

# Research

## Advancing jet engine technologies

Birmingham City University's Knowledge Based Engineering Lab is enabling improved design methods for the development of higher performing jet engines and bringing advances in design engineering automation technologies.



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These improved design methods are in collaboration with leading Aerospace manufacturer Rolls Royce plc, and the company aims to develop significant economic benefits through the optimisation of design and manufacturing processes.



## **Background**

The KBE Lab was set up by Professor Craig Chapman, and was the first of its kind in the UK.

The aim of Knowledge Based Engineering research is to provide a better understanding

of the complex procedures that underpin the development of sophisticated technological products such as jet engines.

## **Method**

This innovative method for design automation captures, models and reuses product and process knowledge, allowing businesses to rapidly develop products.

Using KBE design and development, projects that took months can now be completed in days.

## **Impact**

The collaboration with Rolls Royce, which began in 2009, has shown that significant economic benefits can be achieved. It can be seen that the use of KBE can reduce the design to make cycle by 40%, allowing more solutions to be considered within the same timeframe.

The wider reaching impact will be innovative design engineering solutions, providing competitive and sustainable engine technologies.

To find out more, visit the project page at [bcu.ac.uk/research/stories](http://bcu.ac.uk/research/stories)