

Germany-Bonn: Research and development services and related consultancy services
OJ S 223/2023 20/11/2023
Contract award notice
Services

Legal Basis:

Directive 2014/24/EU

Section I: Contracting authority

I.1. Name and addresses

Official name: European Centre for Medium-Range Weather Forecasts (ECMWF)

Postal address: Robert-Schuman-Platz 3

Town: Bonn

NUTS code: DEA22 Bonn, Kreisfreie Stadt

Postal code: 53175

Country: Germany

Contact person: Procurement at ECMWF

E-mail: procurement@ecmwf.int

Internet address(es):

Main address: <https://www.ecmwf.int/>

Address of the buyer profile: <http://procurement.ecmwf.int/>

I.4. Type of the contracting authority

European institution/agency or international organisation

I.5. Main activity

Other activity: Meteorological and Environmental Services

Section II: Object

II.1. Scope of the procurement

II.1.1. Title

DE_371 Machine Learning for Earth system Digital Twins

Reference number: DE_371

II.1.2. Main CPV code

73000000 Research and development services and related consultancy services

II.1.3. Type of contract

Services

II.1.4. Short description

ECMWF, as one of the Entrusted Entities for the Destination Earth (DestinE) entered into a contract for the purpose of demonstrating that Machine Learning/ Deep Learning (ML/DL) based methodologies can augment and add utility to DestinE datasets and products from the Weather-induced and geophysical extremes Digital Twins (DT).

II.1.6. Information about lots

This contract is divided into lots: no

II.1.7. Total value of the procurement

Value excluding VAT: 771 136,03 EUR

II.2. Description

II.2.3. Place of performance

NUTS code: NO0 Norge

Main site or place of performance: On contractor's premises.

II.2.4. Description of the procurement

The objective of this contract is the application of deep learning methods, specifically generative machine learning techniques such as Variational Auto-Encoders (VAEs), Generative Adversarial Networks (GANs), normalizing flows, and denoising diffusion models, to improve weather forecasting.

The contract involves the generation of large ensembles of physically realistic weather scenarios and temporal downscaling for existing weather forecasts using these machine learning techniques. This is executed through a collaborative effort involving researchers and engineers from MET Norway, Météo-France, and SMHI, with expertise in Numerical Weather Prediction (NWP) and GAN-based ensemble generation.

The project focuses on two main areas: further development and testing of the GAN-based ensemble approach and adapting the GAN approach for temporal downscaling. The methods will be applied to NWP data of various spatial resolutions and domains to assess their performance in terms of probabilistic forecasting, physical consistency, realism, and computational requirements. The project aims to deliver machine learning solutions that can be integrated into other projects and will provide code repositories, documentation, and containers for ease of use. The ultimate goal is to incorporate the GAN approach into the DestinE Digital Twin Engine (DTE) workflow for weather forecasting.

II.2.5. Award criteria

Quality criterion - Name: Technical Solution Proposed / Weighting: 50

Quality criterion - Name: Management and Implementation / Weighting: 15

Quality criterion - Name: Track Record / Weighting: 5

Quality criterion - Name: Quality of Resources Deployed / Weighting: 10

Quality criterion - Name: Tenderer's Financial & Legal organisation / Weighting: 5

Price - Weighting: 15

II.2.11. Information about options

Options: no

II.2.13. Information about European Union funds

The procurement is related to a project and/or programme financed by European Union funds: yes

Identification of the project: Destination Earth initiative - <https://digital-strategy.ec.europa.eu/en/policies/destination-earth>

II.2.14. Additional information

Section IV: Procedure

IV.1. Description

IV.1.1. Type of procedure

Open procedure

IV.1.3. Information about a framework agreement or a dynamic purchasing system

IV.1.8. Information about the Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: no

IV.2. Administrative information

IV.2.1. Previous publication concerning this procedure

Notice number in the OJ S: [2023/S 071-217843](#)

IV.2.8. Information about termination of dynamic purchasing system

IV.2.9. Information about termination of call for competition in the form of a prior information notice

Section V: Award of contract

Contract No: ECMWF/DESTINE/2023/DE_371

Title:

DE_371 Machine Learning for Earth system Digital Twins

A contract/lot is awarded: yes

V.2. Award of contract

V.2.1. Date of conclusion of the contract

13/11/2023

V.2.2. Information about tenders

Number of tenders received: 5

The contract has been awarded to a group of economic operators: no

V.2.3. Name and address of the contractor

Official name: Norwegian Meteorological Institute

Postal address: Henrik Mohns plass 1

Town: Oslo

NUTS code: NO Norge

Postal code: 0313

Country: Norway

Internet address: <https://www.met.no/>

The contractor is an SME: no

V.2.4. Information on value of the contract/lot

Initial estimated total value of the contract/lot: 800 000,00 EUR

Total value of the contract/lot: 771 136,03 EUR

V.2.5. Information about subcontracting

Section VI: Complementary information

VI.3. Additional information

VI.4. Procedures for review

VI.4.1. Review body

Official name: European Centre for Medium-Range Weather Forecasts

Postal address: Shinfield Park

Town: Reading

Postal code: RG2 9AX

Country: United Kingdom

Internet address: <https://www.ecmwf.int/en/about/suppliers>

VI.4.3. Review procedure

Precise information on deadline(s) for review procedures:

See instructions on ECMWF's Suppliers web page: <https://www.ecmwf.int/en/about/suppliers>

VI.4.4. Service from which information about the review procedure may be obtained

Official name: European Centre for Medium-Range Weather Forecasts

Postal address: Shinfield Park

Town: Reading

Postal code: RG2 9AX

Country: United Kingdom

Internet address: <https://www.ecmwf.int/en/about/suppliers>

VI.5. Date of dispatch of this notice

15/11/2023