



Improving outcomes by creating a Digital Twin

Digital engineering and Emulate 3D



Moving beyond design to “Digital Engineering”

Today’s smart factories and infrastructures require integrating numerous systems: from electrical, mechanical and software, to the networks in between. A change to one part of the chain can impact another.

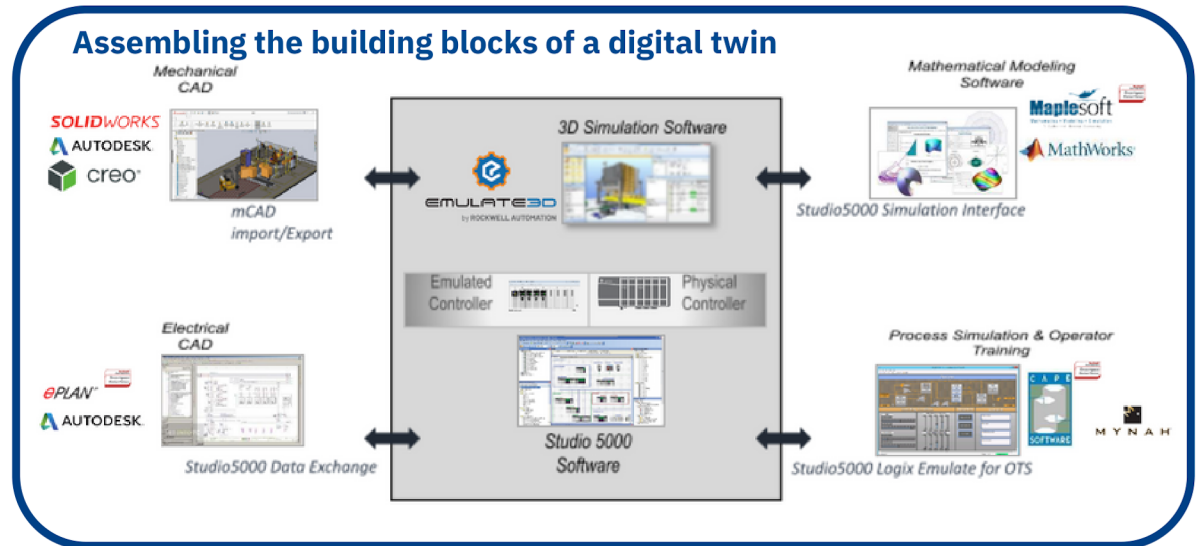
Testing and modelling need to extend beyond a single element of change; they must capture today’s reality of systems within systems.

At Actemium Automation, we bring all the elements together by using **model-based digital engineering** to create a **digital twin** of your system or process.

We aim to achieve four outcomes that can have dramatic affects on projects:

- throughput analysis,
- machine prototyping,
- virtual commissioning, and
- operator training.

We apply the values of each to mitigate risk in your projects.



Simulate and improve your operations

Imagine being able to use real-world data to test solutions for making manufacturing and process improvements, without interfering with your actual operations. Or perhaps you’re hoping to train your operators in advance of a new system install so they can operate and be ready to troubleshoot as soon as your new machine or process is in place.

At Actemium Automation, we make this possible. We’re leaders in providing digital twins — **computer programs using real world data to create simulation models of your current process or prototype** in order to predict how it will perform under different conditions.

Benefits of using a digital twin



Operational risk reduction

Using a digital twin reduces the risks associated with implementing/validating a new process or modifying an existing one by helping to identify and reduce operational errors before you implement that process.

Eliminating operational errors early through digital twin modelling ensures that you don't incur significant material, energy or labour costs, while it also simultaneously enhances employee safety and operational confidence.

Enhanced training capabilities



You can use the model as a training tool that mimics actual systems, including fault simulation. Training can occur in a safe environment protecting both the actual system and the operator.

Training can even be managed remotely, with the trainer controlling all aspects of the simulation.

Lower costs and downtime

Testing can be done offline and in parallel with ongoing operations. This saves you money and recourses by reducing or even eliminating production downtime.

Analysing new or modified production processes with a digital twin can also help you to lower costs by allowing for fewer prototypes to be needed.

Flexible scenario testing

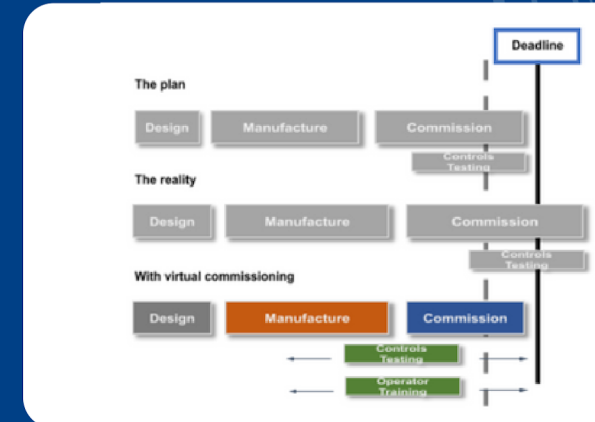
With a digital twin, you have the flexibility to test various scenarios without suffering additional costs or induced downtimes.

You have the freedom to simulate everything from the impact of minor or significant system design changes, to stress testing the performance of machinery or overall operational limitations.

Faster production start-ups

Meet key deadlines faster with a digital twin.

Simulations of new or existing processes allows for flexible and integrated collaboration between design and manufacturing, enabling you to have faster start-ups of key processes and capabilities.



Throughput Analysis

Optimise throughput with real-time 3D simulation of dynamic processes



Machine Prototyping

Easily design and build next-generation machines with confidence



Virtual Commissioning

Design, test, validate and commission machines before they go into service



Operator Training Systems

Reduce risk by training your workforce in a safe, virtual environment

About Actemium UK

Actemium has multiple centres of excellence spread across the UK, each empowered to operate with autonomy.

With an embedded culture of transparency and encouragement to think like our customers, we deliver safe, reliable and sustainable projects through our incredible people.

We exist to help you improve your performance and competitive advantage.

Trained, studied and practiced

At Actemium UK, we deliver a broad portfolio of innovative and competitive products and solutions, addressing the issues raised by your operational, technological and environmental changes.



Automation Design Electrical Mechanical Renewables



Let's discuss how you can benefit from digital twinning. Contact us today!

