The Royal Academy of Engineering

Global Research Awards

Modular Reconfigurable Manufacturing Automation

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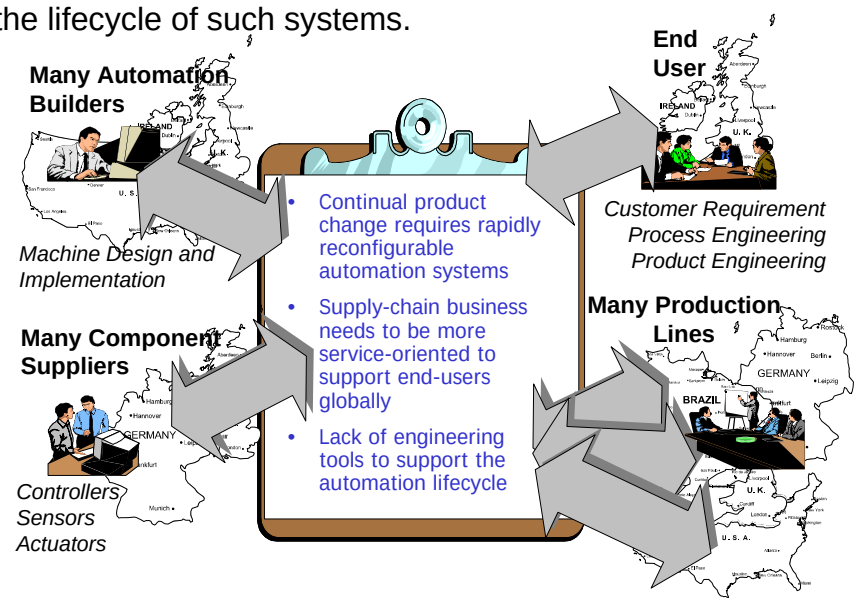
Schneider Electric, France, and Ford, USA

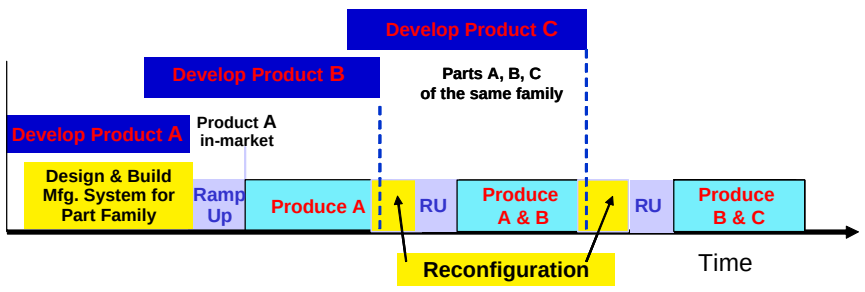
Need

To enable manufacturing automation systems to be more easily and cost effectively built, maintained and reconfigured.

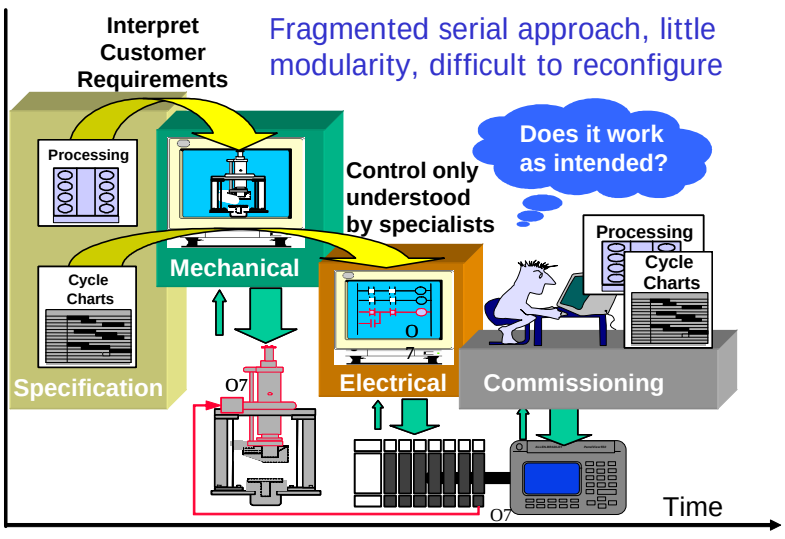
Research focused on how best to: 1) provide embedded control capabilities in reconfigurable automation systems and 2) implement an engineering environment capable of supporting the lifecycle of such systems.



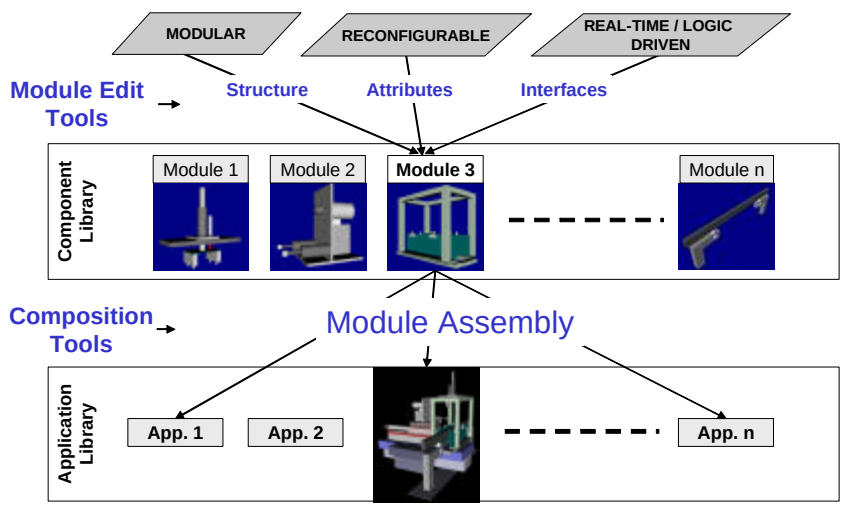
This is strategically important to UK and EU industries involved in this supply-chain since automation systems need to be rapidly reconfigured and remotely supported during their lifecycle to support product change more cost effectively.



Traditional Approach to Automation



Reconfiguring Automation for the Future

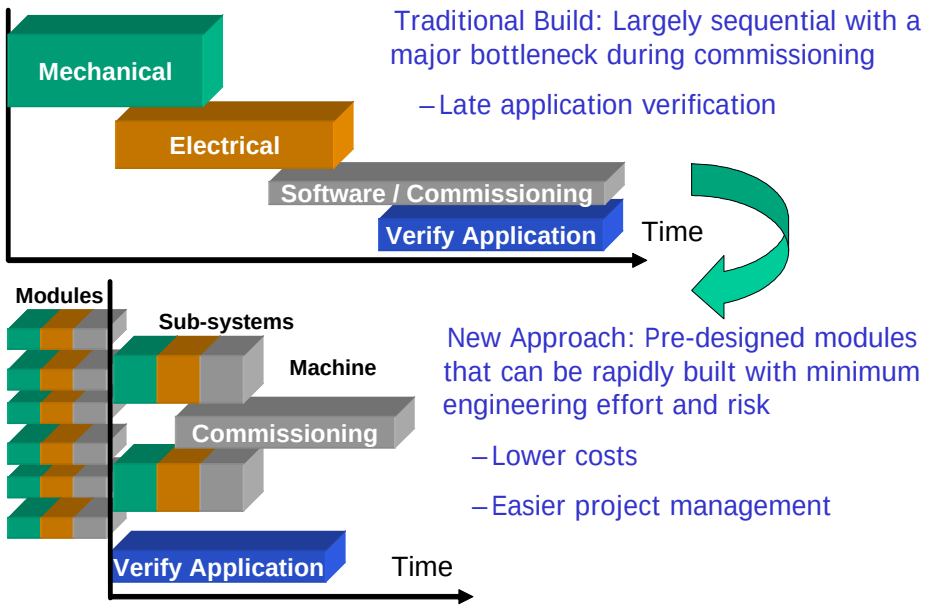


Benefits

Greater modularity and better machine scalability, i.e., allowing changes to be made more efficiently.

Easier process definition, i.e., graphical representations of machine behaviour to allow engineers to make changes easily.

Implicit provision for remote service support, i.e., new business opportunities for global supply-chain partners.



Results

Initiated new research to pave the way to the practical realisation of an engineering environment and control system architecture for reconfigurable automation systems.

Contributing significantly to the definition of the next generation of control technology for reconfigurable automation systems.

Schneider Electric

Ford

Loughborough University