

# Design for manufacturing

We can help you improve the manufacturing performance of a new product at the design stage.

Effective design for manufacturing (DFM) can significantly improve manufacturability and reduce production costs for a new component or system. We can review your design to ensure that it can be efficiently manufactured. This is best done at an early stage of design development, so that you can avoid manufacturing problems and costly features.

## Your challenge

A DFM study can add value if:

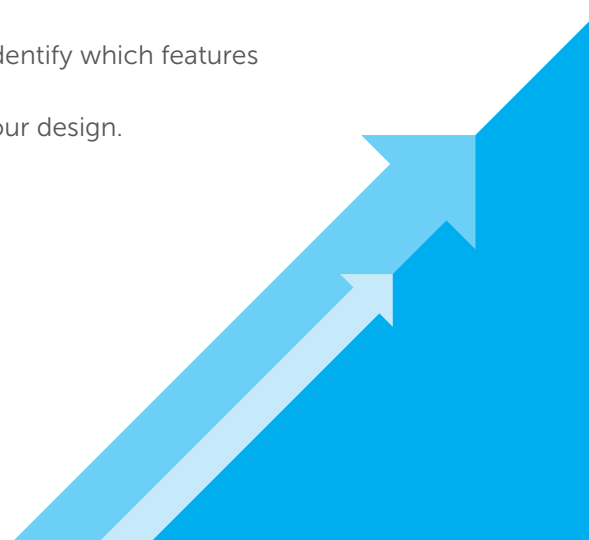
- You are designing a new product, system or subsystem, and want to ensure the design is optimised for manufacturing.
- You want to ensure your product can be manufactured in a cost-efficient manner.
- You want an independent review of your design by manufacturing experts.

## Our service

- We review your product's functional specification and business drivers. This could include drawings, relevant codes and standards, demand and cost targets.
- We work with your team to understand the key criteria for assessment. This could include component cost, manufacturing risk, material requirements, manufacturing or technology readiness level.
- We will review your product systematically, using a range of tools to identify which features could be optimised for manufacturing.
- We provide a detailed report, with evidenced recommendations for your design.

## Benefits

A DFM study can help you:

- Reduce the time to design a component.
  - Reduce the time to ramp up production.
  - Reduce product cost.
  - Produce a higher quality product.
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## Our expertise & capabilities

The Nuclear AMRC team includes manufacturing engineers, research engineers and project managers, delivering multi-disciplinary programmes for industry customers of all sizes. Our manufacturing engineers have vast experience of shopfloor production, new product introduction and design for manufacturing (DFM).

We use a variety of industry-standard DFM tools including process failure mode effects analysis (PFMEA), design failure mode effects analysis (DFMEA), and advanced product quality planning (APQP). We have extensive experience in DFM techniques including reduced part count, modular design, multi-functional components, and simplified assembly.

For more information, contact

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The Nuclear Advanced Manufacturing Research Centre, part of the High Value Manufacturing Catapult, helps UK companies improve their capabilities and performance for nuclear and other high-value industries. We focus on large-scale high-precision manufacturing processes for quality-critical applications.

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## Process

A typical DFM study includes the following steps:



### 1 Scoping and planning

We work with you to scope the project and develop a delivery plan. We will provide a statement of work detailing the scope, costs and timescales for the study. DFM studies typically take 10 to 12 weeks.



### 2 Understanding your needs and drivers

We review your drawings, relevant codes and standards, supply chain needs, material requirements, and other factors which will affect our recommendations.



### 3 Design development workshops

We will conduct a series of workshops with experienced manufacturing experts, to review the key manufacturing considerations for your product and select features for detailed investigation. Your team can take part to provide guidance and develop your own experience of DFM processes and tools.



### 4 Detailed investigation

We research and investigate ways to improve manufacturability of the selected features, and provide evidence on the achievable impact. Techniques typically include modelling, material selection impacts, and cost benefit analysis.



### 5 Present findings

We present our findings with conclusions, underpinning evidence and recommendations.