UK and Australia team up to use space technology to protect Pacific from climate change and natural disasters

The UK Space Agency is looking for project ideas, to be delivered through UK aid, that use the data collected by satellites to improve decision-making for disaster risk reduction, ocean monitoring, mangrove mapping and maritime management.

This will also see Australia's national science agency, CSIRO, provide match-funding and invite UK organisations and other international partners to work with them to scope projects designed to deliver sustainable benefits to Small Island Developing States in the Pacific.

The work will build on those systems already under way to help prevent and plan for disasters that are a consequence of rising sea levels and climate change.

This follows a recent statement of intent between the UK Space Agency and Australian Space Agency to establish a 'Space Bridge' to increase strategic collaboration and lay the foundations for swift negotiations for space-related opportunities under any potential future trading arrangements.

Science Minister Chris Skidmore said:

> Increasing our investment in space technology demonstrates our determination to become a global science superpower, forming new collaborations with countries across the globe.
>
> We were the first major country to sign our commitment to net zero carbon emissions by 2050 into law, and next year the UK will be hosting the UN's climate conference, COP26.
>
> Space has a crucial and expanding role as a green technology, providing vital data on earth observation and climate conditions, which helps to predict the impact of climate change.
>
> We are world leading in our expertise in satellite technology, and are seeking to become the first country in Europe which will be able to perform both horizontal and vertical launches into space – this fund expands on our growing commitment to become one of the world's leading space nations.

One UK space company already having an impact is Surrey Satellite Technology Limited, which launched its NovaSAR-1 satellite last year, part-funded by the UK Space Agency.

The satellite uses Synthetic Aperture Radar (SAR) to provide images day and night and see through cloud cover, making it particularly valuable for Pacific small island states which are frequently covered by clouds.

Artist impression of NovaSAR – Credit: SSTL

CSIRO Chief Executive Larry Marshall said:

> As Australia's national science agency, CSIRO's purpose is to solve the greatest challenges using innovative science and technology, like addressing the impacts of a changing climate.
>
> Building on CSIRO's 75-year history in space, through this project we are aiming to use cutting-edge Earth observation technology to co-design projects with our Pacific Island neighbours focused on managing threats like natural disasters.

The UK and Australia will build on this existing collaboration and improve access to services based on radar satellite data for countries in the Pacific region that need them most.

This is one part of a wider call for projects from the UK Space Agency's International Partnership Programme (IPP), with up to £8 million in new funding available to support collaborations between UK space experts and developing countries and emerging markets, to boost sustainable development through satellite-enabled services.

In addition to the new collaboration with Australia, this call invites applications for projects to address the growing need for developing countries around the world to build resilience to the effects of climate change. This will help forge new partnerships with countries and understand their needs ahead of a follow-on funding call to underpin operational capabilities.

Chris Lee, the UK Space Agency's Chief Scientist and Head of Sustainable Development, said:

> IPP is about developing trusted partnerships across government, industry, academia and local communities. Our projects make real and practical differences to the lives of citizens, building skills and expertise across the partnership.
>
> Our own economy gains more than £2 for every £1 invested in these projects and I'm delighted that we continue to foster space-enabled capacity and services for countries that need them most.

IPP is already supporting projects in 44 countries across the world, which are tackling a wide range of challenges, including deforestation, food

security and disaster resilience.

Funded by the Global Challenges Research Fund it is the world's largest space for sustainable development programme having provided £128 million of grant funding for 33 projects, involving 120 UK organisations and 147 international organisations since 2016.

One of these projects, led by the United Nations Institute for Training and Research and with support from UK partners including the Satellite Applications Catapult and the Met Office, is using satellite remote sensing technology to build climate resilience and enhance decision making for government teams in Fiji, Solomon Islands and Vanuatu.

Satellite image of Vanuatu – Credit: ESA

All IPP projects are match-funded by consortium members and international partners to ensure maximum value for money. The Programme is fully compliant with Official Development Assistance (ODA), with the Independent Commission for Aid Impact recently reporting that the UK Space Agency had developed robust procedures for ensuring ODA eligibility and was thorough in its ODA compliance screening.

IPP was recently recognised by Space & Satellite Professionals International in the Better Satellite World Awards. Evidence shows that space-based solutions can be twice as cost effective as ground-based solutions for ensuring disaster resilience.