

SMART PRODUCT DEVELOPMENT

Scalable solutions for your entire product lifecycle

The Internet of Things (IoT) has transformed the way companies do business. New product lines, recurring revenue streams, more efficient operations, higher quality, and faster time-to-market are all within reach with the introduction of smart interconnections between systems and assets. Altair has the knowledge and technology to help you realize your Smart Product Development vision from beginning to end – from idea to production, from operation to process, and product optimization.

Being connected to your products opens doors to recurring and value-based revenue streams. It not only solves your customer’s toughest challenges; it also helps build a sustainable future for your company.

Design for Intelligence

Connected product design requires a different mindset. Where should you put sensors to collect data? Does it change your core product design? How will you connect to the internet? Is your connection secure? Reliable? How will you update the firmware? How will the product work in a larger network of assets? How can you leverage machine learning and physics models to further digest your field data, optimize performance, and improve operational efficiency?

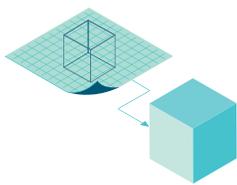
Smart Product Design, Validation, and Optimization

Designing and validating smart products presents unique challenges for engineers. Problems like poor antenna placement, overheating PCB components, and short-lived batteries can sink a product before it even launches. For companies looking to verify their product to be successful in a broad range of environments and use-cases, Altair provides best-in-class simulation and optimization tools for solving problems like electromagnetic wave propagation, thermal analysis, structural optimization, motion analysis and electric motor design. Our tools will give you the confidence to take your product from prototype to production.

[Learn more about Smart Product Development](#)

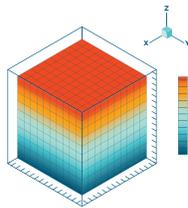


1 Product Design



CAD Studio
Generative Design
Rapid Prototyping

2 Product Engineering



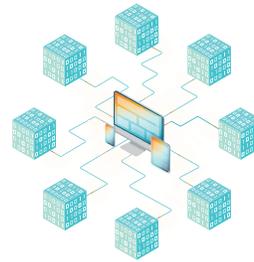
EM Wave Simulation
Electric Motor Simulation
Topology Optimization
PCB Simulation
Manufacturing Simulation
Motion Simulation
MBSE/Multi-physics

3 Embedded Development



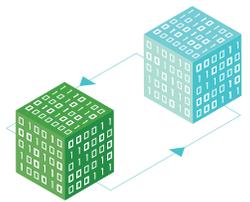
Embedded IDE
Code Generation
HIL Simulation
RTOS
Edge Orchestration

4 Software Development

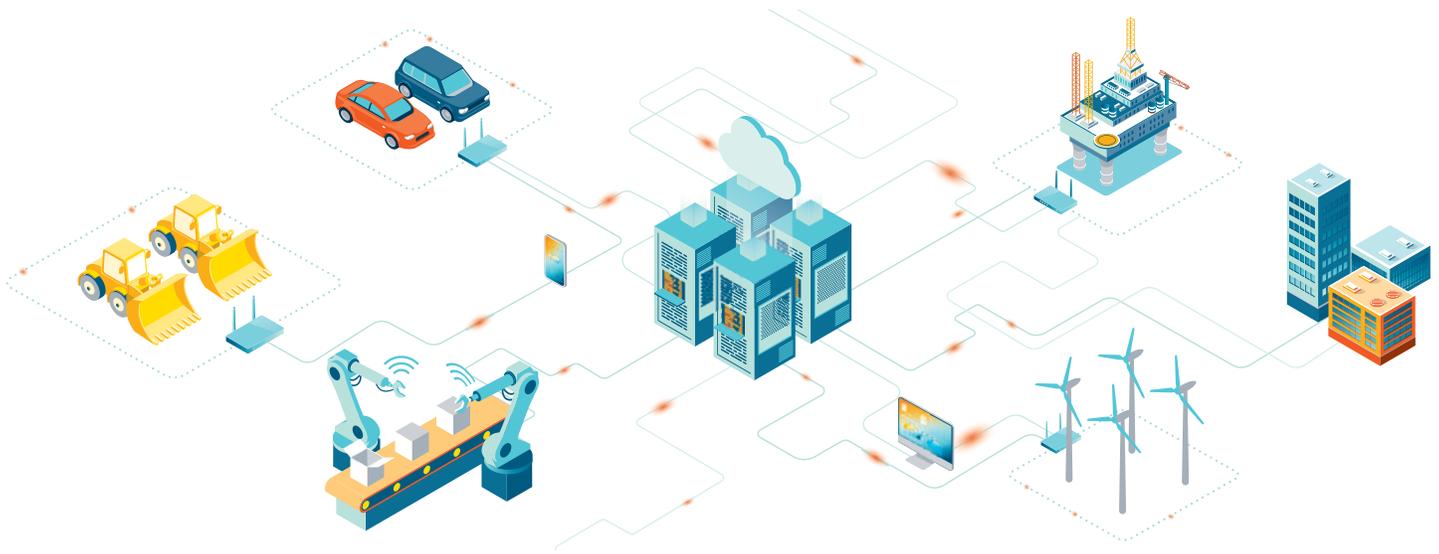


Device Management
Data Storage
Stream Processing
REST API
User Access Control

5 Continuous Improvement



Real-time Dashboards
ML Model Training
ML Pipeline Deployment



Smart Product Development and Integration

While many companies have a connected product vision, few have everything it takes to quickly and securely develop scalable software to move their product from disconnected to connected. For those companies looking to move fast, scale up and stay secure, Altair provides a powerful IoT software development platform - Altair SmartWorks™. This includes reliable and secure device communication technology, edge compute and orchestration platforms, data storage, drag and drop stream processing development, real-time data visualization, and machine learning model training and execution tools.



Real-time Data Visualization

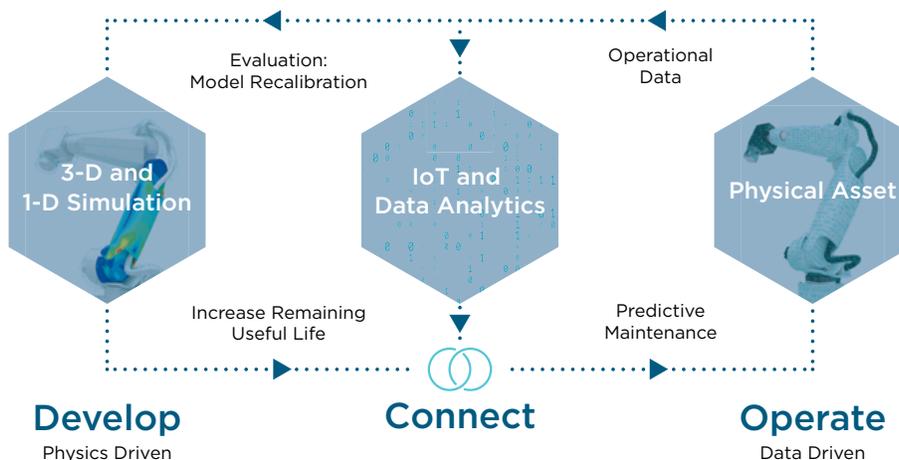
Smart Product Operation and Evolution

Communication with your product in the field provides new opportunities. With a connected product, you can determine and predict maintenance needs, identify efficiency bottlenecks, add new features, and improve performance. Smart Product Development solution from Altair helps you ensure the long term success of your product line by streamlining the hardest parts of optimizing product operation, including machine learning model training and execution for predictive maintenance, block-based firmware development environments, real time data visualization with anomaly detection and monitoring, and much more.

Build Digital Twins

SmartWorks is integrated with Altair's market-leading simulation and data analytics platforms, so you can realize true digital-twin strategies that leverage real-time operational device data. This level of integration ensures you reduce your product development time and lower costs throughout the entire product lifecycle from concept design to in-service operation.

[Learn more about Digital Twin](#)



Altair Smart Products Professional Services

Internet of Things (IoT) projects, and by extension smart product development, need a pragmatic vision to create a solution where different technologies converge along with practical domain expertise to deliver value based on customer centricity and an open architecture.

Designing an innovative or disruptive product is challenging. Next generation design requires the right mix of features to add, delivering a compelling user experience, all the while reducing costs. It can take time, money, and multiple iterations to arrive at that optimal balance. Services can now be enabled by leveraging connectivity towards new recurring revenue models based on access to data, features, or upgrades. If innovation or co-creation is in your agenda, Altair's global services group can partner you in helping you meet your smart product development goals.

Real innovation is all about creating unique value. It doesn't matter if you're focusing on B2B or B2B2C or B2C, in the end your customers are willing to invest in what really solves their toughest challenges, improves their revenue, and/or creates an outstanding experience leading end customer retention. "Why?" is the key question that puts the customer in the centre of all the efforts. It is about understanding your customers leveraging real operational data, allow easy customizations, and improve their user experience; and at Altair we understand that.

The Altair Advantage

A good solution is a result of using the best tools and applying good domain knowledge to address real life business challenges. Altair is the only company with the most comprehensive tool set covering ideation, design, engineering, optimization, connection, operation, and analysis; all available under a unique licensing mechanism. Add to that Altair's over three decades of product development experience and you have your ideal partner in your endeavour to build smarter products.

As organizations pursue digital transformation strategies, some seek the built-in expertise of turnkey platform-as-a-service (PaaS) solutions, while others want the flexibility of highly customizable offerings that adapt to their existing ecosystems. In every case, Altair delivers advanced smart product development solution based on an open-architecture environment to drive continuous product innovation translating your concepts to reality.

Whether you are on your path to digital transformation or a start-up with a new smart product idea – Altair eases your smart product development journey.

To learn more, please visit altair.com/loT



A unique combination of IoT, CAE, and ML



Deep experience in product development



An open, and vendor-agnostic architecture



Flexible Deployment Options



Scalable from day one



Secure from device to cloud



Cost-effective pricing with our patented units model