

# £2.8 million available for advanced Radio Frequency (RF) Intelligence, Surveillance and Reconnaissance (ISR) innovations

The Defence and Security Accelerator (DASA), on behalf of the Bright Corvus Project, is pleased to launch a new themed competition called [Advanced Radio Frequency Sensing Integrated Effects and PNT](#). This competition seeks to find disruptive innovations that enhance our approach to delivering pervasive, resilient Intelligence, Surveillance and Reconnaissance (ISR) and agile effects, supported by Position, Navigation and Timing (PNT) as a Service (PNTaaS), into future Defence & Security Electromagnetic Spectrum (EMS) landscapes.

## **Key Dates and funding**

Up to £2.8 million is available for this competition and DASA expects to fund 15-20 proposals.

**Submission deadline: Midday on Tuesday 26th April 2022**

## **Next generation ISR capabilities**

One of the most significant, enduring capability challenges MOD faces is pervasive, full spectrum, multi domain ISR. In an increasingly congested and complex Electromagnetic Spectrum (EMS), it is essential to develop capabilities for situational awareness and affecting the adversary systems that are reliant on the EMS. As a result, a move away from large monolithic RF sensors, towards spatially distributed solutions that exploit autonomy and integrate with RF effectors will be part of delivering a step change in capabilities.

This competition is funded by the Bright Corvus project, under MOD's Future Sensing and Situational Awareness (FSSA) Science & Technology (S&T) Programme. The Bright Corvus project seeks to all deliver change compared to current ISR capabilities by developing:

- advanced, distributed RF sensing
- integrated RF effects
- provision of PNTaaS

[Do you have a solution? Read the full competition document to learn more and submit a proposal](#)

# What innovations are DASA looking for?

The focus of this competition is multi-function, distributed RF Sensing (including RADAR and Electronic Surveillance (ES) of both communications and radar bands) to support ISR and the targeting, delivery and post-action assessment of integrated RF effects. Multi-modal aspects within or between platforms are welcomed.

## Indicative Platforms

Solutions should demonstrate their relevance to Bright Corvus through contextualised use of platforms or scenarios.

This competition will consider platforms ranging from dismountable (into buildings of opportunity) or man-portable systems through Unmanned Vehicles and elements that could be mounted onto manned platforms (including pods).

## Indicative Scenarios

Solutions should show how innovations could mature post-project to deliver benefit in a deployed context. For example:

- Dense urban environment with congested EM Environment (EME)
- Contested or disrupted EM environments
- Littoral coastal defences
- Operating at significant range from mission base
- Operating across mountainous/valley systems

# Competition challenges

## Challenge 1: Distributed RF Sensing

This challenge area seeks innovations that detect, recognise and identify entities of interest as well as locate and track them in complex physical and EM environments. Solutions should focus on novel technology and techniques distributed across numerous sensors that collectively provide better overall performance than current monolithic counterparts and at lower individual costs.

## Challenge 2: Integrated Sensing & Effects

This challenge area seeks innovations that advance integration of sensing with RF effect delivery at range or within challenging environments. For example, increasing automation, intelligent application of resources and understanding and orchestrating Electronic Warfare missions across distributed resources.

## Challenge 3 – Integrated Sensing & Effects Enablers

This challenge area seeks enablers to core systems, including antennas, power and modularity. Proposals should demonstrate potential to unlock a step change in how we operate and deploy a variety of different future systems.

For example:

- antenna and front end circuitry developments
- modular system design approaches
- new power technologies to enable small multi-function, sensor/effector systems

#### **Challenge 4: PNT as a Service**

In this challenge area, proposals should include evidence of how they enable distributed RF sensing and effector concepts through novel PNT technologies, PNT fusion and dissemination techniques, and resilience to or detection of disruptors.

#### **Challenge 5 – Novel Concepts and Architectures for advanced RF Sensing and Effectors**

This challenge area seeks proposals that inform development of secure, autonomous coordination of sensor/ effector units across multiple platforms to maintain continuous sensing, tracking or effect delivery in a deployed scenario.

[Learn more about the challenge areas in the full competition document.](#)

## **Have questions? Join our upcoming webinars**

### **Briefings & Dial-in sessions for Competition Launch**

Date: Thursday 03 March 2022

Join this session for further detail on the competition, the challenge areas and potential solutions. You will also have a chance to ask questions in an open forum.

[Register here.](#)

### **A series of 15 minute one-to-one teleconferences**

Date: Tuesday 8 and Thursday 10 March 2022 Sign up for a one-to-one conversation with a competition organiser to ask any questions you have about the competition and submitting a proposal.

[08 March. Register here.](#)

[10 March. Register here.](#)

## **Submit a proposal**

Do you have a solution or novel approach that may help us move towards spatially distributed, pervasive, sensor systems?

Submit an idea and help inform DASA and the MOD's Bright Corvus Project on developing enhanced ISR into future defence EMS landscapes.

[Read the full competition document to learn more and submit a proposal.](#)