ECMWF Copernicus Procurement

Invitation to Tender

Copernicus Climate Change Service Volume II

Sectoral Information System to Support Disaster Risk Reduction

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1   Introduction

ECMWF as the Entrusted Entity for the Copernicus Climate Change Service (C3S) invites tenders for services related to operational service provision.

C3S aims to provide information to support the development of a climate resilient society. Through the Sectoral Information System (SIS), C3S has already procured 7 Proof of Concept elements (POCs), addressing the needs of sectoral users in water, energy, insurance, agriculture and urban-management sectors in Europe. In addition, in 2017 ECMWF built upon the experience gained from the POC contracts, and signed a further 7 operational services that will address user requirements in the following areas; European health, coasts, fisheries (marine) and tourism, as well as global services addressing hydrology, agriculture and shipping. The existing SIS contracts are developing datasets and tools based on the Climate Data Store (CDS) infrastructure. Outputs include Global, European and regional Climate Impact Indicators (CII), Essential Climate Variables (ECVs) and tools, Python scripts built using the CDS python libraries that run on the CDS Toolbox, to develop user driven, sector specific services.

The SIS contracts are expected to fulfil the following three top level requirements:

1. To provide a working example of how the data and the tools available on the Climate Data Store (CDS) could be used in specific user relevant contexts.
2. To engage with the users to scope out and document what they need.
3. To provide examples of good practice in the development of climate services.

Specific objectives and technical requirements are described in section 3 of this document. General performance requirements are presented in section 4 and information about the tender format and content is in section 5.

2   The Climate Data Store and Toolbox

The purpose of this section is to clarify the context of this tender and to briefly describe the relevant outcomes of current activities to implement the CDS and Toolbox initiated by C3S. Specific technical requirements for the additional work to be carried out under this tender are described in Section 3 of this document.

The backbone of the C3S is a cloud-based Climate Data Store (CDS) that provides users with a single point of access to quality-assured data on climate. The datasets may be physically located at various data centres around the world, or they may be distributed in the cloud, but this will be transparent to users of the CDS. All data procured by Copernicus will be open and free, and can be used by anyone for any purpose. Copernicus will also provide access to third party data with different data license. To facilitate the transformation of data into tailored information products, the CDS features a toolbox for creating workflows and applications on-line. All CDS data and tools will be accessible from the C3S website as well as via open Application Programming Interfaces (APIs). The first public release of the CDS took place on 14 June 2018.

CDS DATA CATALOGUE. The CDS provides access to climate datasets via a searchable catalogue. Categories of data include: Climate Data Records (CDRs) and Interim Climate Data Records (ICDRs), quality-controlled archives of in-situ climate observations, reprocessed satellite data records, data from climate reanalyses, seasonal forecast data, output from climate model simulations, and a variety of derived climate impact indicators. Multiple datasets are available in each category, e.g. for 22 of the GCOS Essential Climate Variables (ECVs), on global or regional domains, with varying spatial

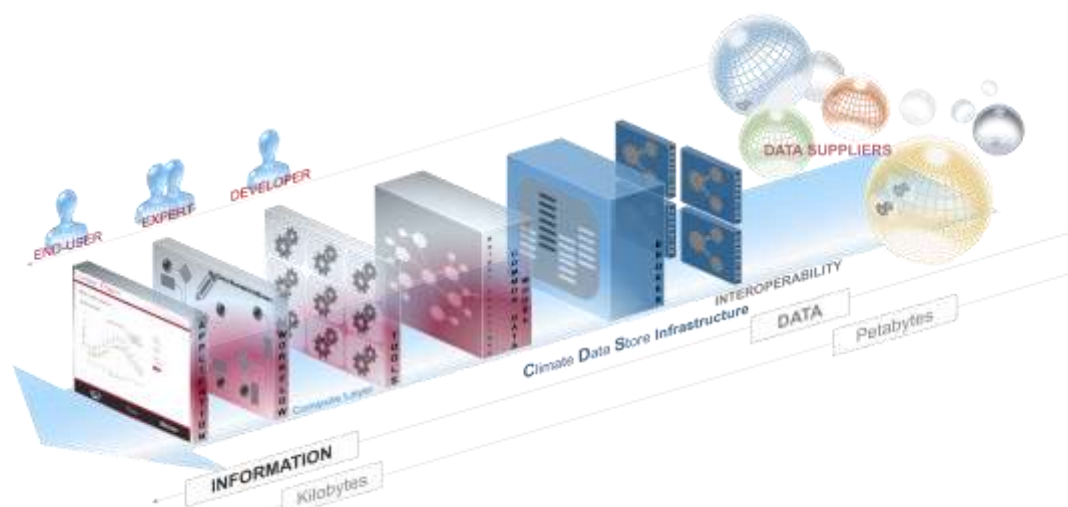resolutions and temporal coverage, from different data providers, based on different methodologies, etc.

Figure 1. Conceptual overview of the Climate Data Store (CDS) / Toolbox environment. The CDS facilitates access to climate data from multiple providers via one unified access point. The CDS toolbox is an applications environment providing C3S expert users (which includes SIS developers) access to a suite of tools to explore, postprocess climate data and, potentially, develop user relevant applications. The CDS environment permits the processing next to the data to increase computational efficiencies and uses 'orchestrated python workflows', making use of library of tools whilst the JavaScript framework facilitates the SIS contractors to implement customized applications.

EQC EVALUATION AND QUALITY CONTROL. All datasets available on the CDS will be quality controlled by an independent activity. Such a step serves two main purposes. On the one hand, the activity has been designed to ensure that each and every record on the catalogue is of a sufficient quality to be used for applications. On the other hand, the EQC function will ensure that all entries will be supported by a sufficient number of EQC attributes to allow any user who would want to do so to define their own quality control metrics.

CDS TOOLBOX. The CDS Toolbox provides users with the ability to create interactive web applications tailored to their needs using CDS datasets. The Toolbox contains a variety of software tools for combining CDS datasets and performing basic operations on the data, including functions for interpolation and re-gridding, simple statistical calculations, visualisation, text manipulation, etc. The Toolbox is designed to be extendable. The Toolbox uses a Common Data Model to represent different types of datasets available in the CDS catalogue. This allows data and tools to be combined into workflows that can be executed on-line. An Application Editor is available to parametrise workflows using widgets to create interactive web applications on the CDS. The Toolbox includes a mechanism for tracking the provenance of information products created in workflows and applications.

USER REQUIREMENTS DATA BASE (URDB). Users play a central role in the implementation of the programme. All user-facing contracts are asked to contribute to a systematic collection of user requirements. These are organised in a database whose analysis (also known as URAD User Requirement Analysis Document) will be one of the key instruments to inform the service evolutions.

3   Technical requirements

3.1   Scope of service

As demonstrated by the workshop that Copernicus Climate Change Service (C3S) organised jointly with PLACARD and ERA4CS in Feb 2018 in Bologna (minutes available here: https://www.placard-network.eu/climate-services-for-disaster-risk-reduction/), Climate Services (CS) can inform in different ways the four phases of the cycle that characterise Disaster Risk Reductions (DRR): Prevention, Preparedness, Response and Recovery (PPRR).

Whilst the most evident interaction is related to the ability for forecasting extreme events and thus provide early warning to all subjects at risk, one of the gaps that has been most clearly identified by the participants at the workshops had to do with historical observations.

In particular key to the success of an appropriate risk prevention phase is the understanding and characterisation of the baseline risk and how this has evolved over time. Such an assessment is only possible through an accurate and transparent analysis of a reliable, long time-series of observations.

This ITT aims to develop and make publicly available an historical catalogue of high impact events for one or more relevant hazards. Hazards of relevance include (but are not limited to) the following: hailstones, lightning, tornadoes, pluvial flooding, and other phenomena associated with intense convection, fluvial flooding, mudslides, freezing rain, black ice, heat waves, cold burst, etc.

The records so developed shall:

- extend as far back in time as practically possible,
- cover, as minimum, the entire territory of the European Union,
- define ways to operationalise its regular update,
- provide climate/meteorological characterisation of the event (based on observation and/or reanalysis data) as well as an estimate of the damages and insured losses.

Working in close association with DRR practitioners, Copernicus Emergency Management Service (http://emergency.copernicus.eu/), Civic Protection and Humanitarian Aid Operation (https://ec.europa/echp/index_en) and building upon their needs and requirements, the successful Tenderer will design and deliver a service which would allow the users to interact and manipulate within the CDS the datasets present on the event catalogue. In this way, the successful Tenderer is expected to provide high-visibility to the CDS infrastructure that is being developed.

ECMWF intends to award 1 contract under this ITT. The successful contract will be awarded on the basis of the quality of the proposal received, on its complementarity with other C3S activities and on overall budget affordability.

The successful Tenderer will:

- understand the needs and requirements of the DRR user community. The contractor should provide a first pass synthesis of user requirements -in terms of historical hazards- in their proposal.
- through the Interaction with the user community, identify a set of currently unmet needs in terms of climate data, climate information or climate related tools and applications.
- populate the user requirement database with those newly identified needs identified within the contract. (The template for the URDB will be provided).

- develop computationally efficient code to be run on the CDS toolbox; and be fully integrated and compliant with the CDS archive system

- document and maintain any software developed by the Tenderer for this service.

- base any tools developed within this contract on best practice and peer reviewed methodologies,

- develop a set of case studies to demonstrate the value of the SIS and how C3S adds value to existing data services

- provide all the supporting documentation and training material that would allow the C3S core user support function or another entity to take over the operational service at the end of the contract.

- identify suitable mechanisms that will support the maintenance of the operational service after the end of the contract.

- interact and collaborate with other relevant SIS contracts (e.g. water, storm surges and insurance) to ensure a joined-up approach for all DRR relevant perils. Information on these projects will be made available on C3S website by the end of July.

- work within the Evaluation and Quality Control (EQC) framework to ensure fitness for purpose of the SIS and that best practice is adopted.

ECMWF are looking for innovative solutions to provide state-of-the-art climate and sectoral specific information that demonstrates the CDS technologies and associated infrastructure for DRR.

The service should be designed so that both European businesses and the society at large will be able to benefit from the data services and tools developed within this contract.

3.2   Specification of work

Work package 0: management and coordination activities

This work package will focus on contract management, including internal controls and coordination of subcontractors, risk management and tracking of the key performance indicators.

Deliverables expected:

Deliverables covering the contractual and financial reporting obligations towards ECMWF in line with the Terms and Conditions of the Framework Agreement shall be covered under WP0:

- Quarterly Implementation Reports, due 15 days after the end of each calendar quarter;
- Annual Implementation Reports, due annually on 28 February;
- Preliminary financial information, due annually on 15 January;
- Draft and final Implementation Plans for the year N+1, due respectively in February and October of the year N;
- Letter from the auditors referred to in Clause 2.3.1.4 of the Framework Agreement;
- Final report, due 60 days after the end of the Framework Agreement.

Work package 1: data gap analysis and definition of the scope

The contractor will engage with the user community, which should include value adding service providers, NGO, governmental organisations and SMEs, to define the requirements for this service. In addition, the contractor will undertake a thorough assessment of the data and tools available via the

CDS and Toolbox and document how the DRR SIS will lead to value-added services which address the key requirements of the user community.

The successful Tenderer will provide a detailed description of the service to be developed in this contract, clearly articulating the gap filling potential of the service for the provision of climate information to specific users (e.g. policy-maker or value adding service providers). The Tenderer will also document how the identified gap will be bridged within the timeframe of the contract.

Deliverables expected:

- A report providing an assessment of user requirements from the user engagement activities. This report will define user case scenarios and gaps in current service provision. The contractor will also record all requirements in the User Requirement Database (URDB);
- A detailed description of the service to be developed and implemented during the contract. The report will include the system architecture and service and system requirements, together with an assessment of the associated resources, implementation schedule, reviews, deliverables (which may include reports, datasets and software), risk identification and management and acceptance criteria.
- A report describing the mechanisms that will be used to promote the uptake of the service by the DRR user-community beyond those who have been directly involved in the definition of the service (user champions).
- A description of the support infrastructure and/or a business model that would allow the service to continue in a sustainable mode after the end of the contract.
- A description of the case studies to be implemented within the contract.

Work package 2: service development and prototyping

Based on the initial scope the successful Tenderer will develop a prototype of the service. In close interaction with the user-champion identified in work package 1 the contract will iteratively improve and modify the prototype before its final release as an operational service which should include feedbacks from the wider user community. The successful Tenderer shall implement the mechanisms defined in work package 1 to promote the uptake of the service by the user community and respond to their needs.

Deliverables expected:

- A set of Climate Impact Indicators (CIIs) related to specific user-relevant hazards which were not available and/or usable before this contract. These Indicators should be based solely on the climate datasets available on the CDS but, where appropriate, it could link with third party Socio-Economic Data (SED) or other suitable non-climatic datasets. The Indicators will be provided alongside the CDS-based algorithms used to calculate them. The datasets will be ingested into the CDS catalogue and will become accessible through the CDS once fully validated and documented. In order to ensure the interoperability with the CDS, a close interaction with the teams developing the CDS and the associated Toolbox will be required. The service, if appropriate, should allow users to use their own proprietary datasets or other datasets available within the CDS should they want to do so.
- A set of case studies that case studies how data, and / or tools, produced by the successful Tenderer can be used by users. The cases-studies will adhere to the prescribed C3S format and visualisation.
- An operational climate service which updates the relevant CIIs on a regular basis.

- A web-presence for the service, including content on the C3S website and links to the CDS application if appropriate.
- A detailed description of a mechanism to enable support to be provided for the service, and its continuous development, after its operational release.

Work package 3: support and help development

In order to maximise user uptake, the service needs to be provided with good quality documentation, support and examples. The successful Tenderer will provide all the information necessary to enable ECMWF to support the operational users of the service.

Deliverables expected:

- A full documentation of the system design and implementation. This should allow any capable user of the CDS to reproduce any aspect of the service, should they want to do so, without the need of using proprietary software or inaccessible datasets.
- Provide user guides, tutorials and FAQs developed to be consistent with requirements of the Copernicus user support team and those produced in other C3S SIS contracts.

3.3   Contract Schedule

The contract will be implemented in two-phases: Phase one, roughly aligned with the activities of WP1, will be completed within 6 months, and will define the scope of the DRR SIS service. Phase 1 activities include the collation and synthesis of user requirements, gap analysis and definition of the DRR SIS system. Working with target users, the case studies that are to be implemented in Phase 2 will also be defined. The second phase of no more than 18 months in duration, will implement and demonstrate the DRR SIS service. User feedback mechanisms should also be included within Phase 2 planning. The second phase will commence after satisfactory completion of the first phase following a Baseline Design Review (BDR).

The timeframe for the completion of the proposed service is expected to be no more than 24 months. The Tenderer shall provide in their bid a contract schedule with the duration of each activity and their interactions, as well as all contractual milestones and deliverables, which will be refined during contract negotiations.

Activities shall be performed in the context of two service contracts. The first service contract covers Phase One and is expected to commence in January 2019 and last 6 months.

4   General requirements

4.1   Implementation Schedule

The successful Tenderer is expected to provide a detailed time plan and schedule as part of the tender response. The proposed time plan and schedule shall address the main tasks, inputs, outputs, intermediate review steps, milestones, deliverables and dates. Regular progress meetings will be held with ECMWF during the contract to assess project status, risks and actions.

ECMWF has to prepare annual Implementation Plans, which must be approved by the European Commission before they can enter into force. The implementation plans will take full stock of service reviews, performed thoroughly on an annual basis, as well as of the continuously evolving user requirements and corresponding service specifications. The successful Tenderer shall therefore provide each year for ECMWF approval an updated detailed plan of proposed activities including

Deliverables and Milestones, using the Work Package table template in Volume IIIB, which will form part of this Implementation Plan. The successful Tenderer has to report on a quarterly and annual basis (for more details please see Volume V Framework Agreement for this ITT).

4.2   Meetings

ECMWF will organise annual meetings to bring together all C3S service providers. The successful Tenderer is expected to attend these meetings. The successful Tenderer is also expected to attend monthly teleconference meetings to discuss C3S service provision, service evolution and other topics that cut across different aspects of C3S. The cost of attending these meetings shall be covered by the successful Tenderer and shall be included in the tendered price. The cost of organising and attending any additional meetings specific to the service provision shall also be covered by the successful Tenderer and shall be included in the tendered price.

In addition, the DRR SIS is expected to participate in technical working meetings with the CDS development team – which will also include C3S and relevant collaborators. These discussions will be convened at regular intervals, and most of them will take place by remote participation. In-person meetings organised for this sole purpose are not anticipated to take place more than once a year.

4.3   Deliverables

Expected top level deliverables are outlined in section 3. These can be in the form of documents or reports, data sets or databases, services and user support. Requirements for each type are described in the following subsections.

4.3.1   Documents and reports

All project reports shall be produced in English. The quality of reports and deliverables shall be equivalent to the standard of peer-reviewed publications and practice. Unless otherwise specified in the specific contract, deliverables shall be made available to ECMWF in electronic format (PDF/Microsoft Word/Microsoft Excel or compatible).

4.3.2   Data sets

It is expected that data sets (including databases) generated or acquired by the successful Tenderer will be delivered via the Climate Data Store. The section below indicates generic requirements for these datasets in terms of standards and conformity.

Provision of data and products: Suppliers will make the output of their work available to C3S users via the CDS, by one of two methods:

   a) uploading their data and products to a designated server,
   b) providing them via web services.

In the case of (a), suppliers will have to agree with ECMWF on the data formats to be used. ECMWF will only accept data in formats that follow internationally recognised standards. Such standards must be open (i.e. non-proprietary), managed by a recognised international standardisation body (e.g. ISO, WMO, OGC, etc.), or any de-facto standard. Open source software should also exist that can read and write files of these standards. Serialisation formats (e.g. NetCDF, XML, JSON) should be supported by standard schemas and conventions. All text-based formats should be encoded in UTF-8. ECMWF will

implement tools to check the compliance of the provided data and products to the agreed standards before they are added to the CDS.

Examples of case (a) are data uploaded to the CDS in WMO GRIB edition 1 and 2, NetCDF files conforming to CF-1.6, or greater.

In the case of (b), suppliers will have to agree with ECMWF on the protocols to be used to invoke the web services. ECMWF will only accept protocols that follow internationally recognised standards. Such standards must be open (i.e. non-proprietary), managed by a recognised international standardisation process (e.g. ISO, WMO, OGC, etc), or be a de-facto standard such as OpenDAP. ECMWF will consider using bespoke web-based APIs to access the data and products if they implement very simple protocols (e.g. REST), as long as the results returned by these APIs are compatible with (a). It should be noted that requests for these web services will mostly originate from the Climate Data Store itself, as part of a workflow run on behalf of an end-user; ECMWF will therefore need to have the necessary credentials to invoke these services. ECMWF will not provide information on the end user's identity when invoking the web services. ECMWF will nevertheless collect usage statistics for all aspects of C3S.

Examples of case (b) are OGC standards (WMS, WCF, WFS, etc), OpenDAP, etc. Other protocols could be considered as the system evolves.

Every dataset and/or service provided shall be documented using the appropriate metadata standards (e.g. ISO 19115).

Provision of processing capabilities: Suppliers will (when appropriate) implement specific web-service-based data manipulation facilities. These will make it possible to run some agreed reduction and/or analysis algorithms directly on the data and products located on the suppliers' systems, and to return the results of said algorithms.

As for data retrievals, invocation of these web services will originate from the Climate Data Store itself as part of a workflow run on behalf of an end user, and ECMWF will need to have the necessary end-user credentials to invoke these services. ECMWF will not provide information on the end user's identity when invoking the web services. ECMWF will nevertheless collect usage statistics.

ECMWF will ensure that these services are invoked in a controlled fashion, to prevent any misuse of the system. This web services will be implemented with OGC's WPS standards or will be based on simple web-based REST API or equivalent. The results returned by these services will have to be in formats compatible with options (a) or (b) described above.

Data and IPR: It is a condition of EU funding for C3S that ownership of any datasets developed with C3S funding passes from the suppliers to the EC, via ECMWF. Ownership will pass on delivery of the datasets. In return, the suppliers will be granted a non-exclusive licence to use the datasets which they have provided to C3S for any purpose except one which conflicts with the aims of C3S.

All software and products used by the successful Tenderer to produce the C3S datasets will remain the property of the successful Tenderer, except for those components which are acquired or created specifically for C3S purposes, with C3S funding, and which are separable and useable in isolation from the rest of the successful Tenderers' production system. The identity and ownership of such exceptional components will be passed to the EC via ECMWF annually, but in return the successful Tenderer will be granted a non-exclusive licence to use them for any purpose except one which conflicts with the aims of C3S.

Detailed contractual terms, including terms to give effect to the arrangements described above, are set out in the terms and conditions for this ITT (Volume V of the ITT documents).

4.3.3 Web services

Web services and/or portals developed under contract with C3S shall be fully integrated in the C3S web portal following the guidance provided in the table below.

Activity	Guidance
Design	The existing templates and styles for the main service website (http://climate.copernicus.eu) must be used. The ECMWF Copernicus web officer will provide these on request.
Domain	The web-presence will be integrated in the main C3S website.
User journey	The user journey must start on the main C3S website via a dedicated landing page for the project. The sub sub-domain URL should point to this page.
Content	Web content shall follow a template provided by C3S web team.
Navigation	A home button should take users to the main websites' homepage.
Logos	Supplier logos should not appear on the microsites. There will be a page on the service main website that reflects the contribution of suppliers.

Table 1: Web services

4.3.4 User support

ECMWF has established a centralised Service Desk to provide multi-tiered technical support to all users of C3S data, products, tools and services. The C3S Service Desk is used for ticketing user requests and distributing these requests to specialists as needed. Dedicated staff at ECMWF provide basic support in the form of self-help facilities (FAQs, knowledge bases, tutorials etc.) as well as individualised support on technical queries related to the CDS, data formats, data access etc. In addition, ECMWF staff will provide specialised scientific support to address questions related to its industrial contributions to C3S, e.g. in the areas of global reanalysis and seasonal forecasting.

All C3S contractors are expected to contribute to the delivery of multi-tiered technical support for the data and/or services they provide. Such specialised user support shall take the form of direct response to individual user queries via the C3S Service Desk facility, as well as contributions to FAQs, user guides and knowledge bases.

As part of the bid, Tenderers shall describe the level of user support service on C3S Service Desk tickets (for example, 90% of Tier-2 requests answered within 5 working days), with sufficient flexibility to be improved depending on user requirements. Tenderers shall also address development of user guides and any other form of user support, such as video tutorials, user workshops, etc.

4.4 Key Performance Indicators

As part of the bid, the Tenderer shall specify a proposed set of Key Performance Indicators (KPIs) appropriate for the service The KPIs shall be designed to quantify different aspects of quality of service against the requirements described in this document. These initial specifications shall be refined together with ECMWF during the first 6 months of the contract. Contractors shall report to ECMWF on a set of KPIs suitable for monitoring various aspect of service performance, including (but not limited to):

• Data quality
• Service delivery
• Contract management

- User support

The KPIs will be reported in the Quarterly and Annual reports. At the end of each year, a service readiness review shall take place that will include assessment of performance against the set of KPIs.

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 sub-sections.

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.

Section	Page Limit
Track Record	2 (for general) and 2 (per entity)
Quality of resources to be Deployed	2 (excluding Table 1 in Volume IIIB and CVs with a maximum length of 2 pages each)
Technical Solution Proposed	30 (Table 2 in Volume IIIB, the section on references, publications, patents and any pre-existing IPR are excluded from the page limit and have no page limit)
Management and Implementation	10 (excluding Table 3, Table 5 and Table 6 in Volume IIIB) + 2 per each Work package description (Table 4 in Volume IIIB)
Pricing Table	No limitation

Table 2: Page limits

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.

5.2.1 Executive Summary

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

5.2.2 Track record

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. ECMWF may ask for evidence of performance in the form of certificates issued or countersigned by the competent authority.

5.2.3 Quality of resources to be deployed

The Tenderer shall propose a team providing the skills required for providing operational services that meet the technical requirements set out in section 3. The team shall include a Service Manager with at least 5 years of experience in management of large-scale projects. The Tenderer shall describe the experience of the Service Manager and the technical project team in performing activities related to the various aspects of this tender.

5.2.4 Technical solution proposed

The Tenderer shall describe in detail the mechanisms that have been adopted to ensure the user requirements are fully accounted for in the implementation of the service.

The Tenderer shall give a short background to the proposed solution to demonstrate understanding of that solution and of the C3S context. This section shall also include information on any other third party suppliers that are used as part of the technical solution, and a statement of compliance for each requirement formulated throughout this document, describing how the proposed solution maps to the requirements.

5.2.5 Management and implementation plan

The Tenderer shall provide a detailed implementation plan of proposed activities for the duration of the framework agreement. Deliverables should be consistent with the technical requirements specified in section 3.

The Tenderer is requested to include management and implementation activities within a dedicated work package (WP 0). 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. Adjustments to the proposed implementation plan can be made on an annual basis depending on needs for service evolution, changed user requirements, or other requirements as agreed between the European Commission and ECMWF.

As part of the general project management description the Tenderer shall consider the following elements (this is not an exhaustive list):

- Quarterly, annual and final reports shall be provided in accordance with the Framework Agreement Article 2.3.
- An implementation plan for the year N+1 shall be provided in February of the year N for ECMWF approval.
- Monthly teleconferences with ECMWF and a proposal for involvement of ECMWF in major project reviews shall be provided as part of the management plan.
- A proposed payment plan shall be provided as part of the proposal. The payment plan shall be based on quarterly payments for routine services work packages and shall be based on milestones completion and associated deliverables for development related activities.
- If relevant, a list of sub-contractors and details of their contribution, key personnel, legal names and addresses shall be provided. The Tenderer shall describe how the Framework Agreement, in particular Clause 2.9, has been communicated down to all their sub-contractors.

The table below provides the template to be used by the contractor to describe the complete list of deliverables, milestones and schedules for this work package. All milestones and deliverables shall be numbered as indicated. All document deliverables shall be periodically updated and versioned as

described in the table. Tenderers shall provide preliminary versions of the completed tables as part of their bid.

Deliverables for this work package shall include the following reports:

WP0 Contractual Obligations Template				
#	Responsible	Nature	Title	Due
D0.y.z-YYYYQQ	Tenderer	Report	Quarterly Implementation Report QQ YYYY *QQ YYYY being the previous quarter*	Quarterly on 15/01, 15/04, 15/07 and 15/10
D0.y.z-YYYY	Tenderer	Report	Annual Implementation Report YYYY *YYYY being the Year n-1*	Annually on 28/02
D0.y.z	Tenderer	Report	Final report	60 days after end of contract
D0.y.z-YYYY	Tenderer	Other	Preliminary financial information YYYY *YYYY being the Year n-1*	Annually on 15/01
D0.y.z-YYYY	Tenderer	Report	Draft Implementation plan YYYY *YYYY being the Year n+1*	Annually on 28/02
D0.y.z-YYYY	Tenderer	Report	Finalised Implementation plan YYYY *YYYY being the Year n+1*	Annually on 31/10
D0.y.z-YYYY	Tenderer	Other	Copy of prime contractor's general financial statements and audit report YYYY *YYYY being the Year n-1*	Annually
D0.y.z-YYYY	Tenderer	Other	Letter from auditor specific to C3S contract YYYY *YYYY being the Year n-1*	Annually