

ROLE TITLE: Research Engineer / Advanced Research Engineer – Model-Based Enterprise
Reports to: Engineering Capability Lead – Digital Systems

Direct reports including contractors: None

Budget: None

Key relationships:

- Reports into, collaborates with and acts as a technical advisor to Principal RE – MBE and ECL
- Advises Principal RE – MBE and ECL on technical strategy/ road-mapping

ROLE PURPOSE:

- To deliver and develop model-based enterprise (MBE) principles and practices across the digital design and manufacturing value chain. This includes deploying model-based methods in projects, contributing to capability development, and engaging with internal and external stakeholders to advance the understanding and application of MBE within industry.
- You will support (Research Engineer) or lead (Advanced Research Engineer) the application of digital tools and co-creative processes across design, manufacturing, and beyond, helping establish the NCC as a centre of excellence for MBE within the High Value Manufacturing Catapult (HVMC) and wider industrial network.

MAIN ACTIVITIES:

Technical (RE/ARE split where applicable)

- Apply (**Research Engineer**) / lead the deployment (**Advanced Research Engineer**) of MBE methods within design and manufacturing programmes and capability development initiatives.
- Contribute to (**Research Engineer**) / define (**Advanced Research Engineer**) technical approaches for applying MBE to collaborative product development challenges.
- Evaluate digital design and manufacturing workflows, including CAD, CAM, PLM, and collaborative platforms, to support the delivery of model-based practices.
- Complete (**Research Engineer**) / appraise (**Advanced Research Engineer**) literature reviews and technical assessments to determine best practice and future trends in MBE.
- Support (**Research Engineer**) / lead (**Advanced Research Engineer**) the development of toolkits, frameworks, and training material to embed MBE across projects and teams.
- Assist (**Research Engineer**) / advise (**Advanced Research Engineer**) on selection, integration, and use of digital tools (e.g., CATIA 3DEXPERIENCE, Teamcenter, STEP standards).
- Contribute to the NCC's internal digital strategy (**Research Engineer**) / shape the technical roadmap for MBE capability growth (**Advanced Research Engineer**).

Customer Interaction

- Present technical progress and outcomes to internal teams and external stakeholders.
- Support relationship building with industrial and academic partners to share learning and explore new MBE opportunities.
- Actively contribute to working groups (**Research Engineer**) / represent NCC and advocate for MBE approaches in external forums and HVMC activities (**Advanced Research Engineer**).
- Share knowledge and promote cross-functional learning to embed a digital-first culture across NCC.

This Job Description is not an exclusive or exhaustive list of all activities that an individual in this position may be asked to perform. You may be required to undertake other responsibilities or activities, as requested by your line manager, to support your team or wider NCC activities.

PERSON SPECIFICATION

Essential	Desirable
- A master's degree in Mechanical, Manufacturing, or Digital Engineering (or equivalent experience). - Familiarity with digital design, manufacturing, and lifecycle management tools (e.g., CAD, CAM, PLM).	<u>Qualifications/Experience</u> - Experience in composite or non-composite engineering environments. - Working knowledge of MBE, Digital Thread, or Digital Twin practices. - Experience with CATIA V5, 3DEXPERIENCE, Teamcenter, or equivalent tools. - Chartered or working towards Chartered Engineer status (required for ARE).
<u>Behavioural Competencies</u> For all levels: - Clear communication skills across technical and non-technical audiences. - Willingness to learn and apply new digital methods and tools. - Collaborative approach to working across disciplines. Additional for Advanced Research Engineer: - Ability to lead technical work and mentor junior engineers. - Confidence to represent NCC externally and contribute to strategy and roadmapping. - A professional, credible technical presence in collaborative settings.	<u>Behavioural Competencies</u> Understands the importance of being a member of a professional technical community, learning from its knowledge and standards and able to actively contribute to its advancement