



[REDACTED]

1 November 2024

Dear [REDACTED],

Freedom of Information request: FOI2024/00897

Thank you for your Freedom of Information request received on the 7 October in which you requested the following:

Your request:

Please will you let me know what the next steps are with the SWIMMR space weather project? Next steps such as publication of a report and/or recommendations for how to mitigate the impact of space weather on terrestrial infrastructure.

Our response:

I can confirm that UK Research and Innovation (UKRI) holds information relevant to your request. Please see the information below.

An overview, including background and objectives, of the Space weather instrumentation, measurement, modelling and risk (SWIMMR) programme is available [here](#)¹.

The original SWIMMR programme comprised of eleven projects, eight of which were funded by Research Council grants. Six of these projects are now complete, with five still ongoing.

The STFC funding component is delivered via a mixture of open funding opportunities for research projects and commissioned work under standard public sector procurement rules. These projects are:

- SWIMMR S1 - In-situ radiation measurements for space and aviation (Part funded ST/Y004752/1)
- SWIMMR S2 - Support for technology testing and modelling
- SWIMMR S3 - Support for the transition from Research to Operations
- SWIMMR S4 - Solar wind forecasting from the Sun to L1 ([ST/V00235X/1](#)²)
- SWIMMR S5 - Support for a ground-based radiation monitoring network ([ST/X002241/1](#)³)
- SWIMMR S6 - Production of an updated space weather impact study

The NERC component is delivered through research grants. These projects consist of:

- SWIMMR N1 - Improvement of satellite risk forecasts ([NE/V00249X/1](#)⁴)
- SWIMMR N2 - Improvement of aviation risk forecasts ([NE/V002899/1](#)⁵)
- SWIMMR N3 - Improved forecasting for GNSS and HF communications ([NE/V002643/1](#)⁶)

¹ <https://www.ukri.org/what-we-do/strategic-priorities-fund/space-weather-innovation-measurement-modelling-and-risk/>

² <https://qtr.ukri.org/projects?ref=ST%2FV00235X%2F1>

³ <https://qtr.ukri.org/projects?ref=ST%2FX002241%2F1>

⁴ <https://qtr.ukri.org/projects?ref=NE%2FV00249X%2F1>

⁵ <https://qtr.ukri.org/projects?ref=NE%2FV002899%2F1>

⁶ <https://qtr.ukri.org/projects?ref=NE%2FV002643%2F1>

- SWIMMR N4 - Improved forecasting of ground-level current effects ([NE/V002694/1](#)⁷)
- SWIMMR N5 - Improved forecasts of satellite drag ([NE/V002708/1](#)⁸)

Where projects are funded by Research Council grants, links have been provided for further details.

Next steps in the ongoing projects are to transition models of the ionosphere and thermosphere into use at the Met Office, begin flying radiation monitors with selected aviation partners, launch a second radiation monitor into space and complete the deployment of the neutron monitors, including a third small monitor for deployment at Lerwick.

One of the final goals is to publish a report building on the Royal Academy of Engineering Report [Extreme space weather: impacts on engineered systems and infrastructure](#)⁹ by taking account of new space weather impacts and vulnerabilities which have arisen due to changing technologies and work practices in the past decade, together with appropriate advice to government. This report is now in the last stages of review.

The potential for extending the SWIMMR programme into FY25/26 and funding for a follow-on research programme is also currently being explored, pending relevant approvals.

If you have any queries regarding our response or you are unhappy with the outcome of your request and wish to seek an internal review of the decision, please contact within the next 40 working days:

Head of Information Governance

Email: foi@ukri.org

Please quote the reference number above in any future communications.

If you are still not content with the outcome of the internal review, you may apply to refer the matter to the Information Commissioner for a decision. Generally, the ICO cannot make a decision unless you have exhausted the review procedure provided by UKRI. The Information Commissioner can be contacted at: www.ico.org.uk.

If you wish to raise a complaint regarding the service you have received or the conduct of any UKRI staff in relation to your request, please see [UKRI's complaints policy](#)¹⁰.

Yours sincerely,


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⁷ <https://gtr.ukri.org/projects?ref=NE%2FV002694%2F1>

⁸ <https://gtr.ukri.org/projects?ref=NE%2FV002708%2F1>

⁹ https://raeng.org.uk/media/lz2fs5ql/space_weather_full_report_final.pdf

¹⁰ <https://www.ukri.org/who-we-are/contact-us/make-a-complaint/#skipnav-target>