

## How MSP helped BAE Systems save £21 million using NC-PerfectPart

**BAE Systems PLC is the UK's largest defence and aerospace manufacturer, employing 90,000 people at 200 locations globally. A major contract is the rear fuselage assemblies for the F-35 Lightning II Joint Strike Fighter to US defence giant Lockheed Martin.**

### Challenge

The Samlesbury Engineering team are challenged with increasing the F-35 production rate to one plane set per day.

One milestone was streamlining production of Nozzle Bay Doors (NBD) for the F-35 STOVL (Short Take Off Vertical Landing) variant. A critical step was fixture development to allow the door to be machined to tight tolerances despite its complex and varying shape.

Other strategic project aims were reducing long setup times, lower production costs and increasing part quality.

### Working together

BAE Systems had already worked with MSP successfully on a number of key defence projects, including Eurofighter Typhoon, and previous F-35 projects, making MSP natural partners for this new challenge.

### Success

Using NC-PerfectPart, the BAE Systems engineering team developed an innovative setup technique, known as sticky fixturing. A simple way to hold a component in its free-state while it is machined.

Conventionally components being processed similarly to the NBD were held in place on vacuum routing fixtures, however, vacuum would have distorted this configuration of component.

Working together BAE Systems and MSP developed adaptive machining on a sticky fixture utilising MSP's automated parts set up. This collaboration ensured the team realised the challenge for the NBD.

Part setup was **reduced from days to minutes** leading to savings of £21m over the life of the F-35 program.

### Award

The innovation and engineering excellence involved was recognised with a BAE Systems Chairman's Gold Award.

This was the 3rd award the collaborating teams have won for their contributions to innovation and cost reduction.

**BAE SYSTEMS**

INSPIRED WORK

chairman's awards 



**“Collaboration between MSP and BAE Systems has allowed the team to develop a unique method of holding and adaptively machining on a sticky fixture. The team’s innovative approach and expertise in their respective fields has led to considerable safety, quality & cost improvements.”**

### Bob Greenhalgh

Combat Air Detail Manufacture Fabrications  
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BAE Systems PLC