Copernicus Europe's eyes on Earth

Copernicus Joint Services

Call for Expression of Interest (EOI) for Training Experts

in the context of the Copernicus Climate Change (C3S) and Atmosphere Monitoring (CAMS) services.

EOI Ref: CJS2_156a
ISSUED BY: ECMWF Administration Department Procurement Section
Date: January 2024
Version: Update no. 1 (changes highlighted)

Funded by the European Union

Implemented by **ECMWF**

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1. Introduction to the ECMWF & European Copernicus Programme

The European Centre for Medium-Range Weather Forecasts (ECMWF) is an independent intergovernmental organisation supported by 34 states.

ECMWF is both a research institute and a 24/7 operational service, producing and disseminating numerical weather predictions to its Member States. This data is fully available to the national meteorological services in the Member States. The Centre also offers a catalogue of forecast data that can be purchased by businesses worldwide and other commercial customers. The supercomputer facility (and associated data archive) at ECMWF is one of the largest of its type in Europe and Member States can use 25% of its capacity for their own purposes.

The organisation was established in 1975 and now employs around 360 staff from more than 30 countries.

A description of ECMWF's activities and infrastructure can be found at:

http://www.ecmwf.int/en/about/what-we-do

The European Copernicus Programme is an EU-wide flagship programme that aims to support policymakers, businesses and citizens with enhanced environmental information. The programme reached operational status in 2014 and entered its second phase in summer 2021. For the period 2021-2028, a total budget of 5.3 B€ has been allocated to operate Copernicus and support both its space component (in particular the dedicated "Sentinel" satellite missions) and the services.

Copernicus also relies on a strong in situ and ground-based remote-sensing observation component, contributed to directly by European Member States as well as by international research networks. Copernicus benefits from satellite, in situ and ground-based remote-sensing observations provided by the wider international community, and it contributes to and benefits from the building up of the Global Earth Observation System of Systems (GEOSS) and the Global Framework for Climate Services (GFCS). Copernicus contributes to the European Green Deal, which is the overarching priority of the Von der Leyen Commission with the aim to make Europe the world's first climate-neutral continent by 2050.

Copernicus services provide information drawn from observational data sources and modelling capacities. They address six areas: three are thematic and refer to different components of the Earth-System (land, marine and atmosphere); the three others being "horizontal" or "cross-cutting" in scope (emergency management, security and climate change). The continuous evolution of the Services currently relies on funding from the European Research & Innovation Programme Horizon Europe and has previously relied on funding from the European Framework Programmes 6 , 7, and Horizon 2020, as well as initially from the European Space Agency. Most services and their components are operational. However, there are new service elements, such as for instance the anthropogenic CO_2 emissions Monitoring and Verification Support capacity, which are currently still in the build-up phase supported by Horizon Europe.

2. Scope and objective of Call for Expression of Interest (EOI)

The European Centre for Medium-Range Weather Forecasts (ECMWF) invites training experts to contribute to exciting training opportunities in the context of the Copernicus Climate Change (C3S) and Atmosphere Monitoring (CAMS) services.

Experts are invited to express their interest to join the roster being established for providing support as trainer in events throughout Europe and beyond, or as content creator of e-learning material and Jupyter notebooks, or as instructional designer of training activities and resources related to C3S and CAMS.

As two of the six services of the Copernicus Programme , C3S and CAMS have been entrusted by the European Commission (EC) to ECMWF. C3S provides authoritative information about the past, present and future climate, as well as tools to enable climate change mitigation and adaptation strategies by policy makers and businesses. CAMS provides consistent and quality-controlled information related to air pollution and health, solar energy, greenhouse gases and climate forcing, everywhere in the world.

Both C3S and CAMS are operational services that offer training to equip new and existing users with the necessary knowledge and skills to make the most of the data, products and tools that each service offers.

Experts are invited to express their interest and availability to be contracted to provide one or more of the following three types of consultancy support in C3S and CAMS related training activities:

1.   Expert Trainer: Contribute as a C3S and/or CAMS trainer in training events.

2.   Content Creator: Create training material for C3S and/or CAMS.

3.   Instructional Designer: Provide pedagogical support in training activities.

In each case, in addition to remuneration, the selected experts shall also have the opportunity to attend regular train-the-trainer events, collaborate with ECMWF and network with other expert trainers through workshops and networking events.

Further information and requirements are provided in Sections 9 and 10.

3. Applications for EOI and Timetable

Interested experts should apply by completing the online form on ECMWF's web page at the following link:

https://www.ecmwf.int/en/about/suppliers/copernicus-procurement/expression-interest-training-experts

The Call for Expression of interest is open to any natural persons and persons who are self-employed. The submitted application shall not contain generic profiles or subcontractors. An application shall refer to a single person.

ECMWF's aim is to enter into contracts with the accepted Experts as "individuals" for any future work assignments. Applicants who have any affiliations which would impose restrictions on entering into a contract as individual with ECMWF should provide this information and details by responding to the relevant question in the web application form.

This aspect will be individually assessed by ECMWF during the selection of any applicants and for assignment of works.

3.1   Contact
All communication for the EOI should be done via email addressed to CJS2_156a@ecmwf.int

3.2   Timetable

Call for EOI will be open on a continuous basis initially for two years. ECMWF may extend the duration or may choose to issue another call following two years.

Unless announced otherwise, all applications for the initial duration will be closed by *9 August 2024.* The first batch of applications will be retrieved by 15th April 2023. Each batch of applications thereafter will be retrieved on the 15th of the first month in each quarter. ECMWF aims to review each batch and inform successful and unsuccessful applicants within a month after.

Call for EOI publication date (start)	10 February 2023 onwards
Call for EOI will stay open until 9 August 2024	Evaluation of applications received and notification to successful and unsuccessful applicants will be done quarterly (minimum frequency)

ECMWF reserves the right to postpone the dates from those published in this document.

4.   Terms and Conditions of EOI

Applications are subject to these Conditions.

4.1   Eligibility

4.1.1   General eligibility

According to the Contribution Agreement between the European Union and ECMWF, participation in calls for tenders shall preferably be open to individuals with nationalities of Member States of the European Union and Copernicus participating states in accordance with the conditions laid down in the EU's Space Programme Regulation. The Regulation can be found at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.170.01.0069.01.ENG&toc=OJ%3AL%3A2021%3A170%3AFULL

It is currently ECMWF's expectation that, in practice, individuals with nationalities of other States may exceptionally be eligible and subject to specific scientific or other requirements (as specified in the tender documents) as well as express prior approval by an EU Procurement Board. Accordingly, ECMWF is required to reserve the right to exclude ineligible persons from tenders at any point in time. All applicants as well as their collaborators (if any) must meet all eligibility criteria throughout the whole duration of the procurement exercise as well as their prospective contracts.

4.1.2   Eligibility of United Kingdom (UK) and Swiss (CH) nationalities

The above applies also to applicants with nationality of Switzerland. At present, Switzerland is neither an EU Member States nor participating in the Copernicus component of the EU Space Programme.

During 2021-2023 the United Kingdom (UK) was also considered a non-contributing country for the second phase of the Copernicus Programme. However, on 4 December 2023 the UK and the European Commission signed an agreement finalising the UK's association to the Copernicus Programme (as well as to Horizon Europe). For the avoidance of doubt, from 1 January 2024 applicants with UK nationality are considered eligible.

ECMWF will publish relevant updates in this regard once they are available.

4.2 Early Detection and Exclusion System (EDES) Database

The purpose of the EDES is the protection of the European Union's financial interests. In particular, the EDES ensures:

- the early detection of persons or entities, which pose a risk to the Union's financial interests;
- the exclusion of persons or entities from receiving Union's funds (Article 135(1) of the Financial Regulation);
- the imposition of a financial penalty on a recipient (Article 138 of the Financial Regulation);
- the publication, in the most severe cases, on the Commission's internet site of information related to the exclusion and where applicable the financial penalty, in order to reinforce their deterrent effect (Articles 140 of the Financial Regulation).

ECMWF makes use of the EDES to verify whether individuals or organisations are suitable to receive funding from the EU.

The grounds for exclusion are listed under article 136(1) of the EU Financial Regulation. They include:

- bankruptcy and insolvency situations;
- non-payment of taxes or social security contributions;
- grave professional misconduct;
- fraud, corruption, participation in a criminal organisation etc.;
- serious breach of contract.

Applicants must confirm in their responses to the online form that they are NOT listed on the EDES database and must accept that the ECMWF will reject any applicant who is so listed.

4.3 EU Restrictive Measures

Restrictive measures (sanctions) are the tool in the EU's common foreign and security policy (CFSP), through which the EU can intervene where necessary to prevent conflict or respond to emerging or current crises.

The obligation to ensure compliance with the EU restrictive measures applies:

- to the EU institutions and bodies and to all EU contracting partners;
- not only at the initial distribution of funds but also down to the level of final beneficiary.

ECMWF, as the entrusted entity for the implementation of Copernicus Atmosphere Monitoring and Climate Change Services, must ensure that there is no detection of a recommended applicant (and any partners thereof) or grant applicant, co-applicants, affiliated entities in the list of EU restrictive measures, before signing a contract. This requirement is specifically detailed in clause 2.1.4, and clauses 2.9.2.2 (ii) and 2.9.5 of Volume V of the ITT documents, the Framework Agreement for Copernicus Services.

As a minimum, using the www.sanctionsmap.eu website, applicants must undertake "individual check" (using search function), and check of their collaborators (if any), or any other third parties involved in delivering products goods or services to Copernicus:

Applicants must confirm in their responses to the online form that they (and any partners thereof), or any co-applicants and affiliated entities are not in the list of EU restrictive measures.

Tenderers should note that, as this forms part of ECMWF's obligations to the EC, failure to comply with this requirement may lead to exclusion from the process.

4.4 The applicants shall not:

a. Consult, communicate or agree with any other applicant on any matter whatsoever related to the EOI;
b. Disclose its proposed price for the EOI, whether directly or indirectly, to any other applicant but this shall not preclude the applicant from publishing its standard list prices;
c. Make any attempt to induce any other person or organisation to submit or not to submit an application.

4.5 Validity

Expression of interests submitted by the experts and their rates shall remain valid for 6 months after the application submission date.

4.6 Confidentiality

ECMWF reserves the right to retain all documents submitted by applicants in response to the EOI. Any information in such documents that is proprietary and confidential to the applicants will be handled confidentially by ECMWF provided it is clearly and specifically identified as such. Such obligation shall not apply if such information is or was obtained from other sources that do not bind ECMWF as to confidentiality or if the information is in the public domain. ECMWF may make applicant's responses available for evaluation purposes to authorised people including its governing body, committees, and professional advisers in addition to ECMWF's own personnel under the same conditions of confidentiality.

Please also note that all personally identifiable information (PII) processed by ECMWF will be treated in accordance with the ECMWF Policy on Personally Identifiable Information Protection (PIIP). It is available at https://www.ecmwf.int/en/privacy. ECMWF shall process all PII submitted by your response for the sole purposes of assessing your response. In doing so, ECMWF may share such PII with consultants or external advisors.

5. Evaluation and acceptance of experts onto the roster

Applications should be done for one or more of the following three expert categories (Please see Section 10 for further information):

- Expert Trainer
- Content Creator
- Instructional Designer

Application of the experts will be evaluated and accepted onto the roster based on pass/fail approach as specified in the table below.

High level evaluation criteria	Weighting
Price: In order to pass, experts must propose a fee rate that does not exceed the rate specified in Table in Section 6 for the corresponding profile and years of experience which best fit the profile of the expert.	**Pass/fail** *(in accordance with the max rates specified in Section 6)*

Quality: In order to pass, all experts must have: - At least a university Masters degree or equivalent in a relevant subject (as specified in 10.1) - A minimum of three years of relevant experience (as specified in 10.3) - At least one of the four sets of skills and experiences listed in the four sections from 10.4.1 to 10.4.4, demonstrated in either academic achievements and/or professional experience. - Excellent communication skills demonstrated in either academic achievements and/or professional experience.	Pass/fail *(in accordance with the requirements specified in this document and under Sections 4, 8 and 10)*

Prices/rates will be a part of the evaluation criteria for future assignment of works under the roster.

6. Rates and Remuneration

Experts should specify their daily rates in the application form.

ECMWF has established the following fee rates for these services which applicants must consider for their responses to prices/rates:

	Tasks/Requirements	Maximum fee rates (€/day)	
		+ 3 years of relevant experience	+7 years of relevant experience
Expert Trainer	Gives lectures and guide practical sessions at events - needs to be domain specialist and excellent communicator	€ 720.00	€ 920.00
Content Creator	Produce e-learning modules, Jupyter notebooks, other material - needs to be domain specialist	€ 680.00	€ 880.00
Instructional Designers	Advise on how best to structure educational programmes - solid pedagogical skills, not necessarily domain experts	€ 620.00	€ 820.00

Notes:
- Years of relevant experience can include the period covered by a PhD
- Fee rates are based on 8 hour working days.
- Fees shall include overheads and other indirect costs.
- Travel costs are accounted for separately.
- Fee rates subject to review upon end of the initial two years

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These rates are the maxima acceptable for applying to the roster, and for any future works assigned. In addition, the proposed rate can be lowered via negotiation for future assignments depending on the assessment of the available expertise in the contacted experts or the requirements of that particular assignment.

These daily rates specified by the experts should exclude any expenses under future work assignments.

Expenses for each work assignment to be contracted will be handled separately and in line with ECMWF rules and regulations with regards to travel and allowances which can be found at https://www.ecmwf.int/sites/default/files/medialibrary/2017-08/ECMWF_staff_regulations.pdf

7. Assignment of tasks

Upon acceptance, successful experts shall be placed on a roster which will be maintained by ECMWF.

The training services to be issued by ECMWF under the roster will vary in required expertise, size, delivery time and complexity required.

For work assignments with an estimated value up to €50,000, ECMWF envisages to place direct orders with the expert(s) chosen from the list. The selection will be done in accordance with the requirements of the work and an expert's suitability for the work assignment. In these cases, ECMWF will identify priority requirements for the work (expertise, delivery time, budget, complexity, etc) and will judge an expert's suitability for the work based on some or all of the following:

• Specialist expertise and/or experience

• Geographic location and networks

• Price and value for money

• Capacity, training/content material/training design format and approach

• Project management requirements

• Time scales

For work assignments with an estimated total value exceeding €50,000, ECMWF will carry out a mini competition amongst the identified experts on the roster. Evaluation criteria for these mini competitions will be advertised as part of the mini competition.

ECMWF may choose to issue an Invitation to Tender (ITT) for requirements/assignments of work which exceeds 200K Euros in total budget.

Price will be an evaluation criterion for all value and types of work assignments.

ECMWF will inform each expert about their acceptance or otherwise to the roster.

Inclusion in the roster does not automatically guarantee an award of work.

8. Terms and Conditions of contract

The terms and conditions of contract for future assignments under the roster are at Annex 2.

All selected experts will be engaged on the same terms and conditions. The applicants are required to confirm their acceptance of the Terms and Conditions at Annex 2 by responding to the relevant question of the online form.

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9. Expected tasks

The expected tasks of each of the three types of support activity are outlined here. Experts may express an interest in at least one or more of these activity domains.

Selected experts shall have the opportunity to attend train-the-trainer events to update them on developments with C3S and CAMS, including any new datasets, tools, service elements, future plans and strategic vision. These events shall be organised periodically, when sufficient changes warrant a refresher course for trainers. Events shall also be organised where selected experts can meet ECMWF staff and contractors from both services, and network with other experts to foster collaboration.

9.1 Provide support as trainer during events

This task involves the provision of expert support as trainer in C3S and/or CAMS training events.

C3S and CAMS training events are organised in response to specific training needs from new and existing users of both services. Analysis of user requirements and the definition and organisation of training events are carried-out by ECMWF and its contractors and are outside the scope of this task.

The trainings are mainly targeted to technical specialists from various backgrounds and scientific domains. The training approach shall focus on capacity building and "train the trainers" to achieve maximum impact with available resources.

The format and duration of trainings may vary. Some may take place online, some face-to-face, others blended. Some trainings may be intensive courses lasting over one or more weeks, others may comprise single sessions, or multiple sessions distributed over time. The number of participants per training event may range from small classes of learners to events which may foresee a large participation, such as MOOCs or webinars.

The teaching methodology of trainings shall be suggested by instructional designers according to the type of training and target audience. Methods may include teacher or learner-centred approaches, flipped classroom, or other formats. However, a significant portion of the trainings shall be practical and interactive. They are likely to include Python based practical sessions using Jupyter notebooks, classroom sessions, lectures, discussions, question and answer sessions, and other similar elements. Practical assignments shall be given, followed by feedback and assessment.

Training experts employed to carry-out this task shall:

- Engage with learners and ensure their active participation.
- Understand learners' needs, level of competence and any knowledge gaps or skills deficiencies.
- Communicate clearly, effectively and at a pace suitable for the learners.

Experts may be asked to travel to various locations for in-situ training. These would mainly be in Europe, but possibly also outside of Europe, such as in the case of capacity building events in Africa or other continents. If required to travel, the travel costs incurred by experts shall be reimbursed and a per-diem provided for expenses whilst on mission.

Experts employed to carry-out this task shall have excellent command of the English language and be able to effectively communicate in English to a wide range of target audiences. Should experts have skills in languages other than English, they may be requested to provide training in these languages.

9.2   Provide support in development of training material as content creators

Experts employed as content creators shall support the development of training material for C3S and/or CAMS training activities. The training material shall be developed in accordance with specific user requirements and shall target the same users as described in section 9.1.

This material may include one or more of the following formats:

- Presentations
- Jupyter notebooks
- E-learning modules (e.g. as created in Articulate Storyline, or similar content authoring tools)

Content creators may also be requested to provide input in other formats, such as videos, podcasts, web content, etc.

Experts employed as content creators may be required to engage with the following entities:

- Learners, identified by ECMWF, to ensure user relevance of the material.
- Instructional designers, to guide the development and ensure educational value.
- Technical experts identified by ECMWF, and ECMWF staff, for quality control and to ensure compliance with guidelines on branding, format and standards.
- Graphic designers and technical experts.

Any material developed by content creators shall be clearly credited and labelled with the details of the author. The Jupyter notebooks shall be Open Source, under the Apache License 2.0, while other material may be made available under different licences.

Content creators shall have excellent command of the English language and be able to write clear and concise text in English to effectively communicate to a wide range of target audiences.

9.3   Provide support as instructional designer

Experts retained to carry-out this task shall support the creation of training material and/or the organisation of training events for C3S and CAMS as instructional designer.

Instructional designers shall support ECMWF in the following:

1. Determining the state and needs of particular learners or categories of learners
2. Defining the end goal of instruction
3. Planning and designing the most appropriate learning experience to help the learner reach the end goal of instruction

Instructional designers shall support and advise content creators and training course organisers to ensure effective, engaging and inspiring acquisition of knowledge.

Instructional designers shall have excellent command of the English language and be able to effectively communicate in English.

10. Profiles of experts

Experts shall have at least one of a number of possible profiles as outlined in this section.

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10.1 Education

All experts employed to support any of the three tasks shall have at least a university Masters degree or equivalent in a relevant subject.

10.2 Skills and Experience

All experts should have the core skills and experience, and meet the requirements of at least one of the additional skills and experience listed below.

10.3 Core skills and experience

Experts are expected to have excellent knowledge in big data retrieval and handling. Specific knowledge of Earth Observation and model derived data, information products and applications is also required, as well as having exposure to environmental and/or climate services. They should also understand where C3S/CAMS fit in the data value chain and be familiar with users and downstream service providers.

Experts shall also be expected to maintain an interest in the evolution of C3S and CAMS as programmes, and to attend train-the-trainer events to remain updated on service developments.

All experts need to have minimum 3 years of total experience. Years of relevant experience can include the period covered by a PhD.

Expert trainers will give lectures and guide practical sessions at events and need to be domain specialist as well as excellent communicators. This should be evidenced in experts' applications. Content Creators will produce e-learning modules, Jupyter notebooks and other materials and needs to be domain specialists. This should be evidenced in experts' applications.

Instructional designers will advise on how best to structure educational programmes and need to have solid pedagogical skills but not necessarily domain experts. These should be evidenced in experts' applications.

10.4 Additional skills and experience

Experts shall have at least one of the four sets of skills and experiences listed respectively in the four sections from 10.4.1 to 10.4.4 below.

10.4.1 Climate and/or atmospheric science

This includes at least one of the following:

- modelling
- atmospheric chemistry
- climate science
- climate/atmospheric science in related sectors, e.g. public health, hydrology, energy, agriculture and/or other sectors supported by the C3S Sectoral Information Systems (SIS)

10.4.2 Statistics and data science

This includes at least one of the following:

- data assimilation
- statistical downscaling
- data mining or machine learning

10.4.3 Computing

Python programming: experience with ECMWF packages, in addition to the standard scientific libraries such as Numpy, Pandas, Xarray and others.

Preferably also experience with ECMWF data in MARS and use of HPC.

10.4.4 Instructional design

Proven experience in instructional design. Knowledge of instructional design models and their application to training related to climate change and/or atmosphere monitoring.

10.5 Personal attributes

Experts are expected to have the following personal attributes:

- Excellent interpersonal and communication skills;
- Excellent team-working skills, pro-active attitude and ability to work autonomously with a minimum of supervision under high workloads;
- Critical and visionary thinking.

Annex 1 Example request for service

This section contains example "requests for service" for each of the three profiles of ECMWF Copernicus training expert. These are provided as information only for the applicants to enable them to understand future work assignments. Applicants **are not** required to provide any responses to this section.

Each example includes typical scenarios in which experts may be engaged and be requested to quote against.

1. Expert support to ECMWF Copernicus training events (EXAMPLE)

Training experts shall be tasked with providing support as trainer during C3S and/or CAMS training events as described in [REF to section 1.1 of EoI_ECMWF_Copernicus_training_experts_v02]. The format, duration and target audiences of the trainings will vary according to the specific needs and objectives of the trainings. This is an example of how a request for service may look for a typical scenario in which a trainer may be engaged to provide support to two (in this case fictitious) training events, one online, another face-to-face.

1.1 Tasks

The contractor shall provide support as expert trainer in the following two training events:

Training event	Training event description	Date	Tasks for contractor
#1	Training event #1 (masters students, online event)	xxxx	2 x 45 minute webinars. Total of 1.5 hours of training.
#2	Training event #2 (energy sector professionals, in-situ)	xxxx	2 x 2h practical sessions. Total of 4 hours of training.

In preparation for the trainings, the contractor shall engage with training event organisers, representatives of the target audiences and other stakeholders to understand the needs of learners and objectives of the training. The contractor shall also gain familiarity with existing training materials, or assist content creators in creating or adapting existing materials to meet the needs of the target audiences. In total **8 days of support over 9 weeks** is foreseen.

The specific tasks are described in the following work packages.

1.2 Work packages

1.2.1 Work package 1

WP 1 Title
Training support to training event #1
WP 1 Description
The contractor shall provide 2 webinars at training event #1 on the following topics 1. Guided practical on data access, processing, visualisation of C3S data. 2. Guided practical on data access, processing, visualisation of CAMS data.
WP 1 Deliverables
• Meeting minutes #1 • Event recording #1 • Final training report #1, including feedback from learners.

1.2.2   Work package 2

WP 2 Title
Training support to training event #2
WP 2 Description
The contractor shall guide students in classroom sessions through a number of practical exercises focused on exploitation of climate data from C3S for climate adaptation planning in the energy sector.
This is an on-site event which takes place at #### location. Mission expenses, including travel, hotel and per diem will be reimbursed according to the terms and conditions as specified in ####.
WP 2 Deliverables
• Meeting minutes #2 • Final training report #2, including feedback from learners.

1.3   Timeline and payment milestones

Weeks from date T	Task/activity	Payment milestone	Associated deliverable
T + 0	Contract Kick-Off		
T + 2	Programme definition event #1	M1	Meeting minutes #1
T + 4	Training event #1	M2	Event recording #1
T + 5	Feedback report event #1	M3	Final report #1
T + 6	Programme definition event #2	M4	Meeting minutes #2
T + 8	Training event #2	M5	
T + 9	Feedback report event #2	M6	Final report #2

2.   Educational content creation to support ECMWF Copernicus training activities (EXAMPLE)

Content creators shall be tasked with developing training material for C3S and/or CAMS training activities, as described in [REF to section 1.2 of EoI_ECMWF_Copernicus_training_experts_v02]. This is an example of how a contract may look for a typical scenario in which a content creator may be engaged to create two different types of training materials: one a Jupyter notebook tutorial, and the other an Articulate Storyline e-learning module.

2.1   Tasks

The contractor shall provide in total 12 days of support to create the following education materials:

Educational material	Description
#1	E-learning module on statistical and dynamical downscaling. Intended target audience: Masters level students. Expected effort: 6 days
#2	Jupyter notebook tutorial on statistical downscaling of C3S data using higher resolution local data. Intended target audience: User group A, working in Sector B, from Region C. Expected effort: 6 days

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The educational materials shall be prepared in close collaboration with selected members of the intended target audience, instructional designers, graphic designers and technical experts identified by ECMWF.

The specific tasks are described in the following work packages.

2.2   Work packages

2.2.1   Work package 1

WP 1 Title
Create e-learning module on statistical and dynamical downscaling
WP 1 Description
The contractor shall create an e-learning module for approximately 1 hour of learning on statistical and dynamical downscaling targeted at masters level students. The learners are assumed to have some limited background in statistics and Earth system modelling. Some travel may be expected to facilitate collaboration with selected members of the intended target audience, instructional designers, graphic designers and technical experts identified by ECMWF. In this case, mission expenses, including travel, hotel and per diem shall be reimbursed according to the terms and conditions as specified in ####.
WP 1 Deliverables
• Requirements analysis report #1 • Mock-up of e-learning module • Final e-learning module created in an e-learning format (e.g. Articulate Storyline) compliant with e-learning formats (e.g. SCORM, xAPI), to be inserted into a Learning Management System (LMS)

2.2.2   Work package 2

WP 2 Title
Create Jupyter notebook tutorial on statistical downscaling
WP 2 Description
The contractor shall create a Jupyter notebook tutorial for approximately 1 hour of learning on statistical downscaling of C3S data using high resolution local data identified by representatives of the intended target audience. The Jupyter notebook shall be based on Python, and shall comply with best practices in education and in coding (e.g. PEP8 compliance). Some travel may be expected to facilitate collaboration with selected members of the intended target audience, instructional designers, graphic designers and technical experts identified by ECMWF. In this case, mission expenses, including travel, hotel and per diem shall be reimbursed according to the terms and conditions as specified in ####.
WP 2 Deliverables
• Requirements analysis report #2 • Mock-up of Jupyter notebook • Final Jupyter notebook tutorial, in .ipynb format

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2.3   Timeline and payment milestones

Weeks from date T	Task/activity	Payment milestone	Associated deliverable
T + 0	Contract Kick-Off		
T + 2	#1 Requirements analysis	M1	Requirements analysis report #1
T + 3	#2 Requirements analysis	M2	Requirements analysis report #2
T + 4	#1 Critical Design Review	M3	e-learning module mock-up
T + 5	#2 Critical Design Review	M4	Jupyter notebook mock-up
T + 8	#1 Final delivery (result of development, testing and validation)	M5	Final e-learning module
T + 9	#2 Final delivery (result of development, testing and validation)	M6	Final Jupyter notebook

3. Instructional design to support ECMWF Copernicus training activities (EXAMPLE)

Instructional designers shall be tasked with providing support and guidance in ECMWF Copernicus training activities as described in [REF to section 1.3 of EoI_ECMWF_Copernicus_training_experts_v02]. This is an example of how a contract may look for a typical scenario in which an instructional designer may be engaged.

3.1   Tasks

The contractor shall provide in total 32 days of support, over one year, in planning and designing the most appropriate learning experience in the context of the following activities:

1. Educational material development A
2. Training event organisation B
3. Training activity C
4. Massive Open Online Course D

Work shall be carried-out in close collaboration with learners, training event organisers, educational content creators, and other stakeholders identified by ECMWF.

The specific tasks are described in the following work packages.

3.2   Work packages

3.2.1   Work package 1

WP 1 Title
Support to educational material development A
WP 1 Description
Provide support to the following:

    4.   Determining the state and needs of learners
    5.   Defining the end goal of instruction

6. Planning and designing the most appropriate learning experience to help the learner reach the end goal of instruction Some travel may be expected. In this case, mission expenses, including travel, hotel and per diem shall be reimbursed according to the terms and conditions as specified in ####.
WP 1 Deliverables
• Report #1a (recommendations) • Support during development (meeting minutes, emails) • Report #1b (feedback)

3.2.2   Work package 2

WP 2 Title
Support to training event organisation B
WP 2 Description
Provide support to the following: 1. Determining the state and needs of learners 2. Defining the end goal of instruction 3. Planning and designing the most appropriate learning experience to help the learner reach the end goal of instruction Some travel may be expected. In this case, mission expenses, including travel, hotel and per diem shall be reimbursed according to the terms and conditions as specified in ####.
WP 2 Deliverables
• Report #2a (recommendations) • Support during development (meeting minutes, emails) • Report #2b (feedback)

3.2.3   Work package 3

WP 3 Title
Support to training activity C
WP 3 Description
Provide support to the following: 4. Determining the state and needs of learners 5. Defining the end goal of instruction 6. Planning and designing the most appropriate learning experience to help the learner reach the end goal of instruction Some travel may be expected. In this case, mission expenses, including travel, hotel and per diem shall be reimbursed according to the terms and conditions as specified in ####.
WP 3 Deliverables
• Report #3a (recommendations) • Support during development (meeting minutes, emails) • Report #3b (feedback)

3.2.4   Work package 4

WP 4 Title
Support to Massive Open Online Course D
WP 4 Description
Provide support to the following:

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7.	Determining the state and needs of learners		
8.	Defining the end goal of instruction		
9.	Planning and designing the most appropriate learning experience to help the learner reach the end goal of instruction		

Some travel may be expected. In this case, mission expenses, including travel, hotel and per diem shall be reimbursed according to the terms and conditions as specified in ####.

WP 4 Deliverables

- Report #4a (recommendations)
- Support during development (meeting minutes, emails)
- Report #4b (feedback)

3.3 Timeline and payment milestones

Months from date T	Task/activity	Payment milestone	Associated deliverable
T + 0	Contract Kick-Off		
T + 2	Educational material development A, recommendations	M1	Report #1a
T + 3	Training event organisation B, recommendations	M2	Report #2a
T + 4	Training activity C, recommendations	M3	Report #3a
T + 5	Massive Open Online Course D, recommendations	M4	Report #4a
T + 6	Educational material development A, feedback	M5	Report #1b
T + 8	Training event organisation B, feedback	M6	Report #2b
T + 10	Training activity C, feedback	M7	Report #3b
T + 12	Massive Open Online Course D, feedback	M8	Report #4b

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Annex 2 Terms and Conditions of Contract "Agreement for Copernicus"

See separate document

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