

ECMWF Copernicus Procurement

Invitation to Tender



Copernicus Climate Change Service

Provision of a Massive Open Online Course
(MOOC) on climate

Volume II

ITT Ref: COP_049
ISSUED BY: ECMWF Administration Department Procurement Section
Date: 28 March 2019
Version: Final



Funded by the European Union

Implemented by



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1. Introduction and scope of work

The [Copernicus Climate Change Service](#) (C3S) implemented by ECMWF, supports society by providing authoritative information about the past, present and future climate in Europe and the rest of the World.

C3S are looking to extend the contents of their learning services with a **Massive Open Online Course (MOOC)** to provide a free course on climate science applied to sectoral climate-sensitive decisions.

There are already several readily available on-line courses on climate. This MOOC will provide tools to understand and use the open data served by C3S via the [Climate Data Store \(CDS\)](#) for applications that demonstrate how climate data can be accessed, transformed and made relevant to address specific contexts. In this way, the MOOC will differentiate itself from the existing market in being specific to the C3S mission and products. The MOOC design will also make it an engaging learning experience.

Our C3S data and tools are used for a variety of purposes, for example for climate risk management, climate change impact assessments and climate adaptation strategies. The potential audience include research and science communities, consultants, down-stream service providers, planners and policy makers, industry, the media and the public. Besides these audiences, we also want to address the needs of trainers/teachers who may want to use the MOOC itself to deliver their courses.

C3S are seeking a supplier who will provide an end-to-end MOOC service covering course development, instructional design, content production, interactivity and course delivery. We anticipate the Tenderer to run the first instance of such MOOC over a four-week period.

The MOOC contents should be completed by end of September 2019, to allow its launch during the C3S General Assembly to be held in October 2019. The MOOC itself will be conducted in Q4 2019 or Q1 2020 at the latest.

Background to C3S is described in Section 2 and technical requirements are highlighted in Section 3 of this document.

2. Background to C3S

The C3S mission is to support adaptation and mitigation policies of the European Union by providing consistent and authoritative information about climate change. We offer free and open access to climate data and tools based on the best available science. We listen to our users and endeavour to help them meet their goals in dealing with the impacts of climate change.

C3S is one of [six thematic information services](#) provided by the [Copernicus Earth Observation Programme](#) of the European Union. Copernicus is an operational programme building on existing research infrastructures and knowledge available in Europe and elsewhere. C3S relies on climate research carried out within the World Climate Research Programme (WCRP) among others, and responds to user requirements defined by the Global Climate Observing System (GCOS). C3S provides an important resource to the Global Framework for Climate Services (GFCOS).

C3S is implemented by the [European Centre for Medium-Range Weather Forecasts \(ECMWF\)](#) on behalf of the European Commission. ECMWF is an independent intergovernmental organisation serving its Member and Co-operating States and the broader community.

ECMWF's work complements the established range of meteorological and environmental services that each European country already has in place. We derive maximum benefit from the existing infrastructure and knowledge by involving national climate service providers as well as relevant academic communities in the implementation of C3S.

3. Technical requirements

The ITT contains two work packages

WP0: Management

WP0 covers the overall management of the contract. This shall include:

- Managing the work execution and delivery
- Providing to ECMWF:
 - monthly progress updates
 - Quarterly implementation Reports on 15 July and 15 October 2019, 15th January and 15th of April 2020 using the template as provided by ECMWF at the start of the contract
 - Final Report to be submitted at the latest 60 days upon the closure of the contract using the template as provided by ECMWF at the start of the contract
 - A financial audit opinion to be submitted together with the Final Report and in line with the requirements as specified in Clause 2.3.4.3 of the Terms and Conditions.
- Ensuring that the programme contents and branding are consistent with the C3S User Learning Services (technical platform, training resources)
- Ensuring the delivery of the MOOC runs smoothly (access to technical platform for trainees)
- Providing an appropriate communication plan to include channels, key messages and target communities who will be approached to promote the MOOC.

WP1: Course design and delivery

This work package consists of three tasks.

TASK 1: Development of the course design, its story line and a communication strategy

The MOOC shall be self-paced and can be run either moderated (interactions with experts happen via webinars and fora) or not. Content shall be in bite size, to allow reuse in different training contexts. It shall contain up to 12 hours of content which support the overall learning objectives. The MOOC shall be constructed in a modular way.

A glossary shall be provided with definition of relevant concepts and any technical term. The MOOC shall

contain a course evaluation section where participants can provide their feedback.

The course will contain multimedia materials, graphics, exercises, assessment items, web-based tools, web-apps and interactive exercises. Where videos are included, they shall not be longer than 2-3 minutes. Graphical images shall be simple to appeal to a general audience, but convey the message appropriately. Moreover, it would be beneficial if tools for practical applications within the CDS can be provided (for example scripts to be shared using Jupyter Notebook)

The MOOC should be designed in a way that, after completing it, the learners shall:

- Understand the wealth of data that the C3S service provides and what its potential applications are in real life climate change adaptation cases and climate monitoring.
- Understand the datasets and information, as well as the related quality assurance documentation, made available at the CDS
- Proficiently discover, visualise, process and manipulate data using the web apps and tools provided by C3S
- Be able to use the C3S toolbox
- Understand why one should care about climate change
- Understand the terminology used in climate change science and how this relate to the specific sector application/policy making
- Be able to evaluate scientific evidence about climate change and global warming

Moreover, learning assessments shall be provided using different forms such as quizzes, exercises, peer-to-peer review and self-assessment. The option to receive a certificate upon successful completion of the MOOC shall be available. In order to receive a certificate of completion learners must complete all modules and successfully pass any associated quiz.

Key deliverables

- The course design including: methodology, approach to engage with the learners and attract them to finish the course, topics, length, communication activities to promote the course, list of experts/partners who will be contributing to the preparation of the MOOC.
- A compelling storyline which targets the expected audience and allows participants to achieve the learning objectives stated in this document.
- Communication plan which identifies key stakeholders, communication channels and key message

Task 1 shall be completed within one month of the contract signature

TASK 2: Generate MOOC content and include it in the C3S User Learning Services digital platform

The successful Tenderer shall deliver the educational material that has been defined in the first task and test and optimise it with a subset of potential participants.

The successful Tenderer shall:

1. Liaise with recognized experts in the field and expert communities in generating the MOOC contents;

2. Design, develop and implement educational content and complete the production of lessons, videos (scripting), filming and editing, web-based tools, web-apps, interactive exercises;
3. Adapt, repurpose and implement existing learning content
4. Perform the commissioning and production of any original animation or graphics;
5. Contact companies, and stakeholders, in liaison with ECMWF/C3S to gather relevant material that can be used for the course;
6. Perform the editing and post-production of lesson videos and any additional animation resources, (including existing footage and animations if included);
7. Design and develop web-based tools, web-apps, (and/or re-purpose existing interactive tools), and interactive exercises to accompany course;
8. Design and develop an assessment methodology that suits the course approach and objectives, and delivers the corresponding educational material;
9. Use the same platform as the C3S User Learning Services (<https://uls.climate.copernicus.eu>). The successful Tenderer will have access to the platform and its user guide/tutorials to familiarise themselves with it.

The successful Tenderer shall test the MOOC when completed by using a small subset of learners to ensure that technical issues have been recognised and resolved.

Key deliverables

- Educational Content: This shall contain the MOOC educational material including multimedia material, graphics, exercises and assessment items
- Test Report demonstrating how the MOOC has been optimised using feedback from a subset of potential users both on the content and technical quality of the MOOC, including the testing of such.

Task 2 shall be completed within four months of contract signature

Task 3: Deliver, promote, monitor and evaluate the MOOC

The successful Tenderer shall deploy the MOOC and collect and evaluate different levels of feedback and statistics (for example Google analytics). Detailed metrics for evaluation of the course shall be defined at a kick-off meeting with ECMWF.

The successful Tenderer shall promote the course to various communities (especially to those mentioned as being the target audience), deliver the course (in a moderated fashion for the first instance of it), gather the feedback from user communities, manage and respond to student inquiries, oversee test marking and provide an analysis of the effectiveness of the course against the initial objectives.

Key deliverables

- Course delivery (to be launched before the end of 2019 or early 2020)
- Report on feedback and metrics (KPIs) after the MOOC deployment is completed

4. General requirements

4.1. Deliverables

Expected top level deliverables are outlined in section 3. These can be in the form of documents or reports, training resources and course delivery. Some additional deliverables may be agreed with the successful tenderer during the negotiation stage.

The training content will be developed under the Creative Commons Attribution-Non-Commercial-No-Derivatives-4.0-Unported Licence (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) or equivalent alternative.

Tenderers are advised to take into account the relevant terms and conditions on IPR as laid down in “Clause 3: Intellectual Property Rights” of Volume V Framework Agreement.

4.2. Documents and reports

All project reports, learning material (video, quizzes, textual content, etc) and other documents shall be produced in English. The quality of these shall be equivalent to the standard of peer-reviewed publications and practice. Unless otherwise agreed by ECMWF, documents and reports shall be made available to ECMWF in electronic format (PDF/Microsoft Word/Microsoft Excel or compatible).

4.3. Key Performance Indicators

The success of the MOOC shall be measured with appropriate metrics which will be used to improve the course or part of it. Such metrics or KPIs shall be specified as part of the bid and they will relate to the quality of the resources, the uptake of the course as a whole, learners experience, the interactivity and the reach in terms of communities. These KPIs may be refined, in agreement with ECMWF, during the lifetime of the contract.

5. Tender format and content

General guidelines for the tender are described in Volume IIIB. Specific requirements to prepare the proposal for this particular tender are described in the next subsections.

The Tenderer shall provide an executive summary of the proposal, describing the objectives, team and service level.

5.1. Page limits

As a guideline, it is expected that individual sections of the Tenderer’s response do not exceed the page limits listed below. These are advisory limits and should be followed wherever possible, to avoid excessive or wordy responses.

<i>Section</i>	<i>Page limit</i>
<i>Track Record</i>	2 (for general) and 2 (per entity)
<i>Quality of Resources to be Deployed</i>	2 (excluding Table 1 in Volume IIIB and CVs with a maximum length of 2 pages each)
<i>Methodology and tools</i>	2 + 3 per Work package (Table 2 in Volume IIIB, the section on references, publications, patents and any pre-existing IPR is excluded from the page limit and has no page limit)
<i>Management and Implementation</i>	10 (excluding Table 3, Table 5 and Table 6 in Volume IIIB) + 2 per each work package description (Table 4 in Volume IIIB)
<i>Pricing Table</i>	No limitation

5.2. Specific additional instructions for the Tenderer's response

The following is a guide to the minimum content expected to be included in each section, additional to the content described in the general guidelines of Volume IIIB. This is not an exhaustive description and additional information may be necessary depending on the Tenderer's response.

5.3. Track Record and quality of resources to be deployed

The tenderer shall demonstrate for itself and for any proposed subcontractors that they have experience with relevant projects in the public or private sector at national or international level, including solid experience in developing learning content and design, delivering and evaluating MOOCs. ECMWF encourages innovation in the provision of learning services, therefore the Tenderer shall provide evidence of successful learning initiatives including audiences and description of innovative solutions. ECMWF may ask for evidence of performance in the form of certificates issued or countersigned by the competent authority.

The Tenderer shall also propose a team with the skills required for providing operational services that meet the technical requirements set out in section 3.

5.4. Methodology and tools

The Tenderer should demonstrate their understanding of C3S services, the market addressed and the customer base.

The Tenderer shall describe their proposed approach including the methodology and tools for delivering the requirements specified in Section 3.

Tenderers should demonstrate their capacity to deliver state-of-the-art design, didactics and course materials for the MOOC. Tenderer's proposal should also evidence that there is strong user focus in

developing training resources, a sound plan for Subject Matter Experts engagement and for assessment and use of the data generated by the MOOC.

This section shall also include information on any subcontractors that are used as part of the solution.

5.5. Management and Implementation

Tenderers shall provide an implementation plan of proposed activities for the duration of the contract. For each work package, the template as proposed in Volume IIIB should be used and the work package numbering as presented in Section 3 should be followed.

Deliverables should be consistent with the technical requirements specified in section 3, additional deliverables may be added if required. The number of milestones is not restricted, but they should be designed as markers of demonstrable progress in service development and/or quality of service delivery.

Tenderers are free to make proposals that they consider necessary for the effective management and implementation of the contract.

Tenderers shall also provide a list of sub-contractors (if applicable) describing their contribution and key personnel, legal names and addresses.

5.6. Pricing

Tenderers are expected to determine their price using the MS Excel files provided in as included in Volume IIIA.