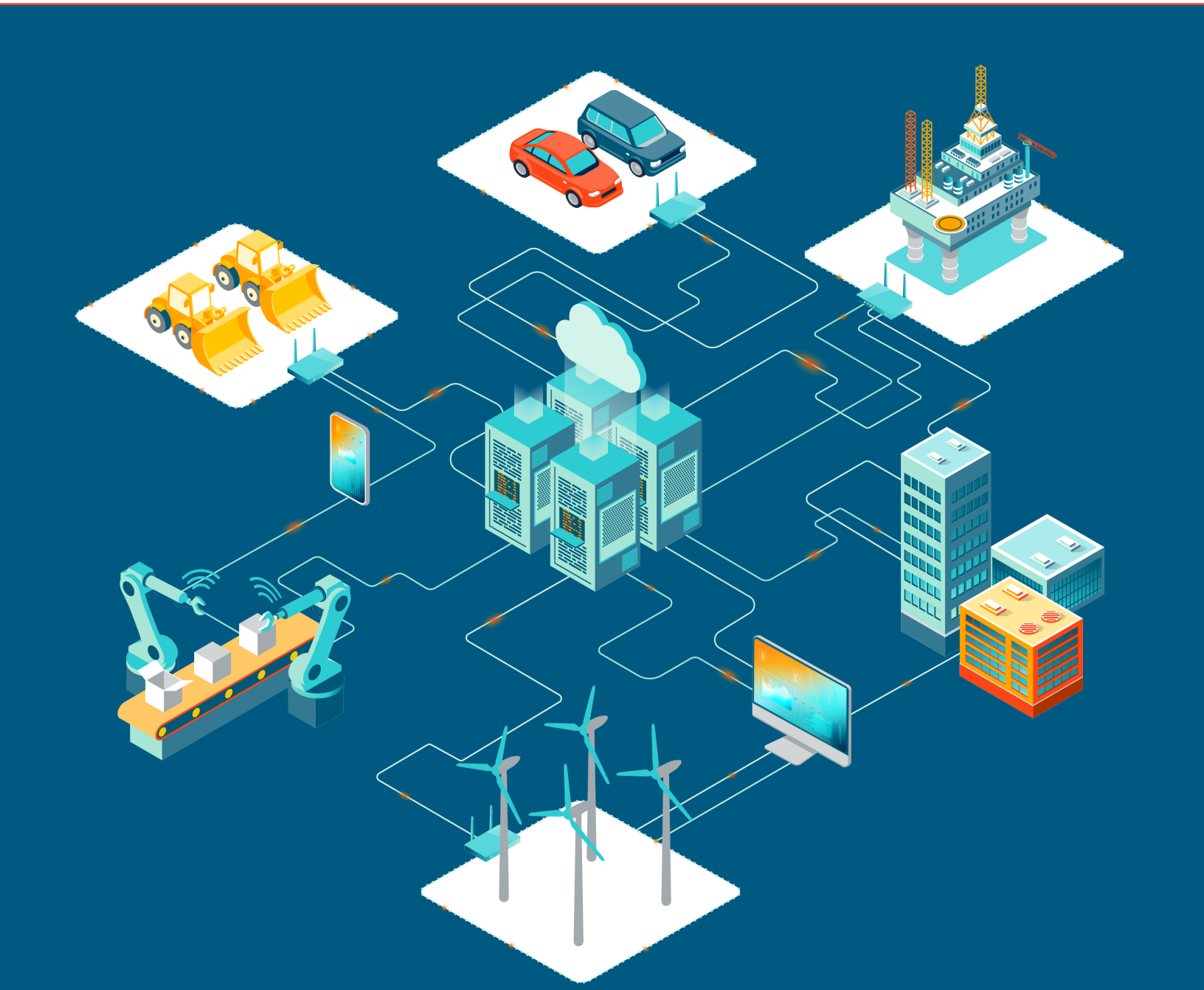
ALTAIR

BEYOND THE BLUEPRINT: A CROSS-INDUSTRY PLAYBOOK TO DIGITAL TWINS



INTRODUCTION

Why the World Cares About Digital Twins (and Why You Should Too)
We're designing the future in a world that's too fast, too complex, and too high stakes for trial and error. Enter the digital twin, a real-time, virtual replica that lets you test, predict, and optimize without touching the physical world.

From reducing emissions to slashing downtime, and from smarter products to self-optimizing systems, leading companies are using digital twins to stay ahead. Digital twins are not just digital models, they're decision-making engines powered by data, simulation, artificial intelligence (AI), and high-performance computing (HPC).

The world cares about digital twins because they're not a nice-to-have, they're becoming the necessary operating system for innovation.

And Altair? We're helping companies build them better. Across industries, product lifecycles, and across the real and virtual divide.

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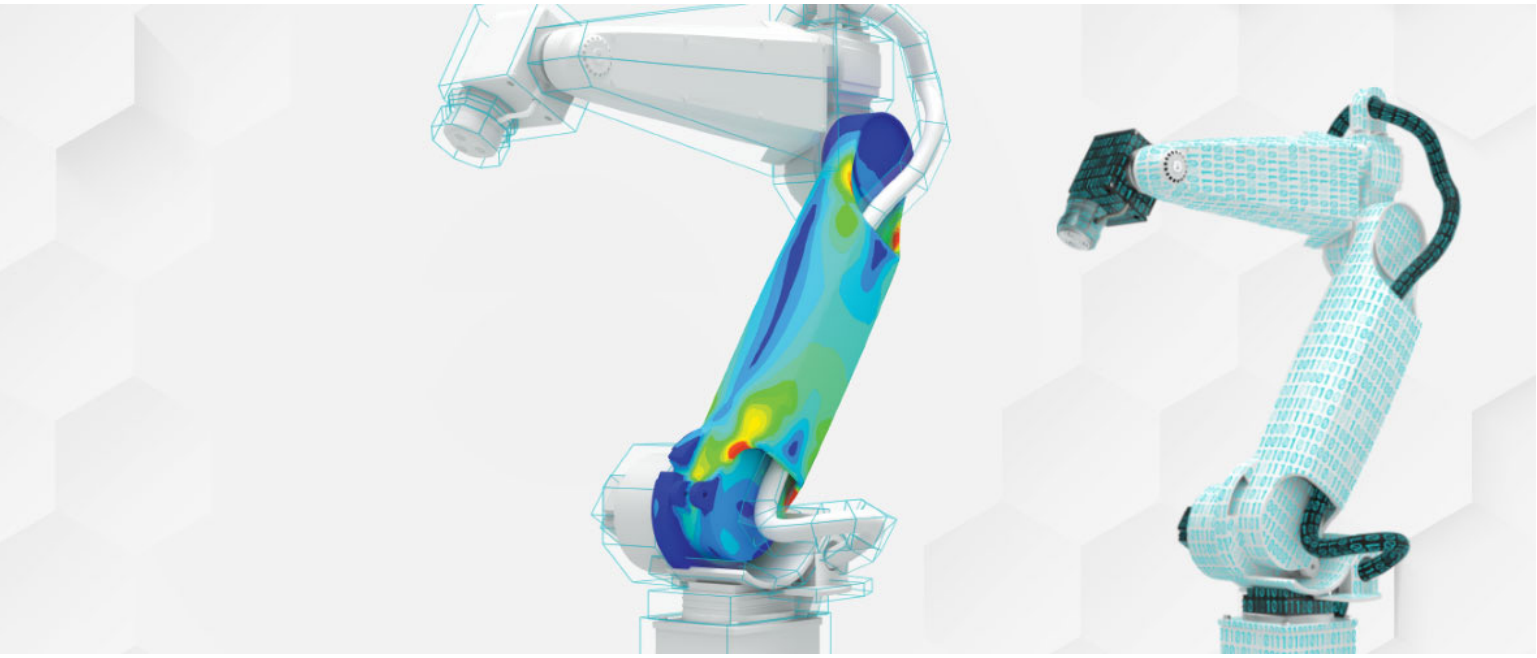


THE PROBLEMS DIGITAL TWINS ARE BUILT TO SOLVE

Digital twins aren't just simulated 3D models — they're strategic tools that solve real business problems. From product design to operations, following are six reasons digital twins are becoming essential across industries — and where they drive the most value.

The Real World Is Too Expensive to Gamble With

- Prototyping is costly. Testing in the real world? Even more.
- Digital twins let you experiment virtually — cheaper, faster, safer.
- It's like a crystal ball for engineering, with less mysticism and more math.

They Close the Loop Between Design and Reality

- Historically, design happens in one silo, operations in another.
- Digital twins unify that — they create a feedback loop between what you imagined and what's happening.
- This results in smarter products that get better over time.

Everything Is Getting More Complex

- Cars are computers on wheels. Planes run on software as much as fuel.
- Complex systems need system-level visibility, simulation, and adaptability.
- Digital twins handle that complexity with data-driven clarity.

They Cut Waste, Time, and Emissions

- Predictive maintenance > fewer breakdowns > less waste.
- Optimized energy systems > lower emissions.
- Streamlined production > less scrap, faster delivery.
- For companies with sustainability goals (aka everyone), digital twins are a power move.

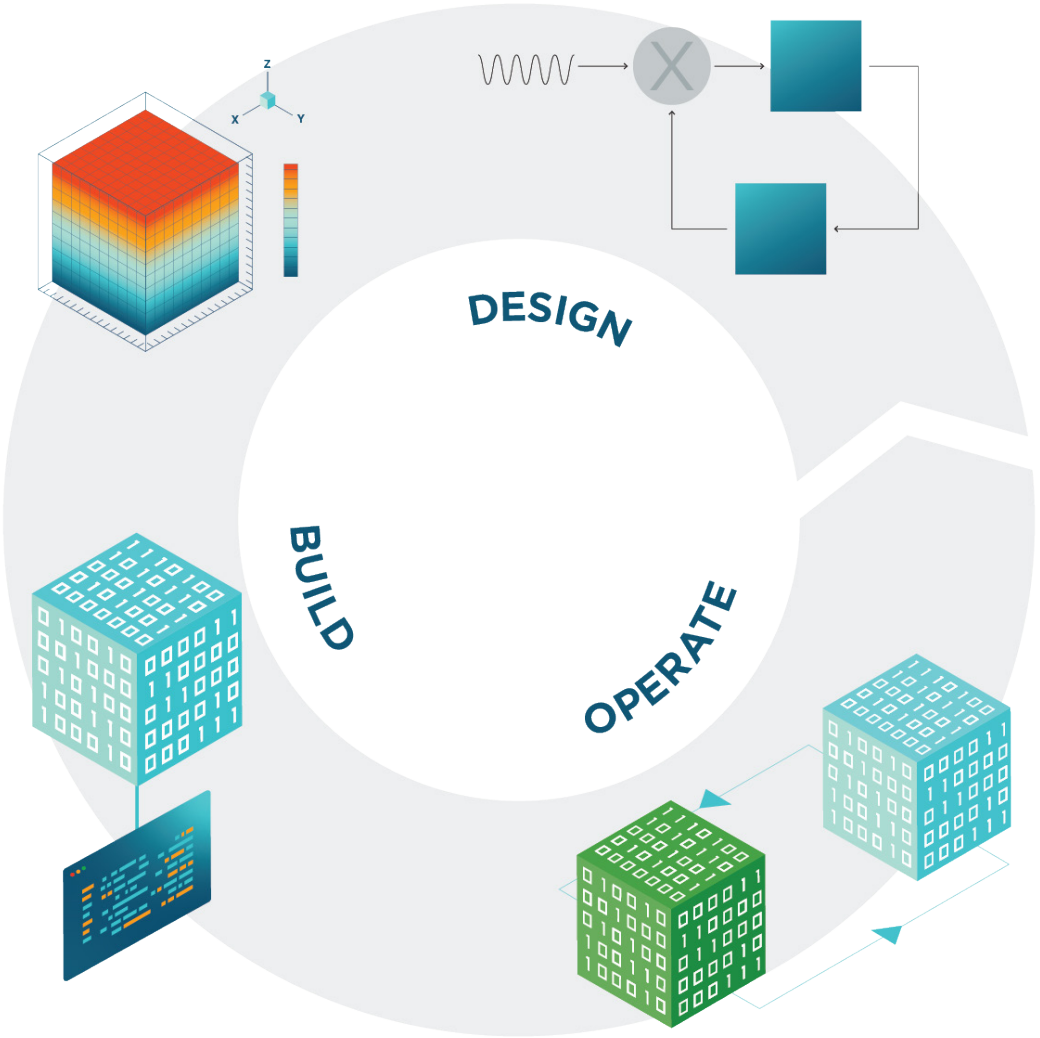
They're the Brains Behind Smart Everything

- Smart factories, smart cities, smart products — they all rely on digital twins.
- The twin is the virtual layer that makes real-time decisions possible.
- The Internet of Things (IoT) provides data; the digital twin gives meaning.

AI and Simulation Need a Place to Live

- AI is only as good as the system it's plugged into.
- Simulation is powerful, but isolated.
- Digital twins bring it all together — real-time data, physics, AI — into a living model you can trust.

The world cares because digital twins are how we tame complexity, reduce risk, speed up innovation, and optimize performance — not just in products, but in entire systems, cities, and industries.



Digital twins bring it all together — real-time data, physics, AI — into a living model you can trust.

7 THINGS TO KNOW BEFORE BUILDING YOUR DIGITAL TWIN

Whether you're designing smarter products, optimizing complex systems, or scaling predictive maintenance, building a digital twin is a game-changer — but only if you do it right. Use this checklist to evaluate your readiness and avoid common mistakes.

1. Start with a Purpose, Not Just a Platform

- What problem are you solving?
- Can it be measured? Improved? Monetized?

Don't build a twin just to check a box. Align it with a real business outcome.

2. Focus on One High-Impact Use Case

- Is there a pain point that's costing you time, money, or reliability?
- Can you get early wins to build momentum?

Twin something meaningful — not everything at once.

3. Get Your Data House in Order

- Do you have access to clean, relevant data (historical or real-time)?
- Can you connect it to simulation, models, or sensors?

Digital twins feed on data. Starve them, and they're just digital dummies.

4. Bridge the Silo Gap

- Are engineering, IT, operations, and data teams aligned?
- Do your tools actually talk to each other?

Your twin needs to live across functions, not get stuck in one department.

5. Make It Scalable from Day One

- Can your twin grow from a pilot project to production?
- Does your platform support multiple assets, systems, or locations?

The goal isn't a cool PoC — it's a scalable system that delivers ROI.

6. Look for Interoperability, Not Lock-In

- Can your tools integrate with what you already use (CAD, PLM, IoT, AI platforms)?
- Is the tech open and flexible?

Altair's superpower: tools that play nice with others.

7. Plan for the People Side

- Does your team have the right mix of skills (simulation, data science, system modeling)?
- Who will own the twin long-term?

No twin works without human champions behind it. You're ready to twin if...

- You've got a real problem to solve
- You know where to start
- You've got (or can get) the right data + people
- You're thinking big but starting focused

DIGITAL TWINS IN ACTION: 9 USE CASES THAT MATTER

1

DIGITAL TWIN FOR DURABILITY – HOW TO SCHEDULE MAINTENANCE THE SMART WAY

Nearly a quarter of today's digital twin applications focus on the nuts and bolts of maintenance. Why? Because digital twins facilitate the transformative leap from preventative to predictive. That means:

- No more replacing components with plenty of useful life left in them
- No more expensive scheduled maintenance on assets that are in perfect health
- Dramatic reductions in the risk of costly breakdowns and unscheduled downtime

Powered by a continuous flow of sensor data, digital twins provide hyper-precise, real-time insight into what needs attention – and when. Your maintenance program is guided by data-driven and AI-enabled predictions, not outdated and inflexible schedules, gut instinct, or 'this is how we've always done it.'

Why?

Digital twins help you answer the two questions that *really* matter:

- What's the remaining useful life (RUL)?
- What's the state of health (SoH)?

And here's how the benefits stack-up:

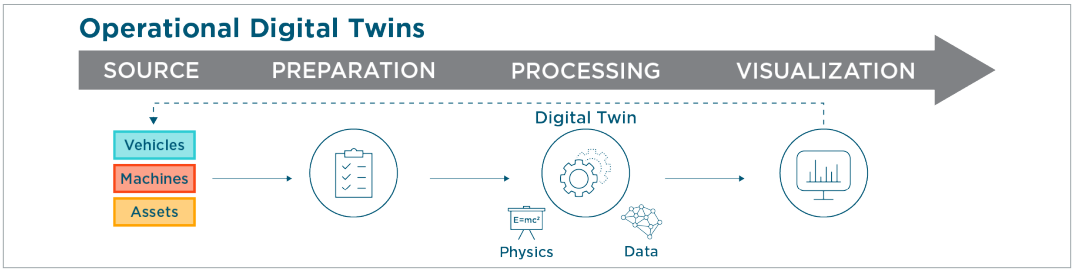
- Enhanced safety
- Reduced downtime and associated costs
- Extended system lifespan
- 'Goldilocks' maintenance interventions – not too early, not too late
- Root cause analysis – escape the doom loop of making the same fixes, over and over
- Enhanced reliability

Integration is the Key to Success

For digital twins to make good on their promises, think built-in, not bolted-on. Success lies not just in seeing the bigger picture, but being part of it:

- **Source** – data may arrive in multiple formats
- **Preparation** – data is cleaned and prepped prior to processing
- **Processing** – the digital twin gets to work
- **Visualization** – insights become clear, accessible, and actionable

Altair's superpower? We offer tools for every stage of that journey.



Digital Twins in the Real World

Nuclear power plant

Aims:

- Maximize asset integrity
- Monitor structural health
- Extend asset life

How's it done?

Digital twins provide real-time SoH monitoring for various components at the plant.

What makes it interesting?

Altair's solution extends component lifespan while minimizing disruption to existing workflows. An open architecture connects operational data to existing models. Virtual gauges track indicators – like fatigue – that cannot be instrumented. An IoT backbone integrates data storage, API exposure, and automated actions.

Lufthansa, Germany

Aims:

- Predict component failure in a fleet of 1,000+ aircraft
- Reduce downtime and unplanned maintenance
- Optimize service crew schedules to ensure best use of available talent and resources

What makes it interesting?

The aircraft fleet's sensors generate hundreds of thousands of log entries. Using Altair® RapidMiner®, a powerful data analytics and AI platform, the airline developed models to predict maintenance requirements and pinpoint root causes of failures.

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What was achieved?

Total downtime was cut by 20% within the first two months.

2

DIGITAL TWIN FOR OPERATIONS – HOW TO ENABLE INTELLIGENT OPERATIONS

In manufacturing, success comes down to designing better products and building them more efficiently than the competition.

This sounds simple. However in practice, the challenges have never been more complex.

That's why so many enterprises are turning to digital twins – and not just for the design side of the equation. There are equally compelling reasons to use digital twins to enable intelligent manufacturing operations, with outcomes that include lower material and energy costs, less downtime, more consistent product quality, and faster throughput.

We've already stressed the importance of breaking down silos and integrating digital twins into broader workflows. But it bears repeating. In many intelligent operations, optimization starts in the design and development phase but does not have to end there. Increasingly, we see that physics-driven digital twins not only enable better product design but also support data-driven digital twins that help to build better products too.

Digital Twins in the Real World: Sheet Metal Forming

Let's look at a real-life example of how digital twins are transforming a sheet metal forming operation. Here, Altair's customer was facing all-too-familiar issues:

- **Excessive machine downtime** – Every time a new sheet metal coil was started, it took up to a day to modify and recalculate machine parameters to reflect characteristics such as sheet thickness. With only a limited number of pressing machines available, the costs of downtime were punitive.
- **Declining product quality** – Over time, production runs were experiencing increasing scrappage rates, due to shortfalls in quality. This charged additional time and cost to the manufacturing ledger.

Altair's solution is built around two digital twins, each with a different role.

- One is focused on what's happening during manufacturing and is driven by data from production line sensors such as thermal cameras and accelerometers.
- The second digital twin is a physics-driven design tool, enabling multi-stage virtual simulation of the stamping process.

The really clever bit is how the two are tied together to identify and share the real-time insight needed to minimize downtime and address quality issues.

Fourteen KPIs that predict the appropriate corrective actions needed to maintain product quality or start a new coil are extracted from the digital twin that supports design. Crucially, this process is enabled by Altair® romAI™, an AI-powered technology that leverages reduced order modeling to speed complex simulations. At the same time, the digital twin linked to the manufacturing operation leverages the real-time data harvested by sensors to reveal how those KPIs are changing during the production cycle.

romAI's output is then translated into actionable, predictive analytics, which is shared with workers on the shop floor via intuitive and accessible dashboards.

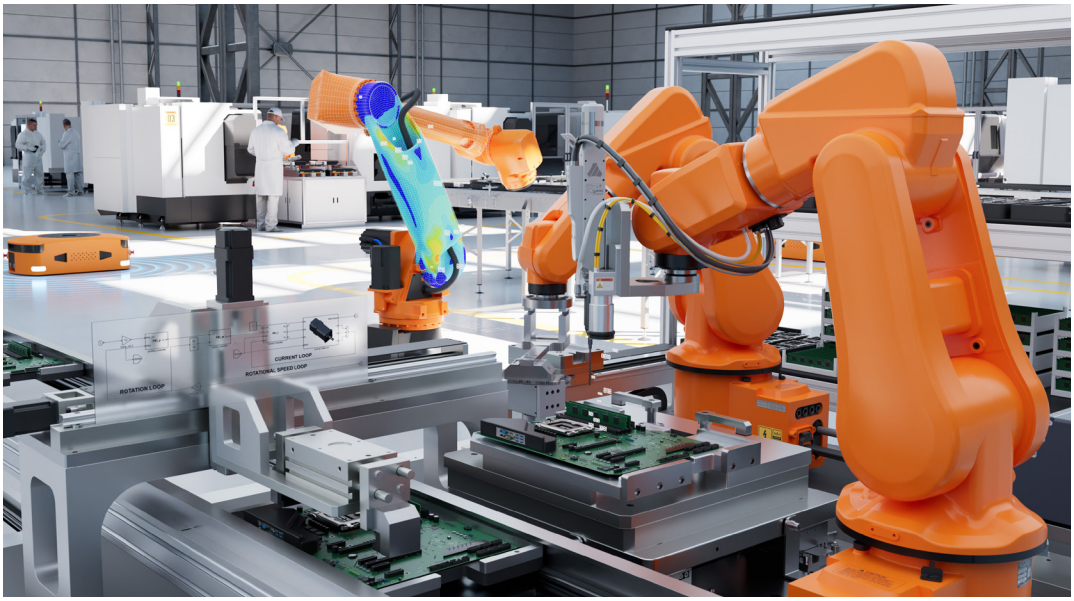
How do the outcomes measure up?

Altair's end-to-end solution provides real-time answers for two of the customer's most mission-critical questions:

- How do we address deteriorating quality?
- What are the correct parameters for each new coil?

Results

- Scrappage rates are reduced by 15%
- Parameters for new coils are generated in minutes, not hours



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DIGITAL TWIN FOR THERMAL BATTERY MANAGEMENT – HOW TO EXTEND THE RANGE OF ELECTRIC VEHICLES (EVS)

Product design and development has always been a juggling act. Success is all about finding the right balance between multiple – and often conflicting – objectives.

Today, those circus skills are being pushed to the limit. Many design and development teams work in complex, multi-physics and multi-domain environments. Keeping all the balls in the air (and still managing to smile) has never been tougher.

The EV battery is a perfect example of the new reality.

Fortunately, it's also a textbook case of how digital twins can make sense of complexity and deliver dramatically better outcomes.

Digital Twins in the Real World: Thermal Management in EV Batteries

A recent collaboration between Altair and a leading battery manufacturer highlights the possibilities. Here, a digital twin supports a new prototype battery pack, with particular focus on improving performance through better thermal management.

There's no shortage of challenges:

- Space and weight constraints
- Limited cooling capability
- The wide range of battery and vehicle operating conditions
- Battery lifetime and safety issues – including overheating

And that's just the starting point. Every EV battery application brings an array of structural, electrical, fluid and control issues, not to mention the equally diverse influences on overall vehicle performance.

Bringing it all together: digital twins help designers see the bigger picture

A system-level approach is essential for understanding all the interdependencies at work here – within the cells and pack, and between the battery and the wider design – as well as modeling ultimate goals such as vehicle range.

Reflecting this, Altair's digital twin encompasses an extensive set of properties for the pack's 21,700 cells, housing, busbars, wire bonds, cooling plates, and even the connected printed circuit board (PCB) that runs the battery management system.

A thermal imaging camera on the physical battery shows the cells and busbar's surface temperature. Meanwhile, the digital twin delivers more accurate temperatures for the inner cells and models dynamic electric current demand from the powertrain.

Using this combination of virtual and real-world capabilities, the team designed and optimized a cooling pump to keep cell temperatures within the acceptable range. When the temperature hits one threshold, the pump turns on. Hit a higher threshold? The pump switches to a higher level too.

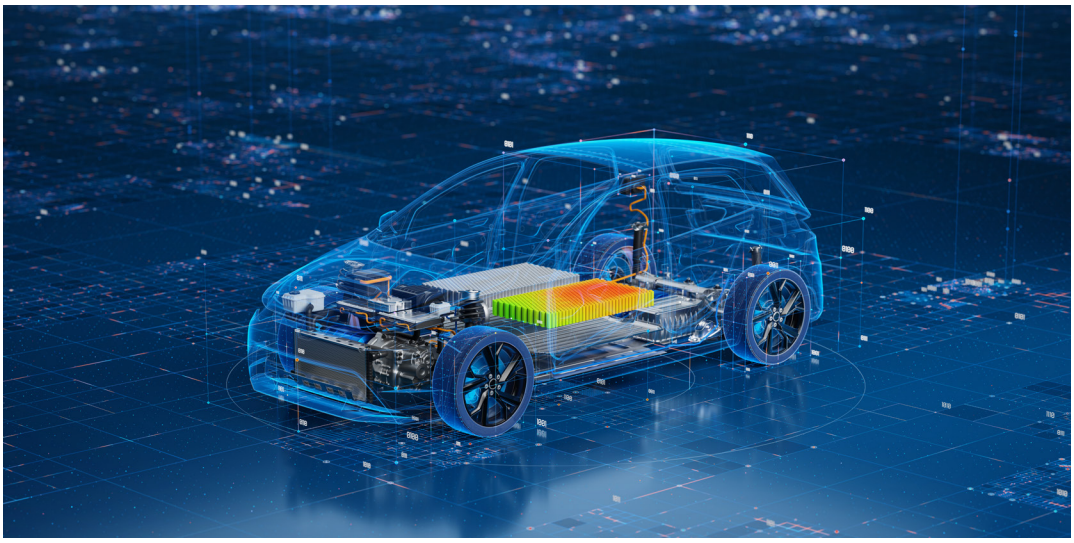
Results

- By optimizing control and design parameters, the team achieved a 60% reduction in the time that the cooling pump needed to operate to keep the cells' temperature below an acceptable maximum.
- Because the pump itself is powered by the battery, that roughly translates to a five mile increase in the EV's range.

In a design environment focused on incremental gains, that's no small win. And of course, thermal management is just one piece of the battery development puzzle. Digital twins unlock predictive analytics across the board, offering huge opportunities in areas that include:

- Building space and weight
- Vehicle range and usability
- Battery lifetime
- Vehicle safety
- System complexity

Why stop there? The entire EV battery product lifecycle is complex. That's why digital twins will increasingly be used at every stage: modeling supply chains and raw material procurement, production, monitoring battery health and performance in the field, and much more.



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DIGITAL TWIN FOR MULTI-PHYSICS SYSTEMS – HOW TO VERIFY AND OPTIMIZE PERFORMANCE AT THE OVERALL PRODUCT LEVEL

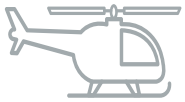
By most accounts, Aristotle never actually said, "The whole is greater than the sum of its parts." And even if he did, we're pretty sure he wasn't predicting the age of multi-physics design or the rise of the digital twin.

Still, a nugget of wisdom that might (or might not) be over 2,000 years old continues to ring true for many of today's design and development teams. Why? Because an ever-growing number of enterprises are now wrestling with complex combinations of different physics – extending across equally diverse systems and sub-systems.

Specifically, design and development leaders are looking to address three critical challenges:

- Breaking down silos between teams and workflows
- Frontloading development by leveraging data and virtualizing tests
- Optimizing system performance in operations through the convergence of simulation and data.

Increasingly, digital twins are providing the answers, enabling multiple domains to be combined at system level. A recent collaboration between Altair and Leonardo, a leading aerospace, defense, and security company, shows the real-world possibilities.



Digital Twins in the Real World: Optimizing Antenna Design in Helicopters

Their Challenge

Leonardo set out to correct helicopter radar transmission loss caused by in-flight vibration to the radome and antenna. Inevitably, physically measuring the radome deformation and tracking the electromagnetic behaviors during flight was simply not an option.

Our Solution

Leonardo and Altair developed a digital twin that predicts the antenna behavior and optimizes its design to meet Leonardo's mission requirements.

The digital twin covers multiple physics domains and simulations, powered by a suite of Altair tools and technologies. Key elements include:

- Structural simulations that predict how vibration impacts the deformation of the antenna
- Deformation data is fed into a 3D high-fidelity electromagnetic model to show the impact of the antenna deformation on the radiation pattern
- romAI, Altair's AI-driven reduced order modeling solution, is applied for high fidelity electromagnetic simulation, speeding the process while maintaining the accuracy required
- A 1D simulation environment enables the antenna's radiation pattern KPIs to be calculated

Altair has also integrated a series of dedicated design tools, creating a truly holistic solution that combines switchable, purpose-driven modeling fidelity (3D, 1D and 0D) within the same workflow.

Results

- Turnaround times are dramatically reduced
- Information siloes are dismantled

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MAKING VIRTUAL SIMULATIONS MORE EFFICIENT AND ACCURATE WITH THE USE OF ARTIFICIAL INTELLIGENCE

Sometimes the numbers speak for themselves.

Here's the bottom line: in a recent digital twin use case that slashes the need for physical testing of agricultural and construction equipment, Altair's AI-powered reduced order modeling (ROM) solution ran a simulation **18,000 times faster** than the equivalent high-fidelity model.

That's not a typo.

Using a high-fidelity model, the simulation takes ten hours. With Altair romAI, it's just two seconds. And the accuracy is comparable with the high-fidelity version.

It's yet another example of how Altair is helping real-world design teams achieve much more, much faster.

Digital Twins in the Real World: Simulation for Agricultural and Construction Machines

Their Challenge

Replacing time-consuming and resource-intensive physical tests with lightning-fast and accurate simulation for:

- Structural validation
- Multibody analysis
- Dynamic analysis
- Durability analysis

Our Solution

A powerful and highly integrated suite of Altair tools, each playing a key role:

- Altair® HyperMesh® – for preprocessing
- Altair® OptiStruct® – for structural analysis
- Altair® MotionSolve® – for multibody analysis
- nCode DesignLife – for durability analysis
- Altair® EDEM™ – for soil modeling
- Altair® Twin Activate® + romAI – for the digital twin and AI-powered ROM

These tools work together to simulate complex but common effects such as how agricultural and construction machines interact with soil. In one case, the operation of a loader picking up and depositing soil is modeled to predict working life virtually rather than physically. In another, Altair's tools model a tractor ploughing, accurately capturing the interaction between plough and soil – and delivering a 5% improvement in plough depth.

In both cases, the key lies in blending real world data with high fidelity models. Then training a reduced order model to capture the behavior with romAI turbocharging the process of delivering better design outcomes.

To Learn More:
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6

LEVERAGING DIGITAL TWINS TO OPTIMIZE PRODUCT DESIGN AND OPERATION AND PROGNOSTIC STRATEGIES

Digital Twins in the Real World: Safety Systems in Helicopters

Sometimes, design really is a matter of life and death. That's definitely the case with Leonardo's next-generation Laser Obstacle Detecting System, developed for use in the company's world-class helicopters. Working like a laser-based radar, the system provides in-flight early warning of obstacles such as cables as small as 5mm in diameter.

Leonardo's mission-critical technology is seriously impressive, constantly gathering information from the surrounding environment and processing it in real time to identify and classify obstacles and issue timely warnings. Several high-performance mechatronic systems, along with a high-performance control system, are needed to deliver exceptional levels of precision and reactivity.

Their Challenge

In further developing the Laser Obstacle Detecting System, Leonardo faced significant design challenges, encompassing a wide range of physics. Key issues included sizing the laser window and optimizing protection against external agents such as hail and bird strikes. Another critical requirement is continually balancing the electro-mechanical system that supports the laser.

Our Solution

Leonardo created a holistic, all-encompassing digital twin that truly embraces multiple physics: 3D, 1D, and 0D. All the models run simultaneously, with machine learning (ML) and data intelligence ultimately applied to a ROM to optimize the control system.

Results

In Leonardo's own words: **"By using an accurate mechatronic digital twin, we can easily optimize the control system performance and evaluate design sensitivities while reducing physical prototyping systems, ready to develop New Generation Obstacle Warning Systems."**

Why Digital Twins?

The digital twin is central to Leonardo's digitalization journey, delivering compelling benefits in some of the world's most demanding technology sectors:

- **Managing risks by handling complexity:** optimizing smart product performance holistically
- **Accelerating time to market:** streamlining teamwork, breaking down siloes between disciplines, and exploring more designs
- **Reducing development costs:** replacing physical prototypes and giving engineering teams affordable access to the tools they need.

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DIGITAL TWINS FOR ORAL SOLID DOSE (OSD) MANUFACTURING PROCESSES – DEVELOPMENT AND DEPLOYMENT

Rather than tell you how digital twins can deliver a step change for OSD manufacturing blending processes, we will show you. It is not just a use case – it's a walkthrough of how Altair's tools can go far beyond conventional perceptions of the digital twin.

Specifically, we're giving you a step-by-step introduction to game-changing concepts including the AI twin, created from synthetic rather than real-world data. Also, the connected twin, which brings everything together in a holistic, data-driven, real-time environment. That means HPC, data storage, AI twins and dashboard all work seamlessly to integrate real-world and virtual data, manufacturing processes, and people.

Altair's building blocks for this approach include EDEM, which uses the discrete element method to simulate behavior of particulate materials at the particle level – perfect for blending processes. As you'll see, the interface and terminology are all familiar and intuitive to professionals working in OSD.

Our no-code, AI-powered technology, romAI, also plays a starring role. We demonstrate how it delivers results fully comparable to conventional simulation – **only in seconds, not minutes or hours.** And that's not just for predicting operational parameters such as bulk solid mass, angle of twist, and rotational velocity, but also for all-important rheological properties.

But don't take our word for it. See for yourself.

To Learn More:
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8

DIGITAL TWIN FOR SUSTAINABLE ENERGY

Digital Twin for Sustainable Energy

Why a digital twin? Because in the complex world of fusion energy, reality rarely matches the original plan.

Digital Twins in the Real World: Fusion Power Plants

About the Customer

Assystem, an international engineering and digital services group focused on low-carbon projects that accelerate the transition to clean energy.

Their Challenge

Assystem wanted to develop a physics-based twin for the United Kingdom Energy Authority's in-operation fusion power plants. These plants rely on complex simulation models during the design assessment phase. Inspection and maintenance schedules, and the total working life of the plant, are based on the expected loading in the 'as-designed' model, taking into account significant risk factors.

But guess what? In the real world, the loads may differ. That means there's considerable potential to either improve a plant's lifetime value or quantify the impact of higher-than-expected usage.

Our Solution

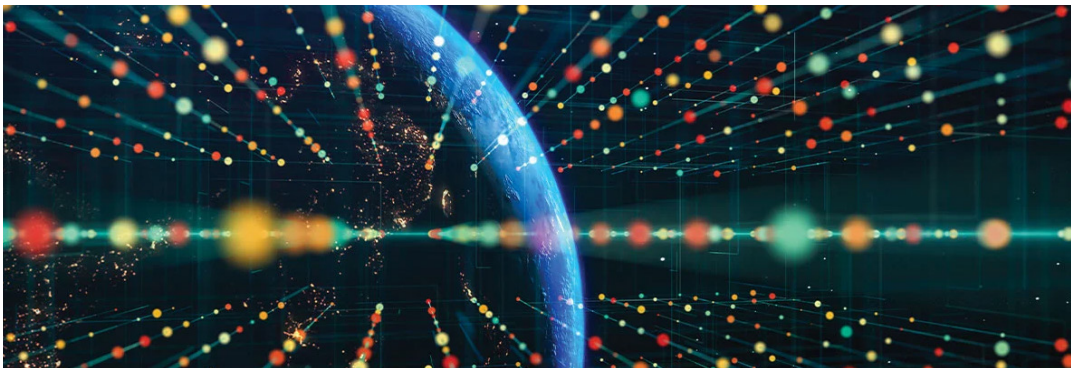
Assystem leveraged their valuable design models to build a digital twin that uses real-time sensor data from the plant. What's more, the simulation models employed can either be the original full fidelity versions or converted via ROMs or functional mock-up units (FMV). In addition, virtual sensors provide variables that simply cannot be physically measured in real systems.

The digital twin is built around two Altair tools:

- **Altair® IoT Studio™** – for the IoT backbone
- **Altair® Panopticon™** – for visualization

Results

- Engineers can make better decisions regarding support on fatigue damage
- Helps calculate RUL
- Improved efficiency and maintenance schedules
- Higher return on investment from Assystem's original design models



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9

DEVELOPING SUSTAINABILITY WITH AI

How do you get a more sustainable clothes wash without compromising cleaning performance? For Mabe, Altair romAI helps provide the answers.

Digital Twins in the Real World: Consumer Electronics

About the Customer

Mabe, a Mexican company, is a leader in white goods in America and has a presence in 70 countries worldwide. With 20,000 employees and 18 manufacturing sites, Mabe sells 13 million products every year.

Their Challenge

Mabe is committed to reducing the environmental footprint of its products. In the company's clothes care range, that means saving water and energy. Reflecting this, the company already offers washing machines that cut water use by 76% and energy consumption by 55% compared to traditional models.

But sustainability is no easy win. Alongside energy and water savings, Mabe still needs to maintain outstanding wash, rinse, and wear performance.

Our Solution

Mabe uses Altair romAI to tackle the complex challenge of putting sustainability at the heart of its products. Engineers feed their existing test and simulation data into romAI to build models that offer near real-time, dynamic results. As a result, many more iterations, 'what ifs,' and optimizations are possible.

For washing machines, the focus is on the key factors driving energy and water use. For example, identifying the best possible spin cycle for a given load. The more water that's extracted from clothes during the spin cycle, the less energy is needed to complete the dry cycle. However, different loads have different optimum spin cycles. Altair romAI makes it much easier for Mabe to identify the right answer, every time.

The story doesn't end with simulation and optimization. With romAI's code generate and export functions, models can be turned directly into C code – ready to be deployed in the washing machine's embedded control unit. That means more intelligence and improved sustainability, exactly where they are needed most.

Results

- Maximizes the value of historical data
- Enables both static and dynamic non-linear models to solve a wider range of problems
- No coding required! Engineers can focus on creating and tuning models, not learning to program.

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WHY CHOOSE ALTAIR AS YOUR DIGITAL TWIN PARTNER?

At the beginning of this eGuide, we said the digital twin is far more than a simulated 3D model.

Hopefully, the diverse array of use cases we've shared here demonstrate that simple truth – and how the digital twin has evolved into a truly strategic tool. Across countless industries, enterprises are embedding digital twins at the heart of their transformative digitalization roadmaps.

Reinventing Products, Systems, and Processes

Digital twins are empowering organizations to reinvent their products, systems, and processes. How? By giving people the freedom to collaborate like never before – helping teams make smarter decisions and focus their energy on creating and fine tuning, not reinventing the wheel, learning to code, or waiting around while models run.

But to make this a reality, your technology must match the vision.

At Altair, we combine best-in-class simulation, HPC, AI, data analytics, and IoT backbones. That means multi-disciplinary teams can use our digital twin technology to design, build, test, optimize, and explore many more what-if scenarios, perform predictive maintenance, and extend RUL.

And with Altair, you can do all of this with unprecedented efficiency. Our digital twin solutions routinely reduce or eliminate the need for expensive and time-consuming physical prototyping. In many cases, they also simulate behaviors that simply cannot be measured in real life.

Making Sense of Complexity

In a world more complex than ever, Altair's portfolio supports new approaches to connected capabilities and smart product development. By leveraging cross-functional and multi-physics evaluation, organizations can break down information siloes and communication bottlenecks. Everyone can work on the same models, in the same place.

Forget the idea that digital twins are purely for design and development. With Altair, they can be deployed at every stage of the cycle – from pre-production conceptual design through to in-service performance.

Flexible, Open, Connected

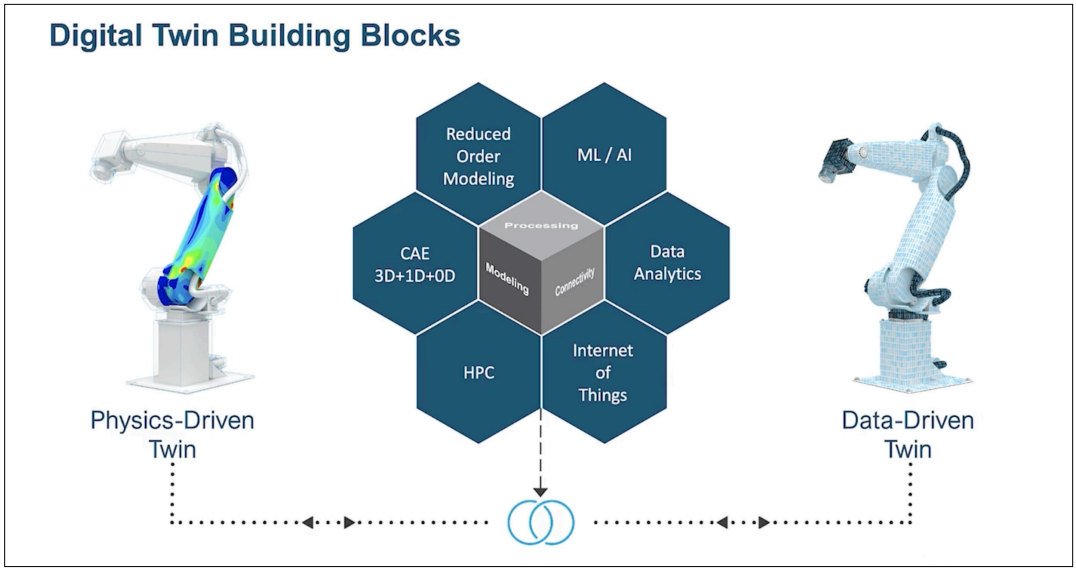
Getting started couldn't be more straightforward. Our digital twin philosophy is all about being flexible, open, and connected. That's why agile and vendor-agnostic software sits at the core of Altair's digital twin integration platform, executing and connecting models to both real-world and simulated data in real time. Developers have all the building blocks they need to start fast, scale efficiently, and evolve effortlessly over time.

The Fastest Route to Productivity

For users, our low-code/no-code tools ensure an equally swift and smooth journey to productivity.

Finally, when you work with Altair, you're working with engineers who share your ambitions and understand your challenges. Which means we love talking about the boundless possibilities of digital twins.

To learn more, visit altair.com/digital-twin.



Contact us at:
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Altair is a global leader in computational intelligence that provides software and cloud solutions in simulation, high-performance computing (HPC), data analytics and AI. Altair enables organizations across all industries to compete more effectively and drive smarter decisions in an increasingly connected world – all while creating a greener, more sustainable future.

To learn more, please visit www.altair.com