

FACTORY OF THE FUTURE

OCTOBER 17, 2018
FACTORY 2050 | AMRC | SHEFFIELD, UK

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Dassault Systèmes' FACTORY OF THE FUTURE event at the AMRC

Join us at Dassault Systèmes' FACTORY OF THE FUTURE event at the University of Sheffield's Advanced Manufacturing Research Centre (AMRC) on October 17, 2018.

This one-day conference in Sheffield, UK will help you identify your operational challenges and show how to develop your future factory through digital transformation.

Tour the AMRC – Factory 2050 with Dassault Systèmes

The AMRC helps manufacturers of any size to become more competitive by introducing new ways of automatically assembling complex products and using advanced technologies, such as robotics, augmented reality and large-volume metrology.

Our hosts at the AMRC – Factory 2050

Robin Scott
Head of Digital, AMRC

Alex Godbehare
Project Engineer, AMRC



What is the AMRC?

A world-class centre for advanced manufacturing

- Established in 2001 as a collaboration between Boeing & the University of Sheffield.
- Helps manufacturers of any size to become more competitive by introducing advanced techniques, technologies and processes.
- Specialises in carrying out world-leading research into advanced machining, manufacturing and materials, which is of practical use to industry.
- Expertise in machining, automation, robotics, digitally assisted assembly, casting, additive manufacturing, composites, designing for manufacturing, testing and training.

**100-plus
industrial partners
like:**



BAE SYSTEMS





The AMRC & Advanced Manufacturing Park

The AMRC employs around 500 highly qualified researchers and engineers from around the globe, on the Advanced Manufacturing Park in South Yorkshire.

The Sub-centres of the AMRC include:

- Design Prototyping & Testing Centre
- Factory of the Future
- Knowledge Transfer Centre
- Nuclear AMRC
- AMRC Castings
- Composites Centre
- AMRC Training Centre
- Factory 2050

Factory 2050

The AMRC Factory 2050 is the UK's first state of the art factory, entirely dedicated to conducting collaborative research into reconfigurable digitally assisted assembly, component manufacturing and machining technologies and is capable of rapidly switching production between different high-value components and one-off parts.

Need

- Customisation
- Batch size of 1 / high variation
- Short lead time
- High quality

Objectives

- Quick reconfigurability
- Data driven
- Automated / semi-automated
- Modular line side support
- Develop skills and engineering talent
- Hub/ Spoke model

Technologies

- Robotics / Automation
- Self inspecting / validating machines
- Augmented reality / Mixed reality / Digital Work Instructions
- Sensing and manufacturing informatics
- Smart flexible fixturing
- Next gen. MES / ERP / MOM systems
- Intelligent tools
- Visualisation / Simulation / Emulation (Digital Twin)



Project RAID - Demonstrating Digital Twin concept

Caterham 270S

- Complex Assembly
- Demonstrates flexibility of technology
- Relatable

The project shows how advanced technologies can be tailored to any complex full assembly process and used to fuel improvements in manufacturing productivity. The team are assembling half of a Caterham sports car by hand as per the written instructions. They are then building the other half using variety of technologies covering all the themes of research currently underway in Factory 2050.

The technologies being implemented are designed to be easy to integrate and demonstrate their ability to drive even the most advanced of Industry 4.0 manufacturing techniques and processes.

The whole project is being powered by DELMIA Apriso, the Manufacturing Operations System from Dassault Systèmes.



Collaborative Systems

KUKA iiwa

- Commanded via DELMIA Apriso
- Able to detect and report non-conformances automatically
- Traceability information
- Automated quality

Augmented Reality

Holographic CAD

- CAD overlay pulled from Digital Twin Prototype in DELMIA Apriso
- Automated build verification
- Remote Support
- Contextual, location-sensitive information (H&S, changes to work instructions)



Smart Tools

DC Tightening Tools

- Variable torque set via DELMIA Apriso Prototype Digital Twin
- In-process verification results reported to Digital Twin Instance
- Automatic non-conformance generation
- Bolt-bolt traceability



Intelligent Kitting

Closed Loop

- 'Kitting Cockpit' developed in DELMIA Apriso
- Guided kitting process
- Full closed-loop traceability
- Orchestrated by DELMIA Apriso and Machine Integrator

Event location & info



AMRC Factory 2050

Sheffield Business Park
Europa Avenue
Sheffield, S9 1ZA



Hotels nearby

- Mercure Sheffield Parkway
- Holiday Inn Rotherham-Sheffield



Agenda

Check the latest agenda on the event website



Contact

Get in contact with us in case of any questions

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