The CIMdata 2022 Simulation & Analysis (S&A) Market Analysis Report

Comprehensive Information and Analysis Critical to Sound Business Decisions

Products across many industry sectors are made better by applying Simulation & Analysis (S&A) solutions early and often in the product lifecycle. The application of S&A has progressed far beyond its use as an analog of physical testing for final product and manufacturing validation.

S&A is a US$8.3 billion segment of PLM covered in CIMdata's annual PLM Market Analysis Report (MAR) Series, which provides detailed information and in-depth analysis of the worldwide Product Lifecycle Management (PLM) market. The CIMdata PLM MAR Series is packaged in five modules, each with a separate focus and targeting a different audience. The report modules contain analyses of major PLM trends and issues, leading PLM solution providers, purchases of PLM software and services for geographical regions and industry sectors, and historical and projected data about market growth. This series of reports provides insights into worldwide PLM market investment dynamics and the revenue performance of leading PLM solution providers.

Our global analyses cover many segments, but none so dynamic and rapidly growing over the last several decades as S&A. S&A solution and service providers are delivering high value offerings throughout the product lifecycle, and it is shown in their results, which is the focus of this CIMdata S&A Market Analysis Report.

The CIMdata S&A MAR

The CIMdata S&A MAR builds upon the methodology and data from the global PLM MAR series, and leverages the expertise and research of the CIMdata Simulation-Driven Systems Development Consulting Practice. S&A includes a wide range of technologies and related services, including:

- 2D/3D structures, strength, stiffness, and vibration (FEA)
- Structural fatigue, durability, and failure analysis
- Empirical materials characterization and material data libraries
- Laminate composites and advanced materials analysis

- CFD (computational fluid dynamics) and flow analysis
- Thermal and heat transfer, conduction, convection, and radiation
- Multi-body dynamics and mechanisms—rigid and flexible bodies
- Impact, crash, and safety analysis (explicit nonlinear)
- Electromagnetics
- Optics analysis and other sensors
- Acoustics and vibro-acoustics
- Integrated multiphysics solutions
- 3D topology and geometry optimization
- Analysis post-processing and high performance visualization
- Process orchestration and analysis automation
- System simulation (0D, 1D, networks, embedded software, controls)
- System synthesis, optimization, DOE, and robust design
- General math-based calculations (e.g., Mathcad, Maple, Mathematica)
- Physical testing and empirical data analysis
- Manufacturing process simulations (plastics, metal forming, casting, etc.)
- Chemical formulations and reactions analysis
- Embedded software and controls simulation and validation
- Vertical applications by industry (e.g., vehicle NVH, engine performance, combustion, powertrain, gear system noise and vibration, etc.)
- Cross-domain modeling and simulation (M&S) data interoperability tools
- Simulation data and process management (SDPM)
- Engineering consulting services

These solutions are designed to enable engineers to simulate real-world product performance in terms of reliability, durability, and functionality via digital modeling and simulations, to run through "what-if" scenarios, explore new designs and technology, evaluate multiple concept alternatives, and gain deeper insight into product behavior.

The 2022 S&A MAR includes discussions of trends in the market and how S&A solution and service providers are responding. It also includes an overview of the research agenda of the CIMdata Simulation-Driven Systems Development Consulting Practice. The report documents CIMdata's estimates for the global S&A market for the calendar year 2021, including 2021 revenue results and revenue forecasts for 2022 to 2026. It includes over 50 tables and charts, including S&A historical revenue and forecasts, revenues by industry segment, and revenues by geography. S&A market leaders profiled in the S&A MAR include:

- Altair
- Ansys
- Autodesk
- BETA CAE Systems
- Cadence Design Systems
- COMSOL Group
- Cybernet Systems
- Dassault Systèmes
- ESI Group
- Gamma Technologies
- MathWorks
- Maya HHT (Heat Transfer Technologies) Ltd.
- MSC Software (Hexagon)
- PTC
- Siemens Digital Industries Software

Simulations Plus, Inc.The report includes charts that highlight the market leaders, focusing on total revenues, splits by software and services, customer size, and geography. In addition, in 2021, we introduced estimates for the relative sizes of 14 application segments of the overall S&A market as defined by CIMdata.

The report also covers the role of the smaller S&A solution providers in developing and offering unique and emerging technologies to meet the major trends identified in the S&A domain as well as solution providers in the rapidly emerging domain of model-based systems engineering (MBSE).

In total, over 75 solution providers and open source solutions are reported in the 2022 S&A Market Analysis Report.

Who Should Buy This Report?

This S&A market analysis is valuable to a range of audiences. S&A solution and service providers often use CIMdata MAR data to support strategic planning, sales planning, and marketing. Industrial companies seeking to make S&A investments value this information as part of their decision-making process. Industry leaders as well as investment groups and financial analysts often acquire MAR data to support strategic partnership decisions and mergers and acquisitions(M&A) activities.

The report can be purchased for US$4,995. Purchasers of the S&A MAR may also purchase that report's data and charts in an Excel workbook for an additional $3,500. For more information, please visit www.CIMdata.com or call +1 734. 668.9922.

About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design, deliver, and support innovative products and services by identifying and implementing appropriate digital initiatives. For nearly forty years, CIMdata has provided industrial organizations and providers of technologies and services with world-class knowledge, expertise, and best-practice methods on a broad set of product lifecycle management (PLM) solutions and the digital transformation they enable. CIMdata also offers research, subscription services, publications, and education through certificate programs and international conferences. To learn more, visit www.CIMdata.com or email info@CIMdata.com.