

As the F-35 programme nears the UK delivery date in 2018, a new RUSI report calls for investment in cross platform network technology to take advantage of the next generation capabilities offered by the new plane.

You can read paper here: <https://rusi.org/f-35-rusi-press-feb2016> or a summary on the next page.

The paper, written by RUSI Research Analyst Justin Bronk, argues that if 'the UK military modernises its cross-platform connectivity, data processing, exploitation and dissemination capabilities, and concepts of operations, the F-35 and the military instrument as a whole will be vastly more capable and efficient. If it does not, the UK will not only be wasting a significant part of the F-35's potential capabilities, but will risk degrading interoperability with the US and other partners who have progressed further in their thinking on information and network-centric warfare.'

The report observes that the aircraft will initially be available in small numbers for the UK. Thus, using those first tranche of F-35s to enhance the combat power and flexibility of legacy assets such as Typhoon rather than purely as strike assets may be the most efficient way to enhance British combat power.

However, in its early versions, the F-35 will not be able to share the sensor picture they creates with other legacy assets without potentially compromising its survivability by using standard Link 16 datalinks.

Rectifying this problem, the author concedes, is likely to be an expensive process. It will involve achieving interoperability across multiple assets in the future concepts of operations of multiple partner organisations in the programme. However 'benefits to the wider force could be substantial ♦ overcoming the shortcomings in cross-platform high-bandwidth network capabilities in all three services. The current equipment programme does not appear to provide for a coherent strategy to approach this requirement.'

Entitled 'Obtaining Maximum Value from the F-35: Harnessing Transformational Fifth-Generation Capabilities for the UK Military', the paper aims to explore how the F-35 based on Queen Elizabeth-class aircraft carriers, and on land can best be utilised to enhance the UK's military options and responses to different potential threats.

The report reveals how the F-35 will greatly enhance the capability of the Royal Air Force and Royal Navy to operate in contested environments where vulnerable enablers such as E-3D AWACS cannot be safely deployed, due to its powerful sensor suite and fused data picture for the pilot which gives excellent situational awareness without requiring support.

In the 2020s, the F-35 has the potential to be a huge capability and flexibility enhancer for legacy platforms in all three domains because of its abilities in gathering, processing and sharing information. This is probably the most significant benefit that the aircraft can bring to the UK armed forces. In the 2030s and beyond, there will almost certainly be a plethora of operational uses for the F-35 which have not been conceived at this point.

The roll-out of the F-35 has been much debated, as has been the Typhoon. The report observes that both aircraft are highly complementary capabilities in service with the UK military but continued investment in datalink translation and relays is required to ensure they can interoperate effectively without compromising survivability.

It also reveals that the Queen Elizabeth class aircraft carriers do not have sufficient network bandwidth capabilities at present to make full use of the situational awareness and tactics which the F-35 can offer the Royal Navy. (This was subsequently part-denied by the UK Government in an answer to Parliament)

Access paper here <https://rusi.org/f-35-rusi-press-feb2016>