

CAPABILITIES CHART

ALTAIRS APPLICATIONS FOR EVERY NEED

Our comprehensive, open-architecture solutions data analytics, simulation and high-performance computing, enable design and optimization for high performance, innovative, and sustainable products and processes in an increasingly connected world.

SIMULATION

ELECTRONIC SYSTEM DESIGN

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Wireless Connectivity, Including 5G	●	
PCB Design & Verification	●	
PCB Manufacture & Assembly Simulation	●	
System & Circuit Simulation	●	
Microcontroller Firmware Development	●	
Thermal Analysis	●	
Electromagnetic Compatibility (EMC)	●	
Networking Planning & Spectrum Management	●	
eMotor Design	●	
Sensor & Actuator Design	●	
EDA Job Scheduling	●	
Embedded System Design	●	
Touchscreen		●

FLUIDS & THERMAL

Flow, Heat Transfer & Turbulence	●	●
External Aerodynamics	●	●
Particle-based Fluid Dynamics	●	
Cosimulation with Discrete Element Modeling	●	
Fluid System Design	●	●
Paint Shop Process		●
Combustion		●

INDUSTRIAL DESIGN

3D Product Design	●	
3D Rendering & Animation	●	

MANUFACTURING

Additive Manufacturing	●	●
Casting	●	●
Extrusion	●	
Injection Molding	●	
Metal Forming	●	●
Polyurethane Foams	●	
Process Manufacturing	●	●

MANUFACTURING CONT.

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Forging		●
Design Life-cycle Management		●

MULTIPHYSICS

Multi-body Systems	●	●
Multi-Disciplinary System	●	●
Fluid-Structure Interaction	●	●
Thermomechanical Simulation	●	
Multi-Disciplinary Optimization	●	●
Multiphysics Workflows	●	●
Uncertainly Quantification		●

STRUCTURES

Simulation-driven Design	●	●
Structural Optimization	●	●
Modeling & Visualization	●	●
Linear & Nonlinear Analysis	●	●
Composite Design	●	●
Crash & Impact	●	●
Noise & Vibration	●	●
Durability	●	●
Material Information		●
Augmented Data Analytics	●	

SYSTEM MODELING

Model-based Development	●	●
Math, Scripting, & Data Analysis	●	●
Multi-body Dynamics	●	
Discrete Element Modeling	●	
Model-based Systems Engineering (MBSE)/ Systems Requirements		●

SIMULATION CONT.

OPTIMIZATION

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Multidisciplinary	●
Data-mining	●
Machine Learning (ML)	●
Topology Optimization	●
Design Exploration	●

INTERNET OF THINGS (IOT)

IoT

Device Management	●
Edge Orchestration	●
Stream Processing	●
Data Storage	●
Application Enablement	●
Real-Time Dashboards	●

HIGH-PERFORMANCE COMPUTING

HPC & CLOUD

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Workload Management	●
HPC Usability & Remote Visualization	●
License Management	●
Cloud Bursting	●
Turnkey HPC	●
Cost Allocation & Management	●
Job & Policy Simulation	●

DATA ANALYTICS

DATA ANALYTICS

Data Transformation	●
Predictive Analytics & Machine Learning	●
Real-Time Data Visualization	●
Data Automation & Distribution	●
Content Management	●

	INDUSTRIAL DESIGNER (ID)	MECHANICAL DESIGNER (MD)	CONCEPT ENGINEER (CE)	MECHANICAL ENGINEER (ME)	MULTIPHYSICS/MECHATRONICS ENGINEER (MME)	DATA ANALYST (DA)	ENTERPRISE SUITE (ENT)
SYSTEMS MODELING	○	○	●	●	●		●
FLUIDS & THERMAL			○	●	●		●
MANUFACTURING			○	●	●		●
MULTIPHYSICS			○	●	●		●
STRUCTURES		○	○	●	●		●
ELECTRONIC SYSTEM DESIGN			○	○	●		●
INDUSTRIAL DESIGN	●	●	●	●	●		●
OPTIMIZATION			○	●	●		●
DATA ANALYTICS						●	●
IOT					●		●

○ Partial ● Complete

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