Award

Research to Operations to Research (R2O2R)

Met Office

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Scope

Reference

DN778927

Description

'Space Weather Implementation, Measurement, Modelling and Risk' (SWIMMR), was a £19.9m UKRI SPF funded programme led by STFC from 2019, and which largely concluded in 2023. Several of the projects were targeted at space weather scientific modelling gaps, with the aim of bringing them into operation for forecast capabilities in the Met Office Space Weather Operations Centre (MOSWOC). The project 'S3' stood up systems and enabled collaboration between academic partners and the Met Office space weather programme, bringing a platform 'sandbox environment' and portal for monitoring outputs into use at the Met Office (MO) where our scientists worked with several academic partners to bring their models into use.

Whilst the original SWIMMR programme made this collaboration possible, there is much work remaining to bring the models into working operational use by the target date of September 2026, the Research to Operations to Research (R2O2R) project is the next stage in this Programme.

The Space Weather CSA with the Department for Science and Technology (DSIT) sets out a required output for the Met Office to Support the validation, integration and exploitation of new capabilities and data delivered through the SPF SWIMMR Programme.

Met Office Space Weather (MOSW) has agreed with funding partner DSIT to deliver several targets for the next phase of work:

Evidence of user need and user requirement to shape model use and output (MOSWOC being the primary user, with several end-users being the recipients of forecasting products).

Technical and scientific requirements within MOSW for fully onboarding, working with and supporting the models and/or their outputs in operational settings. (Whilst the 'S3' platform and portal were helpful for the early stages of model collaboration, they are not able to support long term model and output development and operation).

In terms of the projects to achieve modelling capability, we have agreed a number of these and their priority levels with the academic institutions who own the models.

The partner BAS led the 'Sat-Risk' project in the SWIMMR Programme (2019-2024). BAS developed an (Outer) Radiation Belt Model ('BAS-RBM') which will provide nowcasting and forecasting of up to 24 hours on radiation risk and exposure at specific orbits. This will be developed into products mainly for the satellite industry to mitigate risks of degradation due to space weather events.

Contract 1

Supplier

- British Antarctic Survey

Contract value

- £158,000 excluding VAT
- £189,600 including VAT

Above the relevant threshold

Earliest date the contract will be signed

18 July 2025

Contract dates (estimated)

- 19 July 2025 to 31 March 2026
- 8 months, 13 days

Main procurement category

Services

CPV classifications

- 73000000 - Research and development services and related consultancy services

Contract locations

- UKC - North East (England)
- UKD - North West (England)
- UKE - Yorkshire and the Humber
- UKF - East Midlands (England)

- UKG - West Midlands (England)
- UKH - East of England
- UKI - London
- UKJ - South East (England)
- UKK - South West (England)

Other information

Conflicts assessment prepared/revised

Yes

Procedure

Procedure type

Direct award

Direct award justification

Single supplier - technical reasons

The partner BAS led the 'Sat-Risk' project in the SWIMMR Programme (2019-2024). BAS developed an (Outer) Radiation Belt Model ('BAS-RBM') which will provide nowcasting and forecasting of up to 24 hours on radiation risk and exposure at specific orbits. This will be developed into products mainly for the satellite industry to mitigate risks of degradation due to space weather events.

- The models will continue to be developed as required, for transition to operation and will be effectively supported by BAS;

- The collaboration between MO and the partner institution will aim to ensure the best possible resilience for the models over the long term (by seeking to retain expert support during transition to operations);

- Partner expertise and knowledge will effectively be transferred to MO to secure the transfer of the models into operation;

- The boundaries and mechanisms for of any ongoing collaborative relationship (beyond the contract period) with the partner will be defined and any principles agreed;

- The contract deliverables will ensure that the balance of knowledge and expertise to run, support and interpret the models and their outputs, and reliance on expertise will shift away from the partners and towards the MO for transition to operation;

- The collaboration will take a risk-based approach to ensuring the models and model outputs are able to transition to operation.

The deliverables within the contract are associated with a model and code already developed and owned by the partner (supplier) to a specific maturity under the SWIMMR Programme. The academics hold the model code IPR and provide model access to Met Office and therefore are uniquely placed to provide these services to the Met Office. Delivery will 'accelerate' the model's development towards transition to operations within the Met Office Space Weather service. The purpose of the contract is to continue development of the models (which requires the 'deep expertise' of the model developer) and to transfer model and model code knowledge and expertise. In short, there is no other supplier for the work associated with the model.

Supplier

British Antarctic Survey

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Swindon

SN2 1EU

United Kingdom

Email: rh@bas.ac.uk

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Small or medium-sized enterprise (SME): No

Voluntary, community or social enterprise (VCSE): No

Contract 1

Contracting authority

Met Office

- Public Procurement Organisation Number: PVZW-3234-DTLY

Met Office

Exeter

EX1 3PB

United Kingdom

Email: procurement.enquiries@metoffice.gov.uk

Website: https://www.metoffice.gov.uk/

Region: UKK43 - Devon CC

Organisation type: Public authority - central government