The Nuclear Decommissioning Authority is seeking innovations in remote site monitoring technology

- DASA has launched a new competition: Remote Monitoring of Sensitive Sites
- Funding provided by Nuclear Decommissioning Authority
- £750,000 (excl VAT) available to find and develop innovative technologies that help remotely monitor legacy nuclear sites.
- Closing date: 18 May 2022

The Defence and Security Accelerator (DASA) is pleased to launch a themed competition called Remote Monitoring of Sensitive Sites, which aims to find innovative technologies that help the collection of data remotely on assets, infrastructure and the surrounding environment/ecosystem in order to make more proactive decisions about managing sensitive sites, now and in future without the physical presence of humans. DASA is running this competition on behalf of the Nuclear Decommissioning Authority (NDA).

The NDA is charged with cleaning up the UK's 17 earliest nuclear sites safely, securely and cost-effectively. It is vital that monitoring, inspection and security capabilities remain fit for purpose, and where appropriate, are continuously improved or enhanced in order to maintain safe, secure and more efficient operations and to inform future decommissioning efforts across the UK.

Remote Monitoring of Sensitive Sites seeks technologies that will help achieve a step change improvement in data capture, and which enables new predictive modelling capabilities to proactively improve decision-making whilst also keeping humans away from harm across the NDA's estate.

Key dates and funding

Up to £750k (excl VAT) is available for Phase 1 of the competition, with a maximum of £75k (excl VAT) for each funded proposal.

The closing date for proposals is 18 May 2022.

Have an innovation? Read the full competition document and submit a proposal

Effective monitoring of sensitive sites: Key challenges

This competition aims to find the next generation of technologies that will enable effective monitoring of sensitive sites which enhance or significantly improve upon existing methods, and enable a step change in predictive modelling capability.

Proposals should address one or more of the following three challenge areas which will enable the NDA to collect data to enable more effective decision making, without physical presence of humans:

Challenge 1: Built environment and infrastructure

Innovative solutions that enhance the detection, identification, and monitoring of complex and high-value physical assets, including equipment and civil structures. Assets of interest include building rooftops, pipelines, and complex facilities. An ability to undertake automated change detection, remote inspection, and condition monitoring of external assets is also of interest.

Currently, on average, roof inspections are undertaken manually every six to twelve months. The opportunity to conduct more inspections to identify issues as early as possible and on-demand would be hugely beneficial.

Ideally, the innovation should be able to detect:

- changes in colour
- water collecting
- physical anomalies i.e. cracks, texture change
- organic growth
- thermal changes over time

Challenge 2: Environmental monitoring and land use

Innovative solutions which enable users to remotely monitor and effectively report on the use of land and environmental aspects of the NDA estate, such as:

- early warning of water effects
- monitoring air quality
- change in vegetation around a site
- monitoring site/non-site interface e.g. traffic surveys
- environmental impact on and around sites e.g. coastal erosion, monitoring a subsea wellhead and borehole on the seabed

Currently, monitoring systems involve physical sensors at a variety of locations on a site by site basis. Data capture is manual and does not allow for easy aggregation of data or integration and analysis of different data types, which is labour and time intensive.

Challenge 3: Security and resilience

Innovative solutions to ensure NDA sites remain safe and secure in a resource constrained environment, and deliver proportionate security in line with the site risk reduction curve during the decommissioning process.

NDA is interested in innovative capabilities that enable:

- perimeter monitoring of sensitive sites remotely and/or from an autonomous vantage point

- resilient and real time hazard, risk and threat identification
- autonomous interdiction capability (the action of intercepting and preventing the movement of a prohibited commodity or person)
- intelligence-based alerting system

Read the full competition document to learn more about the challenge areas

Have questions? Join our upcoming webinars

Launch briefing

Date: 31 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.

One-to-one meeting

Date: 5-6 April 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.

5 April 2022. Register here. 6 April 2022. Register here.

Submit a proposal

If you have a solution or technology that may help the NDA better monitor site infrastructure, the environment, or improve the security and resilience of sensitive sites, DASA would like to hear from you. Read the full competition document to submit a proposal.

Submit a proposal

PM words at a service commemorating the 5th anniversary of the terror attacks on Westminster Bridge and New Palace Yard

I want to begin by thanking the Manchester Survivors Choir for their absolutely beautiful singing, and the spirit in which they communicated their sense of resilience with us this morning.

That’s what I want to talk about, because in his first letter to the Corinthians, Paul tells us that:

“…when this corruptible shall have put on incorruption, and this mortal shall have put on immortality, then shall be brought to pass the saying that is written:

‘Death is swallowed up in victory.

‘O death, where is thy sting?

‘O grave, where is thy victory?’”

And so today, five years on from this tragedy that touched so many, I join you not to mourn. Nor to add more tears to those already shed.

Instead I am here to celebrate the lives of Andreea, Aysha, Kurt and Leslie. They were each taken from us far too soon.

But they each live on in all our hearts and in the memories of those they loved, and those who loved them around the world. Because as the Lord Mayor was just saying, the diversity of their origins shows the truth that an attack on London, like an attack on Manchester, is an attack on the world.

I am here to celebrate the extraordinary heroism of PC Keith Palmer.

A man whose actions that bright spring day showed him to be truly the best among us, and whose courage and sacrifice remain an inspiration to us all.

I am here to celebrate the skill and bravery of PC Palmer’s colleagues who risked themselves to save countless lives, and who, in many cases, are even today still putting themselves between the innocent and those who would do us harm.

I am here to celebrate the selflessness and compassion of everyone who rushed to the aid of strangers that day.

Paramedics, commuters, tourists, MPs who didn’t cross over the road but put themselves in harm’s way to help others in their moment of need.

And I am here to celebrate our capital London. This unique city. This fantastic city. Which over so many centuries has taken whatever anyone cares to throw at it, and has emerged ever stronger, brighter and greater.

And that is thanks to the incomparable spirit of the people within it, and that is the spirit that we remember as we celebrate today.

eNews Special Feature: From Albania to Zambia – GAD's A to Z of world work

Global GAD – how our work goes beyond our borders

The Government Actuary's Department (GAD) traditionally provides actuarial advice and support to the UK government and public sector.

However, our work is not limited to the UK and its immediate surroundings. We provide expertise to overseas projects where they are aligned with the UK government's interest.

The Prime Minister set out the government's priorities in 'Build Back Better: our plan for growth'. It's about plans to support growth through investment in infrastructure, skills and innovation, as well as ways to support the government's vision for Global Britain.

A key part of this campaign is demonstrating the UK's capabilities internationally, as a newly independent trading nation. GAD's international work is closely aligned with this.

International work areas

GAD provides actuarial advice on insurance and pensions.

We provide international support in:

1. disaster risk financing
2. climate change
3. social security schemes

1. Disaster risk financing

Disaster risk financing considers the financial instruments and budgeting methods that governments can put in place before a shock occurs, such as a flood, earthquake or a pandemic, in order to reduce the impact of the disaster.

GAD has been working in partnership with the Centre for Disaster Protection (CDP), the Foreign, Commonwealth and Development Office (FCDO) and the World Bank for a number of years. We provide analysis and support on disaster risk financing projects for a range of countries and through these partnerships we have worked with several international humanitarian organisations including the:

- UN Development Programme
- UN Office for the Coordination of Humanitarian Affairs
- International Federation of Red Cross and Red Crescent Societies

- START Network

Our partnership with the CDP includes regular secondments of GAD staff where we provide in house actuarial support such as developing training and analytical expertise.

EXAMPLES OF RECENT PROJECTS

Albania

Albania faces serious geological and climate-related risks, particularly from earthquakes and floods and is ranked the most at-risk country in Europe. Working for the World Bank, we developed a model that considers how future disasters could impact on Albania's finances. We set out a methodology for quantifying how a disaster impacts the fiscal position and provided 2 worked examples.

We began by using a catastrophe risk model to consider the damage to private property from possible future events. We then added historical data and assumptions about the government's response and economic effects to the model. This allowed us to consider the likely impact of the disaster on government expenditure and revenue. It also informed analysis of the fiscal impact of a disaster, additional borrowing requirements and actions needed to return the country to a pre-disaster position.

Finally, we considered the government's risk tolerance and whether risk financing instruments could help to mitigate the fiscal impact of future disasters. Our modelling has helped the government of Albania to plan for future disasters.

Ethiopia

Ethiopia has experienced rapid economic and population growth which has led to various challenges, such as food and other resource shortages. This has been coupled with the impacts of climate change. Building Resilience in Ethiopia (BRE) is a 3-year (2019 to 2022) technical assistance programme co-funded by FCDO and the US Agency for International Development (USAID) which aims to mitigate the impacts of growth and climate change on the Ethiopian population.

Through our relationship with the CDP we supported the programme by providing a qualitative analysis of their model for quantifying disaster-related fiscal risk. Following this we supported the CDP in providing training for BRE and the Ethiopian Ministry of Finance on instruments for managing disaster risk.

Malawi

GAD worked with both the CDP and the World Bank on a project to analyse the welfare impacts of drought. We applied data science techniques to model historic data for Malawi and capture both seasonal and geographic trends in order to develop a model that simulates soil moisture. This provided a

methodology which can be used to develop models for simulating other drought measures in different countries.

Full details can be found here: https://www.gov.uk/government/news/drought-modelling.

2. Climate Change

Climate change is one of the greatest challenges facing our world right now, and addressing it requires global collaboration. At the COP26 summit last November, representatives from around the world met in Glasgow. Their aim was to agree steps that must be taken to mitigate climate change and adapt to its impacts. The summit culminated in the Glasgow Climate Pact signed by nearly 200 countries.

As host of COP26, the UK government was central to facilitating this global event. Many government departments were involved in the UK's preparation and GAD is proud to have lent our support to this work.

In the run up to COP26 one of our actuaries, Sara Ronayne, was seconded to HM Treasury's Finance Hub. Her role within the hub (led by former Bank of England Governor Mark Carney) was to support the COP26 Private Finance Agenda. The overarching goal of this agenda was to help create a global financial system where "every professional financial decision takes climate change into account".

Key outcomes with global reach include:

- the establishment of a new International Sustainability Standards Board
- the Glasgow Finance Alliance for Net Zero, with over $130 trillion of private capital committed to reaching net zero carbon emissions by 2050. This is equivalent to 40% of the world's financial assets

Read Sara's blog to find out more about her experience.

3. Social Security

In addition to income tax, we pay National Insurance contributions in the UK. These are used to fund state benefits, such as:

- state pensions
- unemployment benefits
- healthcare

A more generic term for this is social security. Current contributors to a social security fund may still be receiving benefits in 60 or more years' time. It is therefore a long-term undertaking and so it is important to consider the financial implications.

There are many uncertainties which arise with such long timelines.

Policymakers need to consider many issues, such as:

- how many people will be employed and paying contributions
- what level of contributions will be paid, and will these be sufficient to cover the expected cost of providing benefits
- how much it will cost to provide pensions to the future population, and how will this cost vary if the population does not change as currently expected

INTERNATIONAL SUPPORT PROVIDED

Guernsey, Jersey and the Isle of Man

As British Crown Dependencies, the governments of Guernsey, Jersey and the Isle of Man have a close relationship with the UK government. GAD has, for many years, carried out actuarial reviews of the social security schemes for Guernsey, Jersey and the Isle of Man.

For these reviews, we look at the projected finances of the scheme over a long period (around 60 years). We consider what benefits are to be paid over this period and, for example, calculate the contribution rate that would be required to fund these and whether the fund would be exhausted during the projection period. We illustrate the key drivers behind the numbers and how changing them would alter the contribution rate, for example:

- investment returns
- migration patterns
- earnings growth

Our analysis provides the governments with a sound basis for making future decisions on benefits and contributions.

Canada

The Office of the Chief Actuary in Canada produces a report on the Canada Pension Plan every three years. The Canada Pension Plan is a key part of the social security system.

GAD helped the Office of the Chief Actuary to select an external peer review panel for the 30th actuarial report, and provided an opinion on the peer reviewers' report.

Further details of the work carried out can be found on our website.

Zambia

GAD has been working with Zambia's National Pension Scheme Authority (NAPSA) for over a decade. We provide actuarial reviews of the National Pension Scheme, the main social security scheme in Zambia, to help NAPSA manage the finances of the scheme.

NAPSA staff have visited GAD to learn more about the modelling that we do and to discuss wider issues affecting social security schemes, such as climate change.

Summary

GAD is committed to using its expertise to support the interests of the UK government both at home and abroad. We continue to welcome new opportunities to work with international clients and further demonstrate our capabilities beyond our borders.

A key part of GAD's 2020-2025 strategy is to "build a strong reputation as objective, professional actuarial experts within the public sector" (Martin Clarke, Government Actuary) and our overseas work plays an important part in demonstrating this.

Daniel Morgan Independent Panel Report: Metropolitan Police Service

Published 12 August 2021
Last updated 22 March 2022 + show all updates

1. 22 March 2022

   Accessible HTML versions added of the Home Secretary's letter of 22 March 2022 and the Commissioner of the Metropolitan Police Service's letter of 17 March 2022.

2. 22 March 2022

   Correspondence added about the Metropolitan Police's response to the Daniel Morgan Independent Panel report and an inspection report by Her Majesty's Inspectorate of Constabulary and Fire and Rescue Services.

3. 7 March 2022

   Added further correspondence from Cressida Dick on the progress made so far.

4. 12 August 2021

   First published.

Flood hydrology roadmap sets out 25-year vision to help predict and manage flood risk

A flood hydrology roadmap released today sets out a vision to help scientists and practitioners better predict future flood events and improve flood resilience across the UK.

The roadmap, which brings together the views of more than 100 experts from over 50 organisations, will improve hydrological data, models and science which can be used to inform how we adapt to flood risk from our rivers, surface water, groundwater and reservoirs.

These models will underpin flood risk management for decades to come, with benefits to areas including:

- design and maintenance of flood defences;
- national and local flood risk assessment and mapping;
- the design and operation of flood forecasting and warning schemes;
- design and operation of sustainable drainage systems; and
- understanding the impact of climate change on future flood risk.

The roadmap will also help us understand the impact of climate change on flood risk and will support modelling of past and future climate change impacts.

The Environment Agency has already secured £6.9 million over six years to start delivering on the roadmap and is working with the Scottish Environment Protection Agency, Natural Resource Wales, Department for Infrastructure Northern Ireland and UK Research and Innovation to identify routes to further funding.

Dr Sean Longfield, Lead Scientist on Flood and Coastal Risk Management Research, for the Environment Agency, and an author of the report, said:

This roadmap provides us with a fantastic opportunity to better understand the science behind flooding and will be an invaluable tool in helping us understand future flood risk.

> The Environment Agency is working hard to ensure recommendations from the roadmap are followed up on so we can develop the next generation of flood hydrology knowledge, methods, models and systems that will underpin flood and coastal risk management for decades to come.

> The roadmap is intended to cover England, Wales, Scotland, and Northern Ireland from 2021 to 2046. A Flood Hydrology Roadmap Governance Board has been established to ensure the roadmap is taken forward.

It comes as the government’s investment in flooding has doubled to a record £5.2 billion between 2021-27, creating around 2,000 new flood and coastal defences to better protect hundreds of thousands of properties across England.