)	—	—	1,198	(1,502)
Repurchase of convertible senior notes	—	3,490	—	—	—	3,490
Income tax expense	$ 21,545	$ 15,216	$ 8,506	$ 18,455	$ 21,545	$ 15,216

The Tax Cuts and Jobs Act, or the Tax Act, subjects a U.S. shareholder to current tax on global intangible low-taxed income (“GILTI”) earned by certain foreign subsidiaries. The impact of GILTI resulted in no incremental tax expense for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021 2022 due to a full valuation allowance on U.S. net deferred tax assets. In addition, the Company has made an accounting policy election to treat taxes due under the GILTI provision as a current period expense.

Deferred income tax assets and liabilities result from differences in the basis of assets and liabilities for tax and financial statements purposes. The approximate tax effect of each type of temporary difference, and operating losses and tax credit carryforwards that give rise to a significant portion of the deferred tax assets and liabilities are as follows (in thousands):

	December 31,		December 31,	
	2023	2022	2024	2023
Deferred tax assets:				
Deferred revenue	$ 9,730	$ 18,571	$ 6,419	$ 9,730
Net operating loss carryforwards	60,702	64,091	57,933	60,702
Tax credit carryforwards	48,752	24,319	39,987	48,752
Stock-based compensation	12,011	8,312	13,491	12,011
Capitalized research and development	58,946	43,860	87,261	58,946
Lease obligation	7,517	8,810	6,330	7,517
Employee benefits	6,955	5,941	7,994	6,955
Merger costs	4,288	—		
Other	3,910	5,931	3,704	3,910
Total gross deferred tax assets	208,523	179,835	227,407	208,523
Less: valuation allowances	(179,766)	(149,441)	(204,954)	(179,766)
Net deferred tax assets (1)	28,757	30,394	22,453	28,757
Deferred tax liabilities:				
Prepaid royalties	3,602	—	1,609	3,602
Property and equipment and intangibles	16,610	24,155	13,174	16,610
Deferred tax on investment in subsidiary	1,950	1,500	3,220	1,950
Lease right of use asset	7,357	8,578	6,193	7,357
Other	2,153	3,209	2,801	2,153
Total deferred tax liabilities	31,672	37,442	26,997	31,672
Total net deferred tax liabilities	$ (2,915)	$ (7,048)	$ (4,544)	$ (2,915)

(1) Reflects gross amount before jurisdictional netting of deferred tax assets and liabilities.

Deferred tax assets and liabilities are determined separately for each tax jurisdiction on a separate or on a consolidated tax filing basis, as applicable, in which the Company conducts its operations or otherwise incurs taxable income or losses. A valuation allowance is

recorded when it is more likely than not that some portion or all of the gross deferred tax assets will not be realized. The realization of deferred tax assets depends on the ability to generate sufficient taxable income of the appropriate character within the carryback or carryforward periods provided for in the tax law for each applicable tax jurisdiction. The Company considers the following possible sources of taxable income when assessing the realization of deferred tax assets:

- taxable income in prior carryback years;
- future reversals of existing taxable temporary differences;
- future taxable income exclusive of reversing temporary differences and carryforwards; and
- prudent and feasible tax planning strategies that the Company would be willing to undertake to prevent a deferred tax asset from otherwise expiring.

The assessment regarding whether a valuation allowance is required or whether a change in judgment regarding the valuation allowance has occurred also considers all available positive and negative evidence, including but not limited to:

- nature, frequency, and severity of cumulative losses in recent years;
- duration of statutory carryforward and carryback periods;
- statutory limitations against utilization of tax attribute carryforwards against taxable income;
- historical experience with tax attributes expiring unused; and
- near- and medium-term financial outlook.

The weight given to the positive and negative evidence is commensurate with the extent to which the evidence may be objectively verified. Accordingly, it is generally difficult to conclude a valuation allowance is not required when there is significant objective and verifiable negative evidence, such as cumulative losses in recent years. The Company uses the actual results for the last two years and current year results as the primary measure of cumulative losses in recent years.

The evaluation of deferred tax assets requires judgment in assessing the likely future tax consequences of events recognized in the financial statements or tax returns and future profitability. The recognition of deferred tax assets represents the Company’s best estimate of those future events. Changes in the current estimates, due to unanticipated events or otherwise, could have a material effect on the Company’s results of operations and financial condition.

In certain tax jurisdictions, the Company’s analysis indicates that it has cumulative losses in recent years. This is considered significant negative evidence, which is objective and verifiable and, therefore, difficult to overcome. However, the cumulative loss position is not solely determinative and, accordingly, the Company considers all other available positive and negative evidence in its analysis. Based on its analysis, the Company has recorded a valuation allowance for the portion of deferred tax assets where based on the weight of available evidence it is unlikely to realize those deferred tax assets.

Based on the evidence available including a lack of sustainable earnings, the Company in its judgment previously recorded a valuation allowance against substantially all of its net deferred tax assets in the United States. If a change in judgment regarding this valuation allowance were to occur in the future, the Company will record a potentially material deferred tax benefit, which could result in a favorable impact on the effective tax rate in that period.

The Company continues to record deferred foreign taxes on gross book-tax basis differences to the extent of foreign distributable reserves and excess cash balances for its subsidiary in India. Determining the amount of unrecognized deferred tax liability related to any remaining undistributed foreign earnings is not practicable.

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The following table summarizes the changes to the valuation allowance balance (in thousands):

	Year ended December 31,		
	2023	2022	2021
Beginning balance	$ 149,441	$ 119,981	$ 96,831
Additions charged to expense	30,665	7,830	20,212
Deductions	(816)	—	—
Other	476	21,630	2,938
Ending balance	$ 179,766	$ 149,441	$ 119,981

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	Year ended December 31,		
	2024	2023	2022
Beginning balance	$ 179,766	$ 149,441	$ 119,981
Additions charged to expense	27,481	30,665	7,830
Deductions	(1,988)	(816)	—
Other	(305)	476	21,630
Ending balance	$ 204,954	$ 179,766	$ 149,441

The change in valuation allowance in Other for 2024 of $(

0.3) million is primarily related to currency translation. The change in valuation allowance in Other for 2023 of $0.5 million is primarily related to currency translation. The change in the valuation allowance in Other for 2022 of $21.6 million is primarily related to a $6.8 million increase from the adoption of ASU 2020-06 for convertible debt instruments, and a $13.1 million valuation allowance recorded on deferred tax assets established during purchase accounting from the RapidMiner acquisition. The change in valuation allowance in Other for 2021 of $2.9 million is primarily related to a valuation allowance recorded on deferred tax assets established during purchase accounting from the World Programming acquisition.

The following table summarizes the amount and expiration dates of operating loss and tax credit carryforwards as of December 31, 2023 December 31, 2024 (in thousands):

	Expiration dates	Amounts	Expiration dates	Amounts
U.S. general business credits and loss carryforwards	2024-Indefinite	$ 64,426	2025-Indefinite	$ 62,990
Foreign general business credits and loss carryforwards	2024-Indefinite	15,711	2025-Indefinite	13,029
U.S. foreign tax credits	2027 - 2032	29,317	2027 - 2033	21,901
Total operating loss and tax credit carryforwards		$ 109,454		$ 97,920

A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Unrecognized tax benefits—January 1	$ 28,977	$ 16,376	$ 8,310	$ 38,219	$ 28,977	$ 16,376
Additions for tax positions of current period	9,435	50	1,042	50	9,435	50
Additions for tax positions of prior periods	901	13,910	8,983	—	901	13,910
Reductions for tax positions of prior periods	(500)	(1,334)	(1,934)	(4,891)	(500)	(1,334)
Reductions due to statute of limitations	(594)	(25)	(25)	(427)	(594)	(25)

Unrecognized tax benefits—December 31	$ 38,219	$ 28,977	$ 16,376	$ 32,951	$ 38,219	$ 28,977

As of December 31, 2023 December 31, 2024, the Company had $15.0 11.6 million of gross unrecognized tax benefits that if recognized would affect the effective tax rate. The Company expects a reduction over the next 12 months in the gross unrecognized tax benefits of approximately $0.5 12.8 million which if recognized would not impact the effective tax rate during 2024. 2025.

The Company operates globally but considers its more significant tax jurisdictions to include the United States, India, Germany, Japan, and China. India has tax years open for examination from 2011 through 2023. 2024. All other significant jurisdictions have open tax years from 2016 2017 through 2023. 2024.

The Company records interest and penalties with respect to unrecognized tax benefits as a component of the provision for income taxes. For the years ended December 31, 2023 December 31, 2024, 2022, 2023, and 2021, 2022, accrued interest and penalties related to unrecognized tax benefits were approximately $1.2 0.6 million, $1.0 1.2 million, and $1.0 million, respectively, all of which if recognized would affect the effective tax rate.

13. Net loss income (loss) per share

The Company adopted ASU 2020-06 on January 1, 2022, using the modified retrospective method, applicable to its convertible senior notes outstanding as of adoption. The Company has not changed any previously disclosed amounts or provided additional disclosures for comparative periods. ASU 2020-06 requires the if-converted method to be applied for all convertible instruments when calculating diluted earnings per share. Under the if-converted method, shares related to convertible senior notes, to the extent dilutive, are assumed to be converted into common stock at the beginning of the period.

Basic net income (loss) income per share attributable to common stockholders is computed using the weighted average number of shares of common stock outstanding for the period, excluding dilutive securities, stock options, RSUs and ESPP shares. Diluted net income (loss) income per share attributable to common stockholders is based upon the weighted average number of shares of common stock outstanding for the period and potentially dilutive common shares. The treasury stock method is used to calculate the effect of dilutive securities, stock options, RSUs and ESPP shares and the if-converted method is used to calculate the effect of convertible instruments.The following table

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The following table sets forth the computation of the numerators and denominators used in the basic and diluted net loss income (loss) per share amounts (in thousands, except per share data):

	Year ended December 31,		
	2023	2022	2021
Numerator:			
Net loss	$ (8,926)	$ (43,429)	$ (8,794)
Denominator:			
Denominator for basic and diluted loss per share — weighted average shares	80,596	79,472	76,179
Net loss per share attributable to common stockholders, basic and diluted	$ (0.11)	$ (0.55)	$ (0.12)

	Year ended December 31,		
	2024	2023	2022
Numerator:			
Net income (loss)	$ 14,175	$ (8,926)	$ (43,429)
Interest expense related to convertible notes, net of tax (1)	—	—	—
Numerator for diluted income (loss) per share	$ 14,175	$ (8,926)	$ (43,429)
Denominator:			
Weighted average shares outstanding, basic	84,085	80,596	79,472
Effect of dilutive shares	4,473	—	—

Weighted average shares outstanding, diluted	88,558	80,596	79,472
Income (loss) per share, basic	$ 0.17	$ (0.11)	$ (0.55)
Income (loss) per share, diluted	$ 0.16	$ (0.11)	$ (0.55)

(1) Interest expense related to the convertible notes has been excluded from the numerator for diluted earnings per share because its effect would have been anti-dilutive.

Anti-dilutive shares excluded from the computation of diluted net loss income (loss) per share were as follows (in thousands):

	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Stock options and ESPP	3,293	961	3,425			
Convertible shares	3,753	4,958	1,555	3,209	3,753	4,958
Stock options and ESPP shares	—	3,293	961			
Total shares excluded from calculation	7,046	5,919	4,980	3,209	7,046	5,919

Since the Company was in a net loss position for the years ended December 31, 2023, and 2022, and 2021, basic net loss per share attributable to common stockholders is the same as diluted net loss per share for those periods as the inclusion of all potential common shares outstanding would have been anti-dilutive.

14. Retirement benefits

The Company sponsors a 401(k)-profit sharing plan (the “Plan”) for all eligible U.S. employees. This Plan allows eligible employees to contribute up to 80% of their compensation to the Plan. The Company makes discretionary matching contributions to the Plan provided the employee is employed on the last day of the year. Such discretionary contributions vest ratably over five years of service. The Company’s contributions to the Plan were $1.5 million, $1.6 million and $1.6 million for each of the years ended December 31, 2023 December 31, 2024, 2023 and 2022, and 2021. respectively.

The Company also participates in government-mandated retirement and/or termination indemnity plans, benefiting certain non-U.S. employees. Termination benefits are generally lump sum payments based upon an individual’s years of credited service and annual salary at retirement. These plans are generally unfunded, and employees receive payments at the time of retirement or termination under applicable labor laws or agreements. The amount of net benefit cost recorded in the consolidated statements of operations for these plans was $2.5 million, $2.6 million and $2.5 million in 2024, 2023 and $3.0 million in 2023, 2022, and 2021, respectively. The amount of benefits paid under these plans was $0.6 million, $0.4 million and $0.7 million in 2024, 2023 and $0.4 million in 2023, 2022, and 2021, respectively. The accumulated benefit obligation, unlike the projected benefit obligation, does not reflect expected benefit increases from future salary levels, and was $11.6 12.8 million and $10.1 11.6 million as of December 31, 2023 December 31, 2024 and 2022, 2023, respectively, under these plans. The projected benefit obligation, net of plan assets, was $16.8 17.3 million and $13.1 16.8 million as of December 31, 2023 December 31, 2024 and 2022, 2023, respectively.

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A summary of the components of the pension benefits obligation recorded in the consolidated balance sheets are as follows (in thousands):

	December 31,		December 31,	
	2023	2022	2024	2023
Other long-term assets	$ 135	$ 127	$ 19	$ 135
Accrued compensation and benefits	1,170	957	1,247	1,170
Other long-term liabilities	15,815	12,273	16,052	15,815
	$ 16,850	$ 13,103	$ 17,280	$ 16,850

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The estimated future benefit payments, which reflect expected future service that are expected to be paid for each of the next five years are as follows (in thousands):

Year ending		
December 31, 2024	$ 1,233	
December 31, 2025	$ 974	$ 1,319
December 31, 2026	$ 1,500	$ 1,572
December 31, 2027	$ 1,323	$ 1,372
December 31, 2028	$ 1,229	$ 1,260
December 31, 2029	$ 1,114	
Next five years	$ 6,949	$ 7,627

15. Accumulated other comprehensive loss

The components of accumulated other comprehensive loss are as follows (in thousands):

	Foreign currency translation	Retirement related benefit plans	Total	Foreign currency translation	Retirement related benefit plans	Total
Balance as of December 31, 2020	$ 854	$ (3,651)	$ (2,797)			
Other comprehensive income (loss) before reclassification	(7,254)	198	(7,056)			
Balance as of December 31, 2021	$ (6,400)	$ (2,550)	$ (8,950)			
Other comprehensive (loss) income before reclassification	(24,084)	87	(23,997)			
Amounts reclassified from accumulated other comprehensive loss	—	1,199	1,199	—	3,253	3,253
Tax effects	—	(296)	(296)	—	(308)	(308)
Other comprehensive income (loss)	(7,254)	1,101	(6,153)			
Balance as of December 31, 2021	(6,400)	(2,550)	(8,950)			
Other comprehensive income (loss) before reclassification	(24,084)	87	(23,997)			
Amounts reclassified from accumulated other comprehensive loss	—	3,253	3,253			
Tax effects	—	(308)	(308)			
Other comprehensive income (loss)	(24,084)	3,032	(21,052)			
Other comprehensive (loss) income	(24,084)	3,032	(21,052)			
Balance as of December 31, 2022	(30,484)	482	(30,002)	(30,484)	482	(30,002)
Other comprehensive income (loss) before reclassification	9,011	(16)	8,995	9,011	(16)	8,995
Amounts reclassified from accumulated other comprehensive loss	—	(1,479)	(1,479)	—	(1,479)	(1,479)
Tax effects	—	177	177	—	177	177
Other comprehensive income (loss)	9,011	(1,318)	7,693	9,011	(1,318)	7,693
Balance as of December 31, 2023	$ (21,473)	$ (836)	$ (22,309)	(21,473)	(836)	(22,309)
Other comprehensive loss before reclassification	(15,490)	(8)	(15,498)			
Amounts reclassified from accumulated other comprehensive loss	—	777	777			
Tax effects	—	(251)	(251)			
Other comprehensive (loss) income	(15,490)	518	(14,972)			
Balance as of December 31, 2024	$ (36,963)	$ (318)	$ (37,281)			

16. Commitments and contingencies

World Programming

The Company acquired World Programming Limited and a related company (collectively, “World Programming”) in December 2021.

In 2018, SAS Institute, Inc. (“SAS”) filed litigation in the United States District Court for the Eastern District of Texas (the “Texas Court”) asserting that World Programming infringed SAS copyrights and patents. SAS voluntarily dismissed with prejudice its patent claims, and the Texas Court entered judgment in favor of World Programming on the copyright claims. SAS appealed the Texas Court judgment to the United States Court of Appeals for the Federal Circuit (the “Court of Appeals”). Oral arguments were held before the Court of Appeal on January 13, 2022. On April 6, 2023, the Court of Appeals issued its decision in favor of World Programming by affirming the Texas Court’s dismissal of SAS’s copyright claims. On September 3, 2023, the Company was notified that SAS elected not to file its petition for a writ of certiorari within the period in which SAS was eligible to file such petition. With such period having expired, the judgment of the Texas Court in favor of World Programming is now final and closed.

Legal proceedings

Stockholders of Altair have filed, and may in the future file, lawsuits against Altair and/or the directors and officers of Altair in connection with the Merger. These lawsuits could prevent or delay the completion of the Merger and result in significant costs to Altair, including any costs associated with the indemnification of directors and officers.

From time to time, the Company may be subject to legal proceedings and claims in the ordinary course of business. business, unrelated to the Merger. The Company has received, and may in the future continue to receive, claims from third parties asserting, among other things, infringement of their intellectual property rights. Future litigation may be necessary to defend the Company, its partners and its customers by determining the scope, enforceability and validity of third-party proprietary rights, or to establish and enforce the Company’s proprietary rights.

Effects of proceedings

The results of any current or future litigation cannot be predicted with certainty and regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

Commitments

The Company has entered into various renewable, nonexclusive license agreements under which the Company has been granted access to the licensor’s technology and the right to sell or use the technology in the Company’s products. Royalties are payable to developers of the software at various rates and amounts, which generally are based upon unit sales or revenue. Royalty fees were $12.2 12.8 million, $11.7 12.2 million, and $10.9 11.7 million for the years ended December 31, 2023 December 31, 2024, 2022 2023 and 2021, 2022, respectively, and are reported in Cost of revenue—software.

Additionally, the Company has current contractual purchase obligations for services supporting business operations, including non-cancelable agreements. The Company also has payment obligations related to recent acquisitions. The future purchase obligations for these agreements are as follows (in thousands):

Year ending December 31,		
2024	$ 17,030	
2025	15,389	$ 22,085
2026	7,126	14,991
2027	484	2,708
2028	61	901

2029	364	
Thereafter	—	—
Total	$ 40,090	$ 41,049

Contingencies

The Company had contingent payment obligations for deferred professional fees of up to $135.2 million as of December 31, 2024, which may become payable in 2025, subject to certain terms which would cause such contingent amounts to become payable.

The Company had contingent payment obligations for the purchase of a software license of $7.1 million as of December 31, 2024, which may become payable in 2025, subject to certain terms which would cause such contingent amounts to become payable.

17. Segment information

The Company defines its operating segments as components of its business where separate financial information is available and used by the chief operating decision maker (“CODM”) in deciding how to allocate resources to its segments and in assessing performance. The Company’s CODM is its Chief Executive Officer. Officer.

The Company has identified two reportable segments for financial reporting purposes: Software and Client Engineering Services. The primary measure of segment operating performance is Adjusted EBITDA, which is defined as net income (loss) adjusted for income tax expense (benefit), interest expense, interest income and other, depreciation and amortization, stock-based compensation expense, restructuring charges, asset impairment charges and other special items as determined by management. Adjusted EBITDA includes an allocation of corporate headquarters costs.

The Software reportable segment derives revenue from the sale and lease of software licenses and cloud solutions in the areas of simulation, high-performance computing, and artificial intelligence to design and optimize high-performance, efficient, innovative and sustainable products and processes for improved business performance. The software services and software-related services component of

this segment includes consulting, implementation services, training, and software-related services focused on product design and development expertise and analysis from the component level up to complete product engineering at any stage of the lifecycle. To a much lesser extent, the Software segment includes revenue from the sale of hardware products.

The Client Engineering Services reportable segment provides support to the Company’s customers with long-term ongoing expertise. The Company hires simulation specialists, industrial designers, design engineers, materials experts, development engineers, manufacturing engineers, data scientists, and information technology specialists for placement at customer sites for specific customer-directed assignments.

The “Other” "All Other” represents innovative services and products, including Toggled, the Company’s LED lighting business. Toggled is focused on developing and selling next-generation solid state lighting technology along with communication and control protocols based, in part, on intellectual property for the direct replacement of fluorescent tubes with LED lighting. Other businesses combined within Other "All other" include potential services and product concepts that are still in their development stages.

Inter-segment sales are not significant for any period presented. The CODM does not review asset information by segment when assessing performance, therefore no asset information is provided for reportable segments. The accounting policies of the segments are the same as those described in Note 2—Summary of significant accounting policies.

The following tables are in thousands:

Year ended December 31, 2023	Software	CES	Other	Total				
Year ended December 31, 2024	Software	CES	All other	Total				
Revenue	$ 578,006	$ 29,497	$ 5,198	$ 612,701	$ 637,267	$ 25,027	$ 3,494	$ 665,788
Less:								
Cost of revenue	90,674	21,315	2,640	114,629				
Research and development	187,826	—	1,069	188,895				
Sales and marketing	158,670	1,006	1,135	160,811				
General and administrative	54,681	1,722	584	56,987				
Other segment items	(5,338)	—	(108)	(5,446)				
Adjusted EBITDA	$ 129,164	$ 2,288	$ (2,314)	$ 129,138	$ 150,754	$ 984	$ (1,826)	$ 149,912

Year ended December 31, 2022	Software	CES	Other	Total				
Year ended December 31, 2023	Software	CES	All other	Total				
Revenue	$ 537,169	$ 28,883	$ 6,169	$ 572,221	$ 578,006	$ 29,497	$ 5,198	$ 612,701
Less:								
Cost of revenue	82,625	24,450	4,329	111,404				
Research and development	172,954	—	1,247	174,201				
Sales and marketing	143,406	761	1,034	145,201				
General and administrative	53,966	1,998	837	56,801				
Other segment items	(4,109)	—	65	(4,044)				
Adjusted EBITDA	$ 107,638	$ 2,576	$ (1,614)	$ 108,600	$ 129,164	$ 2,288	$ (2,314)	$ 129,138

Year ended December 31, 2021	Software	CES	Other	Total				
Year ended December 31, 2022	Software	CES	All other	Total				
Revenue	$ 485,569	$ 39,282	$ 7,328	$ 532,179	$ 537,169	$ 28,883	$ 6,169	$ 572,221
Less:								
Cost of revenue	85,589	23,577	4,988	114,154				
Research and development	161,106	—	860	161,966				
Sales and marketing	129,740	592	746	131,078				
General and administrative	58,374	2,139	1,111	61,624				
Other segment items	(5,278)	(1)	78	(5,201)				
Adjusted EBITDA	$ 82,845	$ 4,723	$ (2,315)	$ 85,253	$ 107,638	$ 2,576	$ (1,614)	$ 108,600

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	Year ended December 31,			Year ended December 31,		
	2023	2022	2021	2024	2023	2022
Reconciliation of Adjusted EBITDA to GAAP income (loss) before income taxes:						
Adjusted EBITDA	$ 129,138	$ 108,600	$ 85,253	$ 149,912	$ 129,138	$ 108,600
Stock-based compensation expense	(85,581)	(84,787)	(44,549)	(67,680)	(85,581)	(84,787)
Interest expense	(6,116)	(4,377)	(12,065)	(5,836)	(6,116)	(4,377)
Depreciation and amortization	(39,124)	(35,504)	(25,644)	(42,164)	(39,124)	(35,504)

Restructuring expense	—	—	(5,053)			
Special adjustments, interest income and other (1)	14,302	(12,145)	1,770	(1,602)	14,302	(12,145)
Income (loss) before income taxes	$ 12,619	$ (28,213)	$ (288)	$ 32,630	$ 12,619	$ (28,213)

(1) The year ended December 31, 2024, includes $22.3 million of expenses related to the pending merger with Siemens Industry, $1.9 million currency losses on acquisition-related intercompany loans, $0.5 million losses from the mark-to-market adjustment of contingent consideration associated with acquisitions and $23.0 million of interest income. The year ended December 31, 2023, includes $3.2 million currency gains on acquisition-related intercompany loans, $5.7 million losses from the mark-to-market adjustment of contingent consideration associated with the World Programming acquisition and $16.9 million of interest income. The year ended December 31, 2022, includes $16.6 million expense on repurchase of convertible senior notes, $6.8 million currency losses on acquisition-related intercompany loans, $7.2 million gains from the mark-to-market adjustment of contingent consideration associated with the World Programming acquisition and $4.1 million of interest income. The year ended December 31, 2021, includes $1.2 million currency gains on acquisition-related intercompany loans and $0.5 million of interest income.

Revenue is attributed to geographic areas based on the country of origin. The following table provides sales to external customers and long-lived assets for each of the geographic areas in which the Company operates (in thousands):

	Revenue			Long-lived assets (1)		Revenue			Long-lived assets (1)	
	Year ended December 31,			December 31,		Year ended December 31,			December 31,	
	2023	2022	2021	2023	2022	2024	2023	2022	2024	2023
United States	$ 301,857	$ 274,635	$ 259,344	$ 50,448	$ 56,853	$ 323,905	$ 301,857	$ 274,635	$ 52,565	$ 55,230
Other countries	17,792	13,425	12,249	3,538	5,841	18,987	17,792	13,425	15,385	6,193
Total Americas	319,649	288,060	271,593	53,986	62,694	342,892	319,649	288,060	67,950	61,423
Germany	46,593	51,495	52,227	19,821	25,332	46,927	46,593	51,495	12,686	19,840
France	23,122	19,442	19,694	938	740	24,283	23,122	19,442	1,109	1,200
Other countries	66,903	69,769	52,264	32,264	39,405	76,459	66,903	69,769	24,485	34,561
Total Europe, Middle East and Africa	136,618	140,706	124,185	53,023	65,477	147,669	136,618	140,706	38,280	55,601
Japan	39,508	40,335	42,322	682	944	42,451	39,508	40,335	1,052	685
Other countries	116,926	103,120	94,079	5,184	5,585	132,776	116,926	103,120	6,663	5,644
Total Asia Pacific	156,434	143,455	136,401	5,866	6,529	175,227	156,434	143,455	7,715	6,329
Total	$ 612,701	$ 572,221	$ 532,179	$ 112,875	$ 134,700	$ 665,788	$ 612,701	$ 572,221	$ 113,945	$ 123,353

(1) Includes property Property and equipment, net and definite-lived Other intangible assets, net.

Concentrations of credit risk

The Company’s financial instruments that are potentially subject to concentrations of credit risk consist primarily of cash and trade receivables. The risk with respect to trade receivables is partially mitigated by the diversity, both by geography and by industry, of the Company’s customer base. The Company’s accounts receivable is derived from sales to a large number of direct customers and resellers around the world. No individual customer accounted for 10% or more of revenue in the years ended December 31, 2023 December 31, 2024, 2022 2023 or 2021. 2022.

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Exhibit No.	Description	Incorporated by Reference: Form	File No.	Exhibit	Filing Date	Filed Herewith	Description	Incorporated by Reference: Form	File No.	Exhibit	Filing Date	Filed Herewith

2.1	Agreement and Plan of Merger, dated as of October 30, 2024, among Altair Engineering Inc., Siemens Industry Software Inc. and Astra Merger Sub Inc.	8-K	001-38263	2.1	10/30/2024					
3.1	Certificate of Incorporation, as amended and as currently in effect	S-1/A	333-220710	3.1	10/6/2017	Certificate of Incorporation, as amended and as currently in effect	S-1/A	333-220710	3.1	10/6/2017
3.2	Bylaws, as currently in effect	S-1/A	333-220710	3.2	10/6/2017	Bylaws, as currently in effect	S-1/A	333-220710	3.2	10/6/2017
4.1	Description of Capital Stock	10-K	001-38263	4.1	2/24/2023	Description of Capital Stock	10-K	001-38263	4.1	2/24/2023
4.2	Indenture, dated as of June 10, 2019, b y and between Altair Engineering Inc. and U.S. Bank National Association	8-K	001-38263	4.1	6/10/2019	Indenture, dated as of June 10, 2019, b y and between Altair Engineering Inc. and U.S. Bank National Association	8-K	001-38263	4.1	6/10/2019
4.3	First Supplemental Indenture, dated as of June 10, 2019, by and between Altair Engineering Inc. and U.S. Bank National Association	8-K	001-38263	4.2	6/10/2019	First Supplemental Indenture, dated as of June 10, 2019, by and between Altair Engineering Inc. and U.S. Bank National Association	8-K	001-38263	4.2	6/10/2019
4.4	Form of 0.250% Convertible Senior Note Due June 1, 2024 (included as Exhibit A to the First Supplemental Indenture, dated as of June 10, 2019, by and between Altair Engineering Inc. and U.S. Bank National Association).	8-K	001-38263	4.3	6/10/2019	Form of 0.250% Convertible Senior Note Due June 1, 2024 (included as Exhibit A to the First Supplemental Indenture, dated as of June 10, 2019, by and between Altair Engineering Inc. and U.S. Bank National Association).	8-K	001-38263	4.3	6/10/2019
4.5	Indenture, dated as of June 14, 2022, by and between Altair Engineering Inc. and U.S. Bank Trust Company, National Association as trustee	8-K	001-38263	4-1	6/15/2022	Indenture, dated as of June 14, 2022, by and between Altair Engineering Inc. and U.S. Bank Trust Company, National Association as trustee	8-K	001-38263	4-1	6/15/2022
4.6	Form of 1.750% Convertible Senior Notes due 2027 (included in Exhibit 4.1 to the Indenture, dates as of June 14, 2022, by and between Altair Engineering Inc., and U.S. Bank Trust Company National Association as trustee)	8-K	001-38263	4.2	6/15/2022	Form of 1.750% Convertible Senior Notes due 2027 (included in Exhibit 4.1 to the Indenture, dates as of June 14, 2022, by and between Altair Engineering Inc., and U.S. Bank Trust Company National Association as trustee)	8-K	001-38263	4.2	6/15/2022

10.1	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers	S-1	333-220710	10.1	9/29/2017	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers	S-1	333-220710	10.1	9/29/2017
10.2+	2001 Incentive and Non-Qualified Stock Option Plan	S-1	333-220710	10.2	9/29/2017	2001 Incentive and Non-Qualified Stock Option Plan	S-1	333-220710	10.2	9/29/2017
10.3+	Form of 2001 Incentive and Non-Qualified Stock Option Plan Incentive Stock Option Agreement	S-1	333-220710	10.3	9/29/2017	Form of 2001 Incentive and Non-Qualified Stock Option Plan Incentive Stock Option Agreement	S-1	333-220710	10.3	9/29/2017
10.4+	Form of 2001 Incentive and Non-Qualified Stock Option Plan Stock Restriction and Repurchase Agreement	S-1	333-220710	10.4	9/29/2017	Form of 2001 Incentive and Non-Qualified Stock Option Plan Stock Restriction and Repurchase Agreement	S-1	333-220710	10.4	9/29/2017
10.5+	2001 Non-Qualified Stock Option Plan	S-1	333-220710	10.5	9/29/2017	2001 Non-Qualified Stock Option Plan	S-1	333-220710	10.5	9/29/2017
10.6+	Form of 2001 Non-Qualified Stock Option Plan Non-Qualified Stock Option Agreement	S-1	333-220710	10.6	9/29/2017	Form of 2001 Non-Qualified Stock Option Plan Non-Qualified Stock Option Agreement	S-1	333-220710	10.6	9/29/2017
10.7+	Form of 2001 Non-Qualified Stock Option Plan Stock Restriction Agreement	S-1	333-220710	10.7	9/29/2017	Form of 2001 Non-Qualified Stock Option Plan Stock Restriction Agreement	S-1	333-220710	10.7	9/29/2017

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10.8+	2012 Incentive and Non-Qualified Stock Option Plan	S-1	333-220710	10.8	9/29/2017
10.9+	Form of 2012 Incentive and Non-Qualified Stock Option Plan Option Agreement	S-1	333-220710	10.9	9/29/2017
10.10+	Form of 2012 Incentive and Non-Qualified Stock Option Plan Stock Restriction and Repurchase Agreement	S-1	333-220710	10.10	9/29/2017
10.11+	Form of 2012 Incentive and Non-Qualified Stock Option Plan Stock Restriction and Repurchase Agreement (Directors)	S-1	333-220710	10.11	9/29/2017
10.12+	2017 Equity Incentive Plan and forms of equity agreements thereunder	S-1/A	333-220710	10.12	10/6/2017

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10.13	2017 Third Amended and Restated Credit Agreement, dated October 18, 2017, by and among the Registrant, the foreign subsidiary borrowers, the Lenders named therein and JP Morgan Chase Bank, N.A. as administrative agent	S-1/A	333-220710	10.16	10/19/2017	2017 Third Amended and Restated Credit Agreement, dated October 18, 2017, by and among the Registrant, the foreign subsidiary borrowers, the Lenders named therein and JP Morgan Chase Bank, N.A. as administrative agent	S-1/A	333-220710	10.16	10/19/2017
10.14	First Amendment to the Registrant's 2017 Third Amended and Restated Credit Agreement, dated October 31, 2018, by and among the Registrant, the foreign subsidiary borrowers, the Lenders named therein and JP Morgan Chase Bank, N.A. as administrative agent	8-K	001-38263	10.1	11/5/2018	First Amendment to the Registrant's 2017 Third Amended and Restated Credit Agreement, dated October 31, 2018, by and among the Registrant, the foreign subsidiary borrowers, the Lenders named therein and JP Morgan Chase Bank, N.A. as administrative agent	8-K	001-38263	10.1	11/5/2018
10.15	Second Amendment to the Registrant's Third Amended and Restated Credit Agreement, dated as of June 5, 2019, by and among the Company, as borrower, the lenders party thereto, and JPMorgan Chase Bank, N.A., as Administrative Agent.	8-K	001-38263	10.1	6/6/2019	Second Amendment to the Registrant's Third Amended and Restated Credit Agreement, dated as of June 5, 2019, by and among the Company, as borrower, the lenders party thereto, and JPMorgan Chase Bank, N.A., as Administrative Agent.	8-K	001-38263	10.1	6/6/2019
10.16+	Form of 2020 Stock Option Award Agreement	8-K	001-38263	10.1	6/8/2020	Form of 2020 Stock Option Award Agreement	8-K	001-38263	10.1	6/8/2020
10.17+	Altair Engineering Inc. 2021 Employee Stock Purchase Plan	DEF 14A	001-38263	Appendix B	4/9/2021	Altair Engineering Inc. 2021 Employee Stock Purchase Plan	DEF 14A	001-38263	Appendix B	4/9/2021
10.18+	Employment Letter dated December 6, 2020, by and between Altair Engineering Inc. and Matthew Brown	10-Q	001-38263	10.2	5/6/2021	Employment Letter dated December 6, 2020, by and between Altair Engineering Inc. and Matthew Brown	10-Q	001-38263	10.2	5/6/2021

10.19+	[Executive Severance Agreement dated January 26, 2021, by and between Altair Engineering Inc. and Matthew Brown]	10-Q	001-38263	10.3	5/6/2021	[Executive Severance Agreement dated January 26, 2021, by and between Altair Engineering Inc. and Matthew Brown]	10-Q	001-38263	10.3	5/6/2021
10.20+	[Amended and Restated Executive Severance Agreement dated March 8, 2021, by and between Altair Engineering Inc. and James Scapa]	10-Q	001-38263	10.5	5/6/2021	[Amended and Restated Executive Severance Agreement dated March 8, 2021, by and between Altair Engineering Inc. and James Scapa]	10-Q	001-38263	10.5	5/6/2021
10.21+	[Amended and Restated Executive Severance Agreement dated February 3, 2021, by and between Altair Engineering Inc. and Gilma Saravia]	10-Q	001-38263	10.6	5/6/2021	[Amended and Restated Executive Severance Agreement dated February 3, 2021, by and between Altair Engineering Inc. and Gilma Saravia]	10-Q	001-38263	10.6	5/6/2021
10.22+	[Amended and Restated Executive Severance Agreement dated February 22, 2021, by and between Altair Engineering Inc. and Amy Messano]	10-Q	001-38263	10.7	5/6/2021	[Amended and Restated Executive Severance Agreement dated February 22, 2021, by and between Altair Engineering Inc. and Amy Messano]	10-Q	001-38263	10.7	5/6/2021
10.23+	[Amended and Restated Executive Severance Agreement dated February 15, 2021, by and between Altair Engineering Inc. and Uwe Schramm]	10-Q	001-38263	10.8	5/6/2021	[Executive Severance Agreement, dated March 5, 2021, by and between Altair Engineering Inc., and Mahalingam Srikanth]	10-K	001-38263	10.26	2/24/2023
10.24+	[Amended and Restated Executive Severance Agreement dated January 31, 2021, by and between Altair Engineering Inc. and Brett Chouinard]	10-Q	001-38263	10.9	5/6/2021					
10.24	[Securities Purchase Agreement, dated September 27, 2021, by and between the Company and Matrix Capital Management Company, LP]	8-K	001-38263	10.1	9/27/2021					
10.25	[Registration Rights Agreement dated September 27, 2021, by and between the]	8-K	001-38263	10.2	9/27/2021					

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10.25+	Executive Severance Agreement, dated March 5, 2021, by and between Altair Engineering Inc., and Mahalingam Srikanth	10-K	001-38263	10.26	2/24/2023					
	Company and Matrix Capital Management Company, LP									
10.26	Securities Purchase Agreement, dated September 27, 2021, by and between the Company and Matrix Capital Management Company, LP	8-K	001-38263	10.1	9/27/2021	Stock Purchase Agreement, dated December 15, 2021, by and among the Company, its UK-based subsidiary Altair Engineering Ltd., the stockholders of World Programming Limited named therein and a sellers' representative named therein	8-K	001-38263	10.1	12/15/2021
10.27	Registration Rights Agreement dated September 27, 2021, by and between the Company and Matrix Capital Management Company, LP	8-K	001-38263	10.2	9/27/2021	Stock Purchase Agreement, dated December 15, 2021, by and among the Company, its UK-based subsidiary Altair Engineering Ltd., the stockholders of December 2015 Software Limited named therein and a sellers' representative named therein	8-K	001-38263	10.2	12/15/2021
10.28	Stock Purchase Agreement, dated December 15, 2021, by and among the Company, its UK-based subsidiary Altair Engineering Ltd., the stockholders of World Programming Limited named therein and a sellers' representative named therein	8-K	001-38263	10.1	12/15/2021					
10.28+	Executive Severance Agreement, dated as of July 25, 2023, by and between Ravi Kunju and the Company	10-Q	001-38263	10.1	11/2/2023					
10.29	Stock Purchase Agreement, dated December 15, 2021, by and among the Company, its UK-based subsidiary Altair Engineering Ltd., the stockholders of December 2015 Software Limited named therein and a sellers' representative named therein	8-K	001-38263	10.2	12/15/2021	Voting Agreement, dated as of October 30, 2024, by and among Siemens Industry Software Inc., Altair Engineering Inc., James R. Scapa, The James R. Scapa Declaration of Trust and the JRS Investments, LLC	8-K	001-38263	10.1	10/30/2024
10.30+	Employment Separation and General Release Agreement, dated as of September 30, 2022, by and between Brett Chouinard and the Company	8-K	001-38263	10.1	10/3/2022					
10.30	Deed of Guarantee, dated as of October 30, 2024, by and between Siemens AG and Altair Engineering Inc.	8-K	001-38263	10.2	10/30/2024					
10.31+	Employment Separation and General Release Agreement, dated as of December 30, 2022, by and between Dr. Uwe Schramm and the Company	8-K	001-38263	10.1	1/4/2023					

10.32+	Executive Severance Agreement, dated as of July 25, 2023, by and between Ravi Kunju and the Company	10-Q	001-38263	10.1	11/2/2023			
19.1	Insider Trading Policy					X		
21.1	List of Subsidiaries of the Registrant					X	List of Subsidiaries of the Registrant	X
23.1	Consent of Independent Registered Public Accounting Firm					X	Consent of Independent Registered Public Accounting Firm	X
31.1	Certification of the Chief Executive Officer of Altair Engineering Inc. pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended					X	Certification of the Chief Executive Officer of Altair Engineering Inc. pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended	X
31.2	Certification of the Chief Financial Officer of Altair Engineering Inc. pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended					X	Certification of the Chief Financial Officer of Altair Engineering Inc. pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended	X
32.1*	Certification of the Chief Executive Officer and Chief Financial Officer of Altair Engineering Inc. pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X	Certification of the Chief Executive Officer and Chief Financial Officer of Altair Engineering Inc. pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
97+	Altair Engineering Inc. Compensation Recovery Policy	10-K	001-38263	97	2/22/2024			
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.							
101.SCH	Inline XBRL Taxonomy Extension Schema with Embedded Linkbase Documents							
104	The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2024, has been formatted in Inline XBRL.							

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97+	Altair Engineering Inc. Compensation Recovery Policy	X

101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema with Embedded Linkbase Documents
104	The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2023, has been formatted in Inline XBRL.

+ Indicates management contract or compensatory plan.

* The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Annual Report on Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates it by reference.

Item 16. Form 10-K Summary

None.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ALTAIR ENGINEERING INC.

Date: February 22, 2024 February 20, 2025	By:	/s/ James R. Scapa
		James R. Scapa
		Chief Executive Officer (Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints James R. Scapa and Matthew Brown, jointly and severally, his or her true and lawful attorneys-in-fact and agent, each with the power of substitution, for him in any and all capacities, to sign any amendments to this report, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant in the capacities and on the dates indicated.

Name	Title	Date
/s/ James R. Scapa **James R. Scapa**	Chief Executive Officer and Director (Principal Executive Officer)	February 22, 2024 20, 2025
/s/ Matthew Brown **Matthew Brown**	Chief Financial Officer (Principal Financial Officer)	February 22, 2024 20, 2025
/s/ Brian Gayle **Brian Gayle**	Senior Vice President, Chief Accounting Officer (Principal Accounting Officer)	February 22, 2024 20, 2025
/s/ Jim F. Anderson **Jim F. Anderson**	Director	February 22, 2024 20, 2025

/s/ Shekar Ayyar **Shekar Ayyar**	Director	February 22, 2024 20, 2025
/s/ Mary C. Boyce **Mary C. Boyce**	Director	February 22, 2024 20, 2025
/s/ Sandy Carter **Sandy Carter**	Director	February 22, 2024 20, 2025
/s/ Stephen Earhart **Stephen Earhart**	Director	February 22, 2024 20, 2025
/s/ Trace Harris **Trace Harris**	Director	February 22, 2024 20, 2025

Exhibit 19.1

POLICY ON INSIDER TRADING

This Policy on Insider Trading (the "*Policy*"), is designed to prevent insider trading or allegations of insider trading, and to protect Altair Engineering Inc.'s reputation for integrity and ethical conduct. This Policy applies to all directors, officers and employees of Altair Engineering Inc., its subsidiaries and affiliates (collectively, "*Altair*"). The Special Trading Procedures Statement applies to all directors and officers of Altair, and certain employees of Altair designated by the Compliance Officer ("*Designated Employees*"). You must read, sign and retain this Policy and, upon request by Altair, re-acknowledge it. Please address questions to Altair's General Counsel (hereinafter referred to as the "*Compliance Officer*").

No director, officer or other employee (or any other person designated by this Policy or by the Compliance Officer) who is aware of material nonpublic information related to Altair may, directly, or indirectly through family members or other persons or entities:

- engage in transactions in the securities of Altair (not permitted in this Policy);
- recommend that any other person engage in transactions in the securities of Altair;
- disclose material nonpublic information to persons within Altair whose jobs do not require them to have that information;
- disclose material nonpublic information to persons outside of Altair, including, but not limited to, family, friends, business associate investors and expert consulting firms, unless such disclosure is made in accordance with Altair's policies regarding the protection authorized external disclosure of information regarding Altair; or
- assist anyone engaged in the above activities.

In addition, it is the policy of Altair that no director, officer or other employee (or any other person designated as subject to this Policy) who, in the course of working for Altair, learns of material nonpublic information about a company (including, but not limited to, a customer or supplier of Altair), may trade in that company's securities until the information becomes public or is no longer material.

WHAT IS "INSIDER TRADING"

Insider trading is, in addition to being a violation of this Policy, a violation of United States federal and state securities laws. The term "*insider trading*" generally refers to the use of material, nonpublic information to trade in securities or to communications of material, nonpublic information to others who may trade on the basis of such information.

While the law concerning insider trading is not static, it is generally understood that the law prohibits insiders of Altair from doing the following:

- trading in Altair securities while in possession of material, nonpublic information concerning Altair;
- having others trade on the insider's behalf while he or she is in possession of material, nonpublic information; and
- communicating nonpublic information concerning Altair to others who may then trade in Altair securities or pass on the information to others who may trade in Altair securities. Such conduct, also known as "*tipping,*" results in liability for the insider of Altair (the "*tipper*") who communicated such information, even if such insider does not actually trade himself, and for the person who received the information (the "*tippee*") if the person has reason to know that it was an improper disclosure and acts on such information or passes it on to others who may act on it.

The elements of insider trading and the potential penalties for such unlawful conduct are discussed herein.

WHO IS AN INSIDER

An "*Insider*" generally includes any person who possesses nonpublic information about Altair and who has a duty to Altair to keep this information confidential.

This includes all directors, officers and employees of Altair, its subsidiaries and its affiliates. In addition, Altair may determine that other persons are also "*Insiders*" and are subject to this Policy, such as service providers, contractors or consultants who have access to material nonpublic information in connection with the provision of such service. Outsiders who could be subject to this Policy include, among others, Altair's attorneys, accountants, consultants, advisory board members, investment bankers and the employees of such organizations.

Your status as an Insider subjects your family members that reside with you to this Policy. This includes a:

- spouse;
- child, child away at college, stepchild;
- grandchild;
- parent, stepparent;
- grandparent;
- sibling;
- in-law; and
- anyone else who lives in your household.

Additionally, any family members, whether or not they live with you, whose transactions in Altair securities are directed by you or are subject to your influence or control are subject to this Policy.

Your status as an Insider subjects any entities that you influence or control to this Policy. This includes any corporations, limited liability companies, partnerships, or trusts (collectively referred to as "*controlled entities*").

MATERIAL INFORMATION

Information is considered "material" if a reasonable investor would consider that information important in making a decision to buy, hold or sell securities. Any information that could be expected to affect Altair's stock price, whether it is positive or negative, should be considered material. There is no bright-line standard for assessing materiality; rather, materiality is based on an assessment of all of the facts and circumstances, and is often evaluated by enforcement authorities with the benefit of hindsight. While it is not possible to define all categories of material information, some examples of information that ordinarily would be regarded as material are:

- Projections of future earnings or losses, or other earnings guidance;
- Changes to previously announced earnings guidance, or the decision to suspend earnings guidance;
- A pending or proposed merger, acquisition or tender offer;
- A pending or proposed acquisition or disposition of a significant asset;
- A pending or proposed joint venture;
- A company restructuring;
- Significant related party transactions;
- A change in dividend policy, the declaration of a stock split, or an offering of additional securities;
- Bank borrowings or other financing transactions out of the ordinary course;
- The establishment of a repurchase program for Altair's securities;
- A change in Altair's pricing or cost structure;
- Major marketing changes;
- A change in management;
- A change in auditors or notification that the auditor's reports may no longer be relied upon;
- Development of a significant new product, process, or service which is reasonably expected to have a material impact on Altair's financial results;
- Pending or threatened significant litigation, or the resolution of such litigation;
- Impending bankruptcy or the existence of severe liquidity problems;
- The gain or loss of a significant customer or supplier;
- The imposition of a ban on trading in Altair's securities or the securities of another company.

Inside information could be material because of its expected effect on the price of Altair securities, the securities of another company, or the securities of several companies.

Material information is not limited to historical facts. With respect to a future event, such as a merger, acquisition or introduction of a new product, the point at which negotiations or product development are determined to be material is determined by balancing the probability that the event will occur against the magnitude of the effect the event would have on a company's operations or stock price should it occur. Information concerning an event that would have a large effect on stock price, such as a merger, may be material even if the possibility that the event will occur is relatively small.

If you are unsure whether information is material, you should consult the Compliance Officer before making any decision to disclose such information (other than to persons who need to know it) or to trade in or recommend securities to which that information relates.

NONPUBLIC INFORMATION

Information that has not been disclosed to the public is generally considered to be nonpublic information. In order to establish that the information has been disclosed to the public, it may be necessary to demonstrate that the information has been widely disseminated.

Information generally would be considered widely disseminated if it has been disclosed through the Dow Jones "broad tape," newswire services, a broadcast on widely available radio or television programs, publication in a widely-available newspaper, magazine or news website, or public disclosure documents filed with the Securities and Exchange Commission (the "*SEC*") that are available on the SEC's website. By contrast, information would likely not be considered widely disseminated if it is available only to Altair's employees, or if it is only available to a select group of analysts, brokers and institutional investors.

Once information is widely disseminated, it is still necessary to afford the investing public with sufficient time to absorb the information. As a general rule, information should not be considered fully absorbed by the marketplace until after the second business day after the day on which the information is released. If, for example, Altair were to make an announcement on a Monday, you should not trade in the securities of Altair until Thursday. Depending on the particular circumstances, Altair may determine that a longer or shorter period should apply to the release of specific material nonpublic information.

As with questions of materiality, if you are not sure whether information is considered public, you should either consult with the Compliance Officer or assume that the information is nonpublic and treat it as confidential.

TRANSACTIONS SUBJECT TO THIS POLICY

This Policy applies to transactions, including gifts (as described below), in Altair securities, including common stock, options to purchase common stock, or any other securities that Altair may issue, as well as derivative securities that are not issued by Altair such as exchange-traded put or call options or swaps relating to Altair securities. Upon adoption of this Policy, Altair had Class A common stock, Class B common stock and options to purchase Class A common stock outstanding.

Bona fide Gifts. For purposes of this Policy, bona fide gifts or other transfers to family members, whether for estate planning or otherwise, or to charities or to other third parties, are considered "Trading" within the meaning of this Policy. Gifts are subject to the requirements and restrictions outlined in this Policy, including pre-clearance in accordance with the "Pre-Clearance Procedures" section of this Policy.

Prohibited Transactions. All directors, officers and Designated Employees, including any family members or controlled entities thereof, are prohibited from engaging in the following transactions in Altair securities:

Short Sales*.* None of you, your family members or your controlled entities may sell any securities of Altair that are not owned by such person at the time of the sale (a "*short sale*"), including a sale with delayed delivery (a "*sale against the box*").

Standardized Options*.* An "*option*" is the right either to buy or sell a specified amount or value of a particular underlying interest at a fixed exercise price by exercising the option before its specified expiration date. An option which gives a right to buy is a "*call*" option, and an option which gives a right to sell is a "*put*" option. Standardized options (which are so labeled as a result of their standardized terms) offer the opportunity to invest using substantial leverage and therefore lend themselves to significant potential for abusive trading on material inside information. Standardized options also expire soon after issuance and thus necessarily involve short-term speculation, even where the date of expiration of the option makes the option exempt from certain SEC restrictions. The writing of a call or the acquisition of a put also involves a "*bet against the company*" and therefore presents a clear conflict of interest for you. As a result, none of you, your family members or any controlled entities may trade in standardized options relating to Altair securities at any time.

Hedging Transactions*.* Certain forms of hedging or monetization transactions, such as zero-cost collars and forward sale contracts, allow Insiders to lock in much of the value of his or her stock holdings, often in exchange for all or part of the potential for upside appreciation in the stock. These transactions allow Insiders to continue to own the covered securities, but without the full risks and rewards of ownership. When that occurs, Insiders may no longer have the same objectives as Altair's other shareholders. Therefore, none of you, your family members or any controlled entities may engage in any such transactions.

Margin Accounts and Pledges.Securities held in a margin account may be sold by the broker without the customer's consent if the customer fails to meet a margin call. Securities pledged or hypothecated as collateral for a loan may be sold in foreclosure if the borrower defaults on the loan. Because a margin sale or foreclosure sale may occur at a time when you are aware of material nonpublic information or otherwise are not permitted to trade in Altair securities, neither you, your family members nor your controlled entities may hold Altair securities in a margin account or pledge Altair securities as collateral for a loan unless such transaction has been pre-approved by Altair's Compliance Officer.

Exempt transactions.

Stock Option Exercises.This Policy does not apply to the exercise of any stock option acquired pursuant to Altair's equity plans, or to the exercise of a tax withholding right pursuant to which a person has elected to have Altair withhold shares subject to an option to satisfy tax withholding requirements. This Policy does apply to any sale of stock as part of a broker-assisted cashless exercise of an option (to the extent that such an exercise is permitted under Altair's equity plans and applicable stock exchange rules and policies), or any other market sale for the purpose of generating the cash needed to pay the exercise price of an option.

Restricted Stock Awards. This Policy does not apply to the vesting of restricted stock (if, as and when issued by Altair), or of a tax withholding right pursuant to which you elect to have Altair withhold shares of stock to satisfy tax withholding requirements upon the vesting of any restricted stock. This Policy, however, would apply to any market sale of restricted stock (if any becomes issued).

401(k) Plan.This Policy does not apply to purchases of Altair's securities in Altair's 401(k) plan resulting from your periodic contribution of money to the plan pursuant to your payroll deduction election. This Policy does apply, however, to certain elections you may make under the 401(k) plan, including: (a) an election to increase or decrease the percentage of your periodic contributions that will be allocated to Altair's stock fund; (b) an election to make an intra-plan transfer of an existing account balance into or out of Altair's stock fund; (c) an election to borrow money against your 401(k) plan account if the loan will result in a liquidation of some or all of your Altair stock fund balance; and (d) an election to pre-pay a plan loan if the pre-payment will result in allocation of loan proceeds to Altair's stock fund.

Transactions with Altair.This Policy does not apply to the purchase of Altair securities from Altair or the sale of Altair securities to Altair.

Except for above there are no exceptions. Securities laws do not recognize any mitigating circumstances. Transactions that may be necessary or justifiable for independent reasons (such as in the case of an emergency), or small transactions, are not permitted.

TRANSACTIONS UNDER ALTAIR EMPLOYEE STOCK PURCHASE PROGRAM

Altair's insider trading policy shall **not** apply to automatic periodic purchases through payroll deduction of Altair stock in Altair's Employee Stock Purchase Plan (the "ESPP").

The Altair insider trading policy **does** apply, however, to voluntary transactions, including a participant's: (a) initial election to enroll in the ESPP for any enrollment period, (b) election to increase or decrease the amount of a participant's automatic periodic contributions by payroll deduction to the ESPP, (c) election to cease payroll deductions altogether and withdraw any accumulated cash, and (d) sales of Altair stock that were purchased under the ESPP, none of which should be done when a participant possess material nonpublic information regarding Altair (and, for Designated Employees, should not be done during any Blackout Period as defined below).

THE CONSEQUENCES OF VIOLATING THIS POLICY

The purchase or sale of securities while aware of material nonpublic information, or the disclosure of material nonpublic information to others who then trade in securities of Altair, is prohibited by the federal and state laws. Insider trading violations are pursued vigorously by the SEC, U.S. Attorneys and state enforcement authorities as well as the laws of foreign jurisdictions. Punishment for insider trading violations is severe, and could include significant fines and imprisonment. While the regulatory authorities concentrate their efforts on the individuals who trade, or who tip inside information to others who trade, the federal securities laws also impose potential liability on companies and other "controlling persons" (such as directors, officers and other supervisory personnel) if they fail to take reasonable steps to prevent insider trading by company personnel.

In addition, an individual's failure to comply with this Policy may subject the individual to Altair-imposed sanctions, including dismissal for cause, whether or not the employee's failure to comply results in a violation of law. Needless to say, a violation of law, or even an SEC investigation that does not result in prosecution, can tarnish a person's reputation and irreparably damage a career.

POST-TERMINATION TRANSACTIONS

This Policy continues to apply to transactions by Insiders in Altair securities even after the Insider ceases to be an Insider. If you as a director, officer or employee are aware of material, nonpublic information when your employment or service relationship terminates, you may not trade in Altair securities until that information has become public or is no longer material.

REPORTING OF VIOLATIONS

If any person knows or has reason to believe that this Policy has been or may be violated, the person should bring the actual or potential violation to the attention of Altair's Compliance Officer.

MODIFICATIONS AND WAIVERS

Altair reserves the right to amend or modify the procedures set forth herein at any time. Waiver of any provision of this Policy in a specific instance may be authorized in writing by Altair's Compliance Officer.

This document states a policy of Altair Engineering Inc. and is not intended to be regarded as the rendering of legal advice. This policy statement is intended to promote compliance with existing law and is not intended to create or impose liability that would not exist in the absence of the policy statement.

Special Trading Procedures Statement

This Special Trading Procedures Statement, (these "*Procedures*") is applicable to the directors of Altair, all officers identified by Altair in its SEC filings as executive officers, and all other persons designated by the Compliance Officer as being subject to these procedures, as well as the family members and controlled entities of such persons. These Procedures are in addition to and supplement Altair's Policy on Insider Trading.

The below restrictions do not apply to the transactions described under the Policy on Insider Trading section entitled, "Transactions Subject to this Policy?" but are still subject to receiving pre-clearance with the Compliance Officer.

PRE-CLEARANCE PROCEDURES

The persons designated by the Compliance Officer as being subject to these procedures, as well as the family members and controlled entities of such persons, may not engage in any transaction in Altair's securities without first obtaining pre-clearance of the transaction from the Compliance Officer. A request for pre-clearance should be submitted to the Compliance Officer at least two business days in advance of the proposed transaction, and if approved, such pre-clearance shall be valid for three business days. The Compliance Officer is under no obligation to approve a transaction submitted for pre-clearance, and may determine not to permit the transaction. If a person seeks preclearance and permission to engage in the transaction is denied, then he or she should refrain from initiating any transaction in Altair's securities, and should not inform any other person of the restriction.

When a request for pre-clearance is made, the requestor should carefully consider whether he or she may be aware of any material nonpublic information about Altair, and should describe fully those circumstances to the Compliance Officer. The requestor should also indicate whether he or she has effected any non-exempt "opposite-way" transactions within the past six months, and should be prepared to report the proposed transaction on an appropriate Form 4 or Form 5. The requestor should also be prepared to comply with SEC Rule 144 and file Form 144, if necessary, at the time of any sale.

QUARTERLY TRADING RESTRICTIONS

The persons designated by the Compliance Officer as subject to this restriction, as well as their family members or controlled entities, may not conduct any transactions involving Altair's securities (other than as specified by this Policy), during a "Blackout Period" beginning fourteen days prior to the end of each fiscal quarter and ending on the second business day following the date of the public release of Altair's earnings results for that quarter. In other words, these persons may only conduct transactions in Altair's securities during the "Open Trading Window Period" beginning on the third business day following the public release of Altair's quarterly earnings and ending fourteen days prior to the close of the next fiscal quarter.

EVENT-SPECIFIC BLACK-OUT PROCEDURES.

From time to time, an event may occur that is material to Altair and is known by only a few directors, officers and/or employees. So long as the event remains material and nonpublic, the persons designated by the Compliance Officer may not trade Altair's securities. In addition, Altair's financial results may be sufficiently material in a particular fiscal quarter that, in the judgment of the Compliance Officer, designated persons should refrain from trading in Altair's securities even sooner than the typical Blackout Period described above. In that situation, the Compliance Officer may notify these persons that they should not trade in Altair's securities, without disclosing the reason for the restriction. The existence of an event-specific trading restriction period or extension of a Blackout Period will not be announced to Altair as a whole, and should not be communicated to any other person. Even if the Compliance Officer has not designated you as a person who should not trade due to an event-specific restriction, you should not trade while aware of material nonpublic information. Exceptions will not be granted during an event-specific trading restriction period.

RULE 10b5-1 PLANS

Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, provides a defense from insider trading liability. To be eligible for the defense you must enter into a *"Rule 10b5-1 Plan,"* which satisfies the following conditions under the rule:

- Convey your intentions through:
  - a binding contract to purchase or sell the security;
  - instructions are provided to a third person to execute the trade for the instructing person or entity's account; or
  - an adopted written plan for trading securities;
- You were not aware of material, nonpublic information at the time of the decision to enter into such contract or plan or decision to provide such instructions; and
- The contract, instructions or plan must:
  - specify the amount, prices and date of the purchase or sale;
  - delegate discretion on determining amount, price and date to an independent third party; or
  - provide a written formula or algorithm or computer program for determining the amounts, prices and dates of such purchases or sales.

A copy of a Rule 10b5-1 Plan must be submitted to the Compliance Officer for pre-clearance at least three days prior to the entry into a Rule 10b5-1 Plan. No further

pre-clearance of transactions conducted pursuant to a Rule 10b5-1 plan will be required.

POST-TRADE REPORTING

You are required to report to Altair's Compliance Officer any transaction in Altair's securities by you, your family members or controlled entities no later than the business day following the date of your transaction. Each report you make should include the date of the transaction, quantity, price, and broker through which the transaction was effected. This reporting requirement may be satisfied by sending (or having your broker send) duplicate confirmations of trades to the Compliance Officer if such information is received by the required date.

The foregoing reporting requirement is designed to help monitor compliance with the these Procedures and to enable Altair to help those persons who are subject to reporting obligations under Section 16 of the Securities Exchange Act of 1934, as amended, to comply with such reporting obligations. Each officer and director, however, and not Altair, is personally responsible for ensuring that his or her transactions do not give rise to "*short swing*" liability under Section 16 and for filing timely reports of transactions with the SEC. A separate memorandum is provided to such individuals regarding these reporting obligations.

Exhibit 21.1

LIST OF SUBSIDIARIES

Subsidiaries of the Registrant as of December 31, 2023 December 31, 2024	**Jurisdiction of Organization**
Altair Engineering, Inc.	United States
Datawatch Corporation	United States
Altair Product Design, Inc.	United States
Ilumisys Inc.	United States
Altair Bellingham LLC	United States
Altair Bellingham II, LLC	United States
Altair Bellingham III, LLC	United States
RapidMiner, Inc.	United States
Vanderplaats Research & Development, Inc. In FLight, LLC	United States
Metrics Design Automation Inc.	Canada
Altair Engineering Canada, Ltd.	Canada
Altair Engineering (Pty) Ltd.	South Africa
Informatica Altair Mexico S de RL de CV	Mexico
Altair Engineering Engineering do Brazil Sistemas e Servicos Ltda	Brazil
Altair Engineering AB	Sweden
Altair Software and Services S.L.	Spain
Altair Engineering GmbH	Germany
RapidMiner GmbH	Germany
Altair Engineering France SAS	France
RapidMiner Altair Engineering Kft.	Hungary
Altair Engineering Srl	Italy
AD Solutions Srl	Italy
Altair Engineering Single Shareholder Ltd.	Greece
Altair Engineering Israel Ltd.	Israel

Altair Engineering Software Pty Ltd.	Australia
Altair Engineering Software (Shanghai) Co. Ltd.	China
Altair Engineering India Pvt. Ltd.	India
Altair Engineering Co. Ltd.	Korea
Altair Engineering Sdn. Bhd.	Malaysia
Altair Engineering Co., Ltd.	Taiwan
Altair Engineering Ltd.	Japan
Altair Engineering (Singapore) Ptd Ltd.	Singapore
Altair Technologies Philippines Inc.	Philippines
Gen3D Limited	United Kingdom
Altair Engineering Ltd.	United Kingdom
World Programming Limited	United Kingdom
December 2015 Software Limited	United Kingdom
RapidMiner Limited	United Kingdom

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-221312) pertaining to the 2001 Non-Qualified Stock Option Plan, 2001 Incentive and Non-Qualified Stock Option Plan, 2012 Incentive and Non-Qualified Stock Option Plan, and 2017 Equity Incentive Plan of Altair Engineering Inc.,

(2) Registration Statement (Form S-8 No. 333-223833) pertaining to the 2017 Equity Incentive Plan of Altair Engineering Inc.,

(3) Registration Statement (Form S-8 No. 333-230019) pertaining to the 2017 Equity Incentive Plan of Altair Engineering Inc.,

(4) Registration Statement (Form S-8 No. 333-236814) pertaining to the 2017 Equity Incentive Plan of Altair Engineering Inc.,

(5) Registration Statement (Form S-8 No. 333-255157) pertaining to the 2017 Equity Incentive Plan of Altair Engineering Inc.,

(6) Registration Statement (Form S-8 No. 333-263122) pertaining to the 2017 Equity Incentive Plan of Altair Engineering Inc.,

(7) Registration Statement (Form S-8 No. 333-255160) pertaining to the Altair Engineering Inc. 2021 Employee Stock Purchase Plan, and Plan.,

(8) Registration Statement (Form S-8 No. 333-277284) pertaining to the 2017 Equity Incentive Plan of Altair Engineering Inc., and

(9) Registration Statement (Form S-3 No. 333-266587);

of our reports dated February 22, 2024 February 20, 2025, with respect to the consolidated financial statements of Altair Engineering Inc. and subsidiaries and the effectiveness of internal control over financial reporting of Altair Engineering Inc. and subsidiaries included in this Annual Report (Form 10-K) of Altair Engineering Inc. for the year ended December 31, 2023 December 31, 2024.

/s/ Ernst & Young LLP
Detroit, Michigan

February 22, 2024 20, 2025

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, James R. Scapa, certify that:

1. I have reviewed this annual report on Form 10-K of Altair Engineering Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ James R. Scapa

James R. Scapa
Chief Executive Officer
(Principal Executive Officer)

February 22, 2024 20, 2025

Exhibit 31.2

CERTIFICATION PURSUANT TO

RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,

AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Matthew Brown, certify that:

1. I have reviewed this annual report on Form 10-K of Altair Engineering Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Matthew Brown

Matthew Brown
Chief Financial Officer
(Principal Financial Officer)

February 22, 2024 20, 2025

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Altair Engineering Inc. (the “Company”), on Form 10-K for the period ended December 31, 2023 December 31, 2024, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned officers of the Company certify to their knowledge and in their respective capacities, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ James R. Scapa
James R. Scapa
Chief Executive Officer
(Principal Executive Officer)

/s/ Matthew Brown
Matthew Brown
Chief Financial Officer
(Principal Financial Officer)

February 22, 2024 20, 2025

Exhibit 97

ALTAIR ENGINEERING INC.

(Adopted and approved on August 9, 2023, and effective as of December 1, 2023)

1. Purpose

Altair Engineering Inc. (collectively with its subsidiaries, the “**Company**”) is committed to promoting high standards of honest and ethical business conduct and compliance with applicable laws, rules and regulations. As part of this commitment, the Company has adopted this Compensation Recovery Policy (this “**Policy**”). This Policy is designed to comply with the requirements of Section 10D of the Securities Exchange Act of 1934, as amended (the ”**Exchange Act**”), Rule 10D-1 promulgated thereunder and the rules of the national securities exchange on which the Company’s securities are traded and explains when the Company will pursue recovery of Incentive Compensation awarded or paid to a Covered Person. Please refer to Exhibit A attached hereto (the “**Definitions Exhibit**”) for the definitions of capitalized terms used throughout this Policy.

2. Recovery of Recoverable Incentive Compensation

In the event of a Restatement, the Company will pursue, reasonably promptly, recovery of all Recoverable Incentive Compensation from a Covered Person without regard to such Covered Person’s individual knowledge or responsibility related to the Restatement. Notwithstanding the foregoing, if the Company is otherwise required by this Policy to undertake a Restatement, the Company will not be required to recover the Recoverable Incentive Compensation if the Compensation Committee determines, after exercising a normal due process review of all the relevant facts and circumstances, that (a) a Recovery Exception exists and (b) it would be impracticable to seek such recovery under such facts and circumstances.

If such Recoverable Incentive Compensation was not awarded or paid on a formulaic basis, the Company will pursue recovery of the amount that the Compensation Committee determines in good faith should be recovered.

3. Other Actions

The Compensation Committee may, subject to applicable law, pursue recovery of Recoverable Incentive Compensation in the manner it chooses, including by pursuing reimbursement from the Covered Person of all or part of the compensation awarded or paid, by electing to withhold unpaid compensation, by set-off, or by rescinding or canceling unvested stock or option awards.

In the reasonable exercise of its business judgment under this Policy, the Compensation Committee may in its sole discretion determine whether and to what extent additional action is appropriate to address the circumstances surrounding a Restatement to minimize the likelihood of any recurrence and to impose such other discipline as it deems appropriate.

Rev. Final August 9 2023

4. No Indemnification or Reimbursement

As required by applicable law, notwithstanding the terms of any other policy, program, agreement or arrangement, in no event will the Company or any of its affiliates indemnify or reimburse a Covered Person for any loss of Recoverable Incentive Compensation under this Policy and, to the extent prohibited by law, neither the Company nor any of its affiliates will pay premiums on any insurance policy that would cover a Covered Person’s potential obligations with respect to Recoverable Incentive Compensation under this Policy.

5. Administration of Policy

The Compensation Committee will have full authority to administer this Policy. The Compensation Committee will, subject to the provisions of this Policy and Rule 10D-1 of the Exchange Act, and the Company’s applicable exchange listing standards, make such determinations and interpretations and take such actions in connection with this Policy as it deems necessary, appropriate or advisable. It is intended that this Policy be interpreted in a manner that is consistent with the requirements of Section 10D of the Exchange Act, Rule 10D-1 thereunder and any applicable rules or standards adopted by the Securities and Exchange Commission or any national securities exchange on which the Company’s securities are listed. All determinations and interpretations made by the Compensation Committee will be final, binding and conclusive.

6. Other Claims and Rights

The requirements of this Policy are in addition to, and not in lieu of, any legal and equitable claims the Company or any of its affiliates may have or any actions that may be imposed by law enforcement agencies, regulators, administrative bodies, or other authorities. Further, the exercise by the Compensation Committee of any rights pursuant to this Policy will not impact any other rights that the Company or any of its affiliates may have with respect to any Covered Person subject to this Policy.

7. Acknowledgement by Covered Persons; Condition to Eligibility for Incentive Compensation

The Company will provide notice and seek acknowledgement of this Policy from each Covered Person, provided that the failure to provide such notice or obtain such acknowledgement will have no impact on the applicability or enforceability of this Policy. After the Effective Date (and also with respect to any Incentive Compensation Received on or after October 2, 2023 pursuant to a preexisting contract or arrangement), any grant of Incentive Compensation to a Covered Person will be deemed to have been made subject to the terms of this Policy, whether or not such Policy is specifically referenced in the documentation relating to such grant and this Policy shall be deemed to constitute an integral part of the terms of any such grant. All Incentive Compensation subject to this Policy will remain subject to this policy, even if already paid, until the Policy ceases to apply to such Incentive Compensation and any other vesting conditions applicable to such Incentive Compensation are satisfied.

8. Amendment; Termination

The Board or the Compensation Committee may amend or terminate this Policy at any time. In the event that Section 10D of the Exchange Act, Rule 10D-1 thereunder or the rules of the national securities exchange on which the Company's securities are traded are modified or supplemented, whether by law, regulation or legal interpretation, such modification or supplement shall be deemed to modify or supplement this Policy to the maximum extent permitted by applicable law.

9. Effectiveness

Except as otherwise determined in writing by the Compensation Committee, this Policy will apply to any Incentive Compensation that is Received by a Covered Person on or after the Effective Date. This Policy will survive and continue notwithstanding any termination of a Covered Person's employment with the Company and its affiliates.

10. Successors

This Policy shall be binding and enforceable against all Covered Persons and their successors, beneficiaries, heirs, executors, administrators, or other legal representatives.

DEFINITIONS EXHIBIT

"**Applicable Period**" means the three completed fiscal years of the Company immediately preceding the earlier of (i) the date the Board, a committee of the Board, or the officer or officers of the Company authorized to take such action if Board action is not required, concludes (or reasonably should have concluded) that a Restatement is required or (ii) the date a court, regulator, or other legally authorized body directs the Company to prepare a Restatement. The "Applicable Period" also includes any transition period (that results from a change in the Company's fiscal year) within or immediately following the three completed fiscal years identified in the preceding sentence.

"**Board**" means the Board of Directors of the Company.

"**Compensation Committee**" means the Company's committee of independent directors responsible for executive compensation decisions, or in the absence of such a committee, a majority of the independent directors serving on the Board.

"**Covered Person**" means any person who is, or was at any time, during the Applicable Period, an Executive Officer of the Company. For the avoidance of doubt, a Covered Person may include a former Executive Officer that left the Company, retired, or transitioned to an employee role (including after serving as an Executive Officer in an interim capacity) during the Applicable Period.

"**Effective Date**" means December 1, 2023.

"**Executive Officer**" means the Company's president, principal executive officer, principal financial officer, principal accounting officer (or if there is no such accounting officer, the controller), any vice-president in charge of a principal business unit, division, or function (such as sales, administration, or finance), any other officer who performs a policy-making function, or any other person (including an officer of the Company's parent(s) or subsidiaries) who performs similar policy-making functions for the Company.

"**Financial Reporting Measure**" means a measure that is determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any measure that is derived wholly or in part from such measure (including but not limited to, "non-GAAP" financial measures, such as those appearing in the Company's earnings releases or Management Discussion and Analysis). Stock price and total shareholder return (and any measures derived wholly or in part therefrom) shall be considered Financial Reporting Measures.

"**Recovery Exception:**" A recovery of Recoverable Incentive Compensation shall be subject to a "Recovery Exception" if the Compensation Committee determines in good faith that: (i) pursuing such recovery would violate home country law of the jurisdiction of incorporation of the Company where that law was adopted prior to November 28, 2022 and the Company provides an opinion of home country counsel to that effect acceptable to the Company's applicable listing exchange; (ii) the direct expense paid to a third party to assist in enforcing this Policy would exceed the Recoverable Incentive Compensation and the Company has (A) made a reasonable attempt to recover such amounts and (B) provided documentation

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of such attempts to recover to the Company's applicable listing exchange; or (iii) recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of Section 401(a)(13) or Section 411(a) of the Internal Revenue Code of 1986, as amended, and regulations thereunder.

"**Incentive Compensation**" means any compensation that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure. Incentive Compensation does not include any base salaries (except with respect to any salary increases earned wholly or in part based on the attainment of a Financial Reporting Measure performance goal); bonuses paid solely at the discretion of the Compensation Committee or Board that are not paid from a "bonus pool" that is determined by satisfying a Financial Reporting Measure performance goal; bonuses paid solely upon satisfying one or more subjective standards and/or completion of a specified employment period; non-equity incentive plan awards earned solely upon satisfying one or more strategic measures or operational measures; and equity awards that vest solely based on the passage of time and/or attaining one or more non-Financial Reporting Measures. Incentive Compensation includes any Incentive Compensation Received on or after October 2, 2023 pursuant to a preexisting contract or arrangement.

"**Received:**" Incentive Compensation is deemed "Received" in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive Compensation award is attained, even if the payment or grant of the Incentive Compensation occurs after the end of that period.

"**Recoverable Incentive Compensation**" means the amount of any Incentive Compensation (calculated on a pre-tax basis) Received by a Covered Person during the Applicable Period that is in excess of the amount that otherwise would have been Received if the calculation were based on the Restatement. For Incentive Compensation based on (or derived from) stock price or total shareholder return where the amount of Recoverable Incentive Compensation is not subject to mathematical recalculation directly from the information in the applicable Restatement, the amount will be determined by the Compensation Committee based on a reasonable estimate of the effect of the Restatement on the stock price or total shareholder return upon which the Incentive Compensation was Received (in which case, the Company will maintain documentation of such determination of that reasonable estimate and provide such documentation to the Company's applicable listing exchange).

"**Restatement**" means an accounting restatement of any of the Company's financial statements filed with the Securities and Exchange Commission under the Exchange Act, or the Securities Act of 1933, as amended, due to the Company's material noncompliance with any financial reporting requirement under U.S. securities laws, regardless of whether the Company or Covered Person misconduct was the cause for such restatement. "Restatement" includes any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements (commonly referred to as "Big R" restatements), or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (commonly referred to as "little r" restatements).

DISCLAIMER

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