

# Software Defined Automation

Faster deployment
Lower risk
Built for change

WMG
THE UNIVERSITY OF WARWICK

## Transform how your industrial automation systems are engineered, commissioned and operated

Rising complexity, slow deployment, skills gaps and costly late-stage fixes are holding your automation projects back.

Developed by the Automation Systems Group (ASG) at WMG, a Software Defined Automation (SDA) platform replaces rigid engineering with a model-based, data-driven, lifecycle approach.
Systems are designed, validated, commissioned, and optimised digitally, before deployment and throughout their operation.

**The result: faster deployment, lower risk and lower cost.**

## Delivering value

**1 Design and validate digitally**
- Build systems with reusable kinematic and sequence logic
- Validate designs early with digital twin simulation

**2 Commission virtually**
- Auto-generate PLC and controller software
- Test real control code against the digital twin

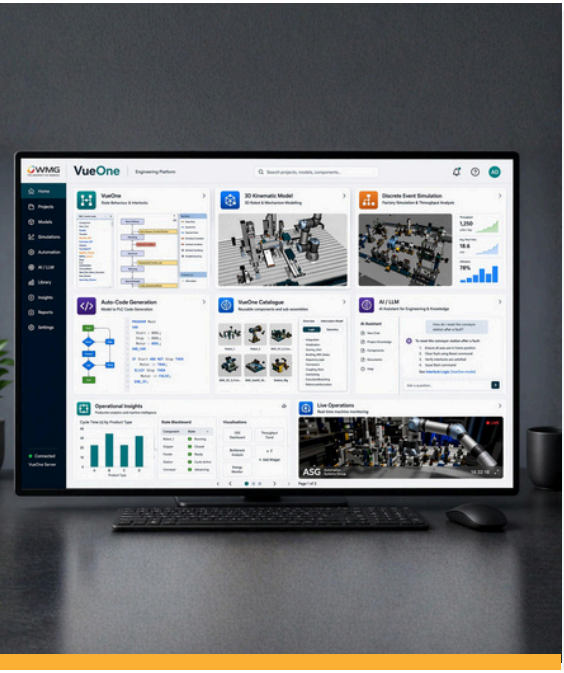
**3 Deploy with confidence**
- Transition seamlessly from virtual models to physical equipment
- Capture operational data for traceability, monitoring and optimisation

**4 Gain deeper insight**
- AI/LLM support from design to operation
- Diagnose issues and optimise performance faster

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## What this means for you

- Lower engineering and commissioning costs
- Faster time to beneficial operation
- Minimised downtime for troubleshooting and changes
- Reduced technical and commercial risk
- Greater flexibility through support for traditional (IEC 61131) or distributed control (IEC 61499) architectures




## The SDA engineering platform

SDA is delivered using ASG's VueOne engineering tools, an associated kinematic model and other tools such as discrete event simulation (DES).

**Key capabilities include:**

- Integrated tools across the engineering lifecycle
- Reusable software components
- State-based behaviour modelling
- Automated code generation
- AI/LLM support from design to operation
- IEC 61499 multi-vendor distributed control (using Schneider EcoStruxure Automation Expert & UAO runtime)

# Take the next step

SDA has been industrially proven, including using IEC 61499 distributed control across multi-controller hardware, completing 1,000 error-free assembly cycles.

**We are looking for three manufacturers to work with us to exploit the value of this approach to solving their real-world automation challenges.**

**Contact us to join the SDA pioneers at WMGAutomationSystems@warwick.ac.uk**