


## REQUEST FOR PROPOSAL

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**To:** ALL BIDDERS

**CTBTO Ref. No.:** 2026-0042/RICKARD   
(PLEASE QUOTE ON ALL COMMUNICATIONS)

**Tel. No.:** +43 (1) 26030-6350

**E-mail:** procurement@ctbto.org

**Attn:** Phone:

Fax:

Email:

**Date:** 26 May 2026

**Subject:** Provision of Software Engineering Services for Database and Web Applications - Database of the Technical Secretariat Modernization (DOTS Modernization) On a Call-Off Basis

**Deadline for Submission: 18 Jun 26**


**Vienna Local Time: 17:00**

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (hereinafter referred to as the 'Commission') hereby invites you to submit a proposal that meets the requirements of the attached documents.

You are kindly requested to complete and return the acknowledgement form by email as soon as possible.

If you have any questions you should contact the email address indicated above.

Yours Sincerely,

  
Sally Alvarez de Schreiner  
Chief, Procurement Services Section

**ACKNOWLEDGEMENT FORM**

<b>Solicitation No:</b> 2026-0042 <b>Title:</b> Provision of Software Engineering Services for Database and Web Applications - Database of the Technical Secretariat Modernization (DOTS Modernization) On a Call-Off Basis as per the attached TOR	<b>Closing Date:</b> 18 Jun 26 <b>Vienna Local Time:</b> 17:00
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**Procurement Staff:** Adam Rickard

**CTBTO Req. No.:** 0010029306

 Please complete 'A' or 'B' or 'C'  
 and Return

**WITHIN FIVE (5) DAYS**

 THE PREPARATORY COMMISSION FOR THE  
 COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION (CTBTO)

**by email to**  
 procurement@ctbto.org

<b>A: We shall submit our proposal</b>	
By: _____ (date)	Company Name: _____ Contact Name: _____ Email/Tel: _____

<b>B: We may submit and will advise</b>	
By: _____ (date)	Company Name: _____ Contact Name: _____ Email/Tel: _____

<b>C: We will not submit a proposal for the following reason(s)</b>	
<input type="checkbox"/> our current workload does not permit us to take on additional work at this time; <input type="checkbox"/> we do not have the required expertise for this specific project; <input type="checkbox"/> insufficient time to prepare a proper submission; <input type="checkbox"/> other (please specify) _____	
	Company Name: _____ Contact Name: _____ Email/Tel: _____

## INSTRUCTIONS FOR PREPARATION AND SUBMISSION OF PROPOSALS

### 1. General

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (the Commission) with its headquarters in Vienna is the International Organization mandated to establish the global verification system foreseen under the Comprehensive Nuclear-Test-Ban Treaty (CTBT), which is the Treaty banning any nuclear weapon test explosion or any other nuclear explosions. The Treaty provides for a global verification regime, including a network of 321 stations worldwide, a communication system, an International Data Centre and on-site inspections to monitor compliance with the Treaty. More information can be found in our website [www.ctbto.org](http://www.ctbto.org)

This Request for Proposal (RFP) is for the provision of services as described in the Terms of Reference for the provision of “*Software Engineering Services for Database and Web Applications - Database of the Technical Secretariat (DOTS) Modernization On a Call-Off Basis*”.

The Proposal shall meet all requirements stated in the Terms of Reference and be submitted in accordance with these Instructions for Preparation and Submission of Proposals. For this project, the Commission is seeking capabilities, which will ensure that the services are delivered and the tasks are accomplished expeditiously and at a reasonable cost.

### 2. Documents included in this RFP

This RFP consists of the following documents:

- 1) Letter of Invitation;
- 2) These Instructions for Preparation and Submission of Proposals with its Attachments:
  - Attachment 1: Procedure for Submission of Electronic Offers in 2 sealed files;
  - Attachment 2: Evaluation Criteria and Method;
  - Attachment 3: Minimum Content of Technical Proposal and Technical Compliance Matrix; and
  - Attachment 4: Financial Bid - Price Schedule Form.
- 3) Vendor Profile Form;
- 4) Statement of Confirmation;
- 5) List of CTBT State Signatories available at [www.ctbto.org](http://www.ctbto.org) under [Status of Signatures and Ratifications | CTBTO](#) and incorporated hereby by reference;
- 6) The Commission’s Model Contract and its Annexes;
  - o Annex A - The Commission’s General Conditions of Contract, available at [2026-01 General Conditions of Contract](#) and incorporated hereby by reference;
  - o Annex B - The Commission’s Terms of Reference

Note: In the event of award, the Proposal will be incorporated as Annex C to the Contract.

### 3. Amendment of RFP Documents

At any time prior to the closing date for submission of Proposals, the Commission may, for any reason, modify the RFP documents by amendment. The Commission may consider extending the deadline in order to allow adequate time for considering the modifications in the preparation of the Proposal.

#### 4. **Language of the Proposal**

The Proposal and all correspondence and documents relating to it shall be in English.

#### 5. **Format and Submission of the Proposal**

The Proposal shall be typed, dated and signed by an official legally authorized to enter into contracts on behalf of your organization. The Proposal shall not contain any interlineation, erasures or overwriting except as necessary to correct errors, in which case such corrections shall be initialed by the authorized person(s) signing the Proposal.

**The Proposal shall be submitted electronically according to the attached “PROCEDURE FOR SUBMISSION OF ELECTRONIC OFFERS IN 2 SEALED FILES”.**

**Proposals not submitted as electronically sealed proposal as indicated above and following the instructions outlined in Attachment 1 and in accordance with this RFP will not be considered and may lead to the rejection of the Bidder from the procurement process.**

The Proposal shall be received not later than the closing date indicated in the Letter of Invitation.

#### 6. **Request for Clarifications and Contacting the Commission**

The Commission will issue clarifications, if required. Bidders are requested to e-mail any questions pertaining to this RFP as soon as possible after receipt of the solicitation documents, but in any case, no later than **seven (7) business days prior to the Closing Date**. No requests for clarifications will be entertained after this time. Questions will only be accepted via e-mail sent to:

E-mail: [procurement@ctbto.org](mailto:procurement@ctbto.org)  
Subject: 2026-0042/RICKARD - Request for Clarifications

The Commission will make all reasonable efforts to issue the clarifications not later than five (5) business days prior to the Closing Date.

Except in the case of responding to an RFP clarification, no Bidder shall contact the Commission on any matter relating to the Proposal after its submission and until the award of the Contract. Any attempt to influence the Commission in its evaluation of the Proposal or the contract award decision may result in the rejection of the Proposal.

#### 7. **Eligible Goods and Services**

The goods and services (if any) to be rendered under the Contract/Purchase Order shall have their origin in the States Signatories of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) which is available in the CTBTO website at [www.ctbto.org](http://www.ctbto.org) under [Status of Signatures and Ratifications | CTBTO](#). For purposes of this paragraph, "the origin" means the place from where the materials, goods and/or from which the services are supplied.

## **8. Type of Contract and Payment**

The Commission intends to conclude a firm fixed unit price contract based on the attached Model Contract. The terms and conditions of payment for services are described in the attached Model Contract.

## **9. Preparation of the Proposal**

The Proposal shall contain, but not necessarily be limited to, the information described below.

The Proposal shall be composed of the following separate parts:

- I. **Technical Proposal;** and
- II. **Financial Proposal;**

### **PART I: TECHNICAL PROPOSAL**

Please state the reference number and the date of this RFP in the Proposal and any correspondence relating to it.

#### **a) Point of Contact**

The Proposal shall state the contact details and address (name, telephone number and e-mail address) of the person/point of contact in your company dealing with this RFP.

The Technical Proposal shall contain, the information required in **Part I of Attachment 3** “Minimum Content of Technical Proposal and Technical Compliance Matrix” addressing, at the minimum, the below elements.

#### **b) Documents Establishing the Eligibility and Qualifications of the Bidder**

- (i) The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor. In order to award the Contract to a Bidder, its qualifications must be documented to the Commission’s satisfaction. These include, but are not limited, to the following:
  - (a) That, in the case of a Bidder offering to supply goods and/or services under the Contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods’ manufacturer or producer to supply the goods in the country of final destination;
  - (b) That the Bidder has the financial, technical, and production capability necessary to perform the Contract.
- (ii) Expertise of the Firm/Organization: This section shall provide a brief information on the experience of the organization, both domestic and international, which are related or similar in nature to the requirements of the RFP.

(iii) In complying with this section, the Bidder assures and confirms to the Commission that the personnel being nominated are available to fulfil the demands of the Contract during its stated full term.

**c) Bidder’s Statement, Statement of Confirmation and Vendor Profile Form**

The attached Bidder’s Statement, Statement of Confirmation and Vendor Profile Form shall be duly filled-in, signed and submitted together with the Proposal.

**d) Description of Services**

An explanation of the Bidder’s understanding of the services to be provided and an overall preliminary operational plan for the execution of the services. At the minimum, the Proposal shall include:

- (i) A detailed description of the proposed solution and inclusion of any relevant technical literature.
- (ii) The completed document “**Bidder Technical Compliance Matrix**” contained as Part II in **Attachment 3** duly filled in. Note that this document is a high-level compliance matrix only. In the Technical Proposal **Bidders shall provide sufficient evidence to demonstrate competence and compliance with the requirements.**
- (iii) A detailed technical document demonstrating how your proposed solution delivers each of the software engineering services listed in Section IV in the Terms of Reference (ToR) document;
- (iv) Evidence of how your proposal meets the mandatory requirements listed for the Contractor and Team Roster in Section V of the ToR document;
- (v) Confirmation that the Contractor shall comply with the Standards and Working Environment as set forth in ToR Section VII;
- (vi) A **draft risk plan** addressing the requirements in ToR Section VII.4; and
- (vii) Any other relevant issue which the Bidder would like to bring to the attention of the Commission whether or not having cost implications.

**e) Qualifications**

Documentary evidence of the Bidder’s and the project personnel’s qualifications to provide the Services meeting the requirements in ToR Section V, which shall establish to the Commission's satisfaction that the Bidder has technical capability necessary to perform the Contract and other necessary ongoing services as required.

**f) Commission’s Inputs**

A description of the expected inputs/resources to be made available by the Commission and at what stage of the services.

**g) Sub-Contractors**

The Proposal shall include names, legal status, address and qualifications of subcontractor(s), if any, involved in the Project and the scope of the subcontracted services. The Bidder shall provide a statement that its organization shall be fully responsible for the performance of sub-contractors. All sub-contractors shall be legally established in one of the CTBT States Signatories (list available on the CTBTO website at [www.ctbto.org](http://www.ctbto.org) under [Status of Signatures and Ratifications | CTBTO.](#))

**h) Work permits and Visas**

Please note that it is the Bidder's responsibility alone to obtain work permits or visa or similar for the personnel proposed to implement this project. The Commission will make no effort nor accept any responsibility for obtaining work permits or visa or similar for the Contractor's personnel.

**i) Delivery Schedule**

Delivery time shall be indicated in weeks after receipt of an order and shall be firm during the validity of the Proposal and comply with the delivery requirements specified in the Terms of Reference.

**PART II: FINANCIAL PROPOSAL**

The Financial Proposal shall be prepared in **United States Dollars or Euro** and shall breakdown, separately, the costs for each task required by the Terms of Reference in accordance with **Attachment 4 (Price Schedule Form)**.

In presenting the cost for each line item of Services, adequate justification and calculation must be included in the cost and this should be provided on the separate sheet. All individual costs shall be stated in EURO or US Dollars and be computed to constitute the total Contract Price.

Note that clear and detailed explanations would enable us to evaluate the Bid promptly and proceed with fewer requests for clarifications/justifications in a later stage. This is also a factor influencing the decision for Contract award.

**Taxes**

In principle the Commission is exempt from taxes. Since the arrangement under which such exemption is respected varies from country-to-country, the selected Bidder will be informed by the Commission whether tax exemption will occur at source or whether taxes paid by the selected Bidder will be reimbursed by the Commission upon submission of the original supporting documentation.

*(1) For Austrian companies*

The price quoted shall be net of Taxes. All applicable Taxes payable by the selected Bidder at the conclusion or implementation of the Contract in respect of the goods/services shall be quoted separately or be separately identified on the Bid together with information on the nature of the tax and its method of calculation.

(2) *For European Union (EU) Companies*

The price quoted shall be net of Taxes. All applicable Taxes payable by the selected Bidder at the conclusion or implementation of the Contract in respect of the goods/services shall be quoted separately or separately identified on the Bid together with information on the nature of the Tax and its method of calculation. Due to the VAT exemption applicable to the Commission, no VAT will be charged to the Commission by the EEC Suppliers under the Contract (Ref. EU VAT Council Directive 2006/112/EC, Article 151).

(3) *For Non-EU Companies*

The price quoted shall be net of Taxes. All applicable Taxes payable by the selected Bidder at the conclusion or implementation of the Contract in respect of the goods/services shall be quoted separately or be separately identified on the Bid together with information on the nature of the tax and its method of calculation. For deliveries to Vienna, Austria, and due to the tax exemption at source, applicable to the Commission, no Taxes shall be charged to the Commission under the Contract.

**10. Completeness and Correctness of the Proposal**

The Commission reserves the right to verify all information furnished by you in the Proposal through a source of its choice. Any inaccurate information so given may lead to the rejection of the Proposal.

**11. Validity of the Proposal**

The Proposal shall be valid for ninety (90) days after the deadline for its submission to the Commission, unless an extension of validity has been requested by the Commission.

**12. Correction of Errors**

The Commission will check the Proposal for any arithmetic errors. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected.

**13. Evaluation of the Proposal and Award**

- (a) The Commission will conduct the evaluation based on the criteria and method specified in **Attachment 2 “Evaluation Criteria and Method”**.
- (b) The Commission reserves the right, as it deems appropriate, to award to a single bidder, to award to multiple bidders in any combination or not to award to any of the bidders as a result of this RFP.

**14. Negotiations of the Proposal and Award**

The Commission reserves the right to request clarifications on the Proposal and to enter into negotiations regarding technical or commercial aspects of the Proposal before awarding the contract under this RFP.

**15. Modification and Withdrawal of the Proposal**

Bidders may modify or withdraw their Proposals after their submission, provided that written notice of the modification or withdrawal is received by the Commission by the closing date for the submission of the Proposal. The Proposal may not be modified subsequent to the closing date.

**16. The Commission's Right to Reject the Proposal**

The Commission reserves the right to accept or reject the Proposal or to annul this procurement process at any time prior to the award of contract without having to inform the Bidders of the grounds therefore, without thereby incurring any liability to the Bidders.

**17. Right to Vary Requirements at the Time of Award**

At the time of award of Contract, the Commission reserves the right to vary the quantity of the items (goods and/or services), by up to a maximum of twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.

**18. Costs of preparation and submission of the Proposal**

Bidders shall bear all the costs associated with the preparation and submission of their Proposal and the Commission will not be responsible or liable for those costs, regardless of the outcome of this RFP.

**19. Proprietary Information**

All documentation and information contained in this RFP are proprietary to the Commission and shall not be duplicated, used or disclosed -in whole or in part- for any purpose other than to evaluate them and respond to the Commission's request for Proposal or otherwise without prior written agreement of the Commission.

**20. Use of former employees of the Commission in the preparation of Offers**

A Bidder must not, in the absence of prior written approval from the Commission, permit a person to contribute to, or participate in, any process relating to the preparation of an offer or the procurement process if the person, at any time:

- a) During the 12 months immediately preceding the date of issue of the Solicitation was an official, agent, servant or employee of, or otherwise engaged by the Commission;
- b) During the 24 months immediately preceding the date of issue of the Solicitation was an employee of the Commission personally engaged, directly or indirectly, in the definition of the requirements, project or activity to which the Solicitation relates.

**21. Data Privacy Notice**

Any personal data provided to the Commission as part of this procurement exercise, via an offer or otherwise, and required for assessing your offer will be treated by the Commission as confidential information and used on a 'need to know basis'.

The personal data provided by Bidders will be processed by the Commission for the specific

purpose of assessing any offer submitted in response to this solicitation and, in the event of award, contract implementation. This personal data forms an integral part of the offer and to any ensuing contracting arrangement and cannot be accessed, verified, rectified or deleted following the offer's submission other than through express notification to the Commission of any changes or errors or clarifications requested by the Commission during the evaluation process. This data includes, but is not limited to, the following:

- First and last name;
- Contact information, such as telephone numbers, or mailing addresses;
- Email addresses; and
- Information on skills, expertise and work experience.

In the event of award, Clause 49 (Personal Data Protection) of the Commission's General Conditions of Contract shall apply.

Nothing in this RFP shall constitute a waiver, either express or implied, of the privileges and immunities of the Commission and its employees, which are specifically reserved.

<b>BIDDER'S STATEMENT</b> <b>PLEASE FILL THIS FORM &amp; SUBMIT WITH THE BID</b>
Delivery Time:
Shipping weight (kg) and Volume (m <sup>3</sup> ) – if applicable:
List of recommended consumables and spares including prices and details on local availability, if applicable (please tick): <input type="checkbox"/> For one year period <input type="checkbox"/> For a period of .....
Warranty period applicable (it shall be for a <b>minimum of 24 months</b> , starting from the acceptance of the goods/services by the Commission) – please tick below: <input type="checkbox"/> For a two year period <input type="checkbox"/> For a period of .....
Availability of local service in Vienna, Austria (if any/if applicable):
State country of origin or assembly of all items quoted:
Quantity discount and early payment discount (if any):
Include documentary evidence of qualifications to perform the order, which shall establish to the Commission's satisfaction that the Bidder has the financial, technical and production capability necessary to perform the order in its entirety and to provide spare parts and other necessary on-going services as required.
Included in this Bid : Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Confirmation that the Bidder has reviewed the Commission's Model Contract, License Agreement and General Conditions of Contract and agreed to all terms and conditions.</b> Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Remarks:</b>
With regards to the software provided with the equipment, state and confirm whether the software licenses are transferable to third parties, i.e. the Commission or the Commission's State Signatories - list available at <a href="http://www.ctbto.org">www.ctbto.org</a> under <a href="#">Status of Signatures and Ratifications   CTBTO</a> . Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable <input type="checkbox"/>
<b>Remarks:</b>
<b>Name:</b>
<b>Name &amp; Title of Contact Person:</b>
<b>Signature &amp; date:</b>

## **“Procedure for Submission of Electronic Offers in 2 Sealed Files”**

The Commission invites you to submit your sealed offer (Bid, or Proposal) in response to the solicitation forming part of this request.

**Please be sure to follow the instructions below very carefully, so that the documents you submit are encrypted, and cannot be opened without an encryption key (password). If the documents are not encrypted, they will not be accepted as part of this tender process.**

### **CRITICAL INFORMATION:**

Create separate zip files for the technical offer and the financial offer (labelling them clearly in the title) with different encryption keys. Instructions for how to do this are provided below.

**Step 1: You provide the encryption key (password) for the *Technical Offer only* (in accordance with the below instructions)!**

**Step 2: After the Commission has performed the evaluation of the Technical Offer, if your Technical Offer is considered to be acceptable, the Commission will request the encryption key (password) for the Financial Offer you have already submitted by the tender Deadline.**

Should you have any questions, please send an email to [procurement@ctbto.org](mailto:procurement@ctbto.org).

**We recommend that you leave yourself plenty of time to complete the below process (including getting any necessary assistance from the Commission), as late offers will not be accepted.**

### **INSTRUCTIONS:**

1. In a **WINDOWS** environment, one way of meeting the requirements is as follows.

We recommend using the open-source, free software **7-zip**, but if you are comfortable with other tools, the result should be the same, as long as you can apply encryption to the archive. In the below, we'll use 7-zip as an example. (You can download the 7-zip code for Windows at: [7-zip.org](http://7-zip.org))

2. In **LINUX** environment, you can use, for instance, “sha1sum” on the command line.

## Creating the archives for submission

Regardless of whether the offer is a single file, or a collection of files, the files are easier to manage if delivered as a single, compressed file. Compressing the archive is a common way to meet size limitations in email systems.

As an example of how to submit your offer in the required format: assuming you are supplier “SOFTCOMP” and have the following files related to the offer for “RFP 2020-0010/EDWALD”. (*You will need to replace these elements with the real information for your actual offer in line with the relevant Instructions for Preparation and Submission of Proposals/Bids.*) Assuming further that you have installed the 7-zip software on the Windows system you are using.

We will only go through the creation of the Technical Offer (Proposal/Bid) component; the Financial Offer (Proposal/Bid) component is similar.

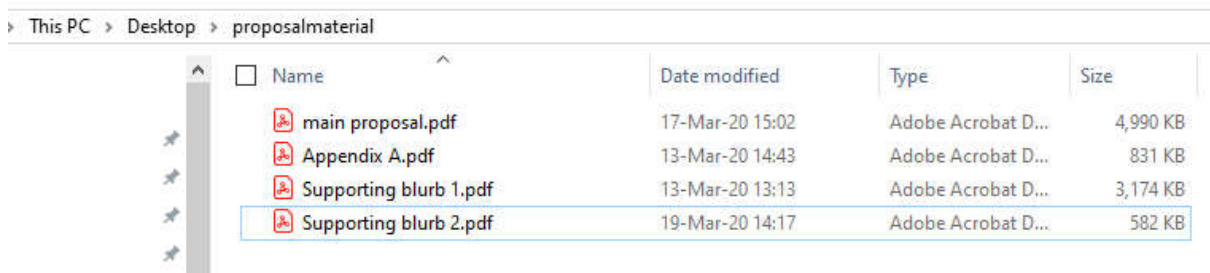


Figure 1 An example set of files to be submitted

Select the four files and right-click; a Dialog box pops up, with one of the options being “7-ZIP >”. Hover your cursor over the “>” part and a few more options appear, select the “Add to archive” option.

Another dialog box pops up (see ‘Figure 2, Creating an Archive’, next page):

Using the standard Windows methods, select a suitable location for the archive (if you don’t change it, the archive gets created right where the selected files are), and give it a name in the form of: “SOFTCOMP-2020-0010-EDWALD-TECHNICAL-BID”, of course replacing all the elements with the true values for the offer in question: the actual company indicator, and the actual RFP/ITB identification string. Note that it is not possible to put a slash “/” in the file name, and therefore put a dash “-” instead. Leave the file extension “.zip” as is.

Leave all the other settings as is, except: **add a password to the encryption** (see figure 2 below). This is done by typing the same password (of your choosing) twice in the two text fields in the lower right hand corner.

**Make a note of this password. You must choose different passwords for the two zip archives, that is, the Technical and the Financial Proposal/Bid.**

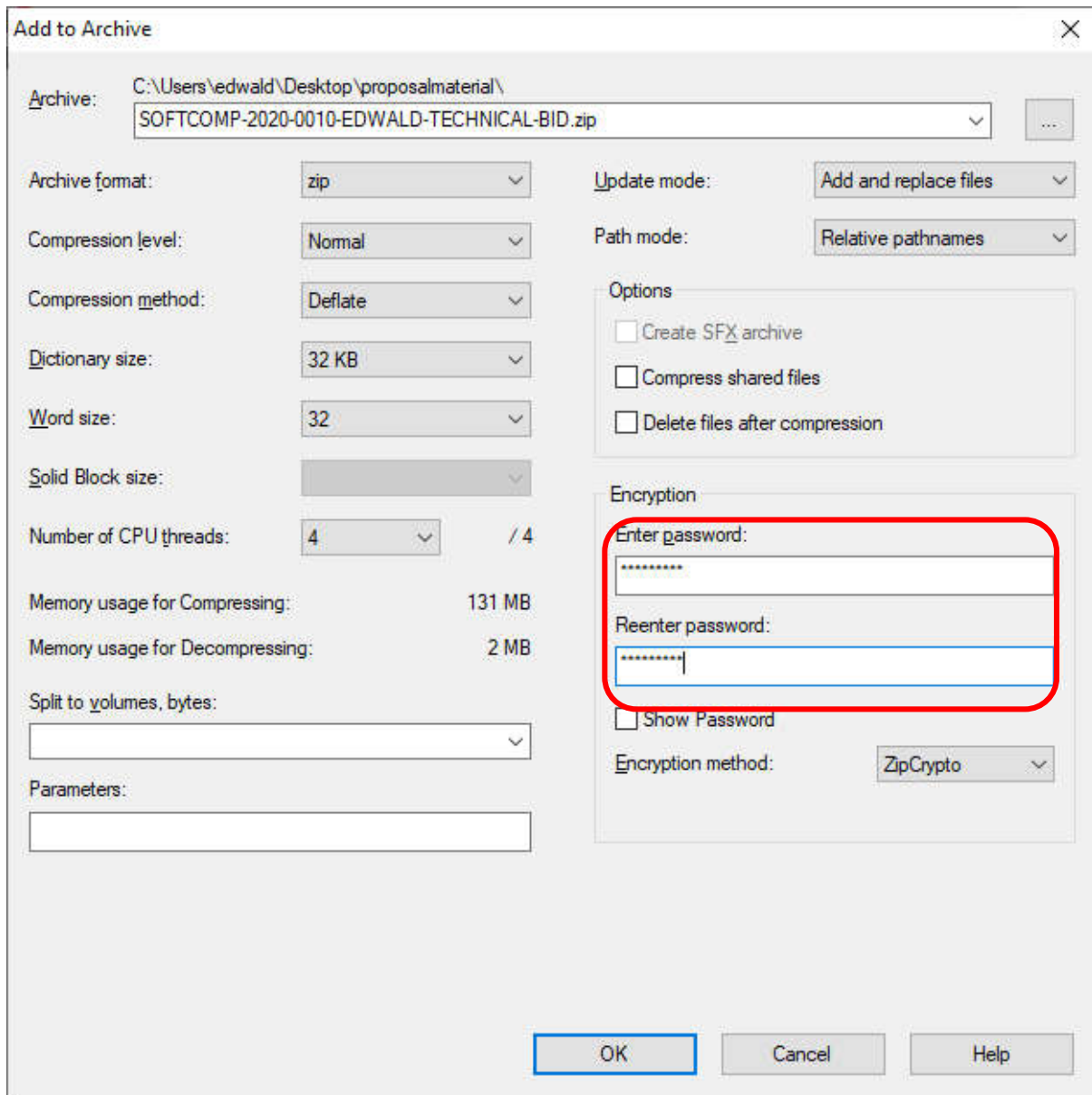


Figure 2 Creating an Archive

Now, we seek the “SHA1 Hash”, and electronic fingerprint of the archive you have just created. The hash is a string calculated from your file(s) and can be used to guarantee that the file has not been modified since you created it. Any change to the file will result in a different hash value.

There are many ways of calculating this; two common options are described below.

If the appropriate functionality is available in your Windows environment: Select the compressed archive in the Windows file manager, (eg. SOFTCOMP-2020-0010-EDWALD-TECHNICAL-BID.zip) and right click. One of the options to select is “CRC SHA >”. Hovering over the “ >” brings a few more options to light, select the **SHA-1** option. A smaller dialog pops up: (see Figure 3, *SHA1* below). Clicking Ctrl-C grabs the contents of this box. You can close the box after copying the contents. (You can paste the contents into a mail message, for instance.)



Figure 3 *SHA1*

If this CRC SHA function is not available by ‘right-click’ on your Windows version, you can also do this from ‘the command line’, a slightly more complicated way. Open a CMD window (see sidebar below), move to the folder where your archive is, and execute the command: “certutil -hashfile *SOFTCOMP-2020-0010-EDWALD-TECHNICAL-BID.zip* sha1” where you obviously replace the name of the file with your real file name. The output of this command is the SHA1 “hash”. You can copy-and-paste the string for use in the email (below).

Sidebar: How to open a CMD window in Windows:

The way to open a Command window (or ‘terminal’) depends on the version of Windows you have. The different methods are very clearly described in the following article, but a quick internet search will find multiple descriptions.

<https://www.lifewire.com/how-to-open-command-prompt-2618089>

Finally,

1. Create a new email, Subject: example- “SOFTCOMP-2020-0010-EDWALD”. Add the two compressed archives, that is, the Technical Offer and the Financial Offer archives as attachments. The text of the email should contain the SHA1 information for both archives. **SEND THIS TO:** [sealed\\_bids@ctbto.org](mailto:sealed_bids@ctbto.org) (note that there is an underscore “\_” between “sealed” and “bids”). (Should the email become larger than your mail system allows, you can

try sending the two archives in separate emails. Take care to include the right SHA1 information with each file.)

2. Create a new email, Subject: example- "SOFTCOMP-2020-2010-EDWALD-Technical Offer" the contents of which must contain the Encryption Key for the Technical Offer (the password you used when creating the Technical Offer). (Again, note the underscore between 'bid' and 'keys'.)

**SEND THIS TO:** [bid\\_keys@ctbto.org](mailto:bid_keys@ctbto.org)

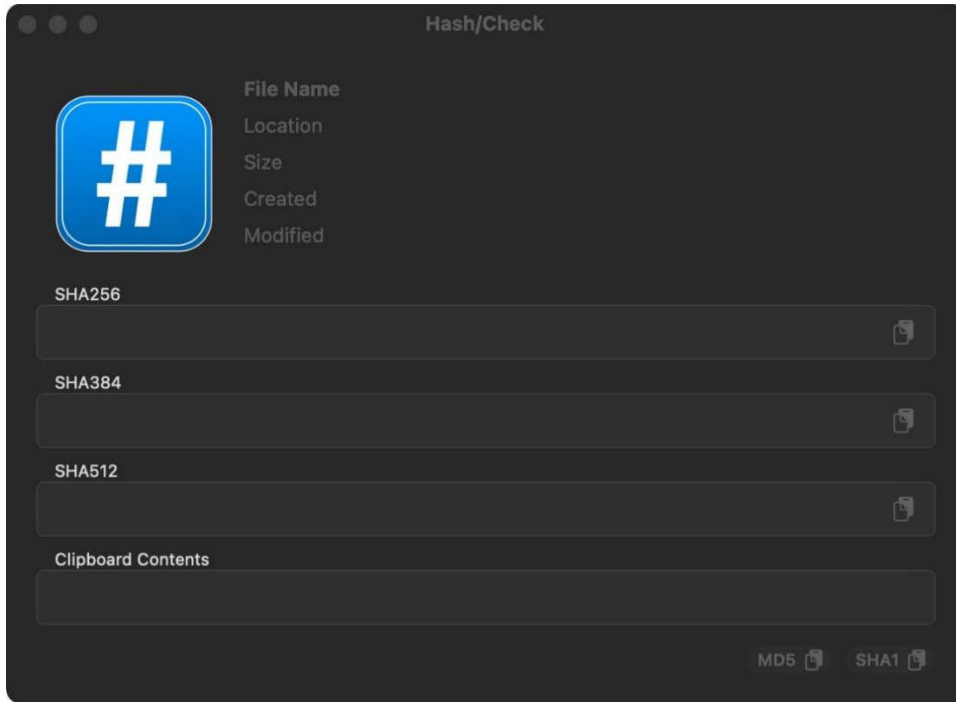
**IMPORTANT NOTE:** As stated above, only send the Encryption Key for the Technical Offer to the [bid\\_keys@ctbto.org](mailto:bid_keys@ctbto.org) mailbox when sending your Technical and Financial Offer to the [sealed\\_bids@ctbto.org](mailto:sealed_bids@ctbto.org) mailbox. You shall only send the Encryption Key for the Financial Offer to the Commission if and when informed by the Commission that your Technical Offer had been evaluated as "technically acceptable".

The Financial Offer Encryption Key will need to be provided by you to the same e-mail ([bid\\_keys@ctbto.org](mailto:bid_keys@ctbto.org)) within 48 hours of the Commission's request, clearly marked in Subject: Encryption Key for (example): "SOFTCOMP 2020-2010 EDWALD-Financial Offer". If your Offer is not considered "technically acceptable", the Commission will not request an Encryption Key for your Financial Offer, and it will remain unopened.

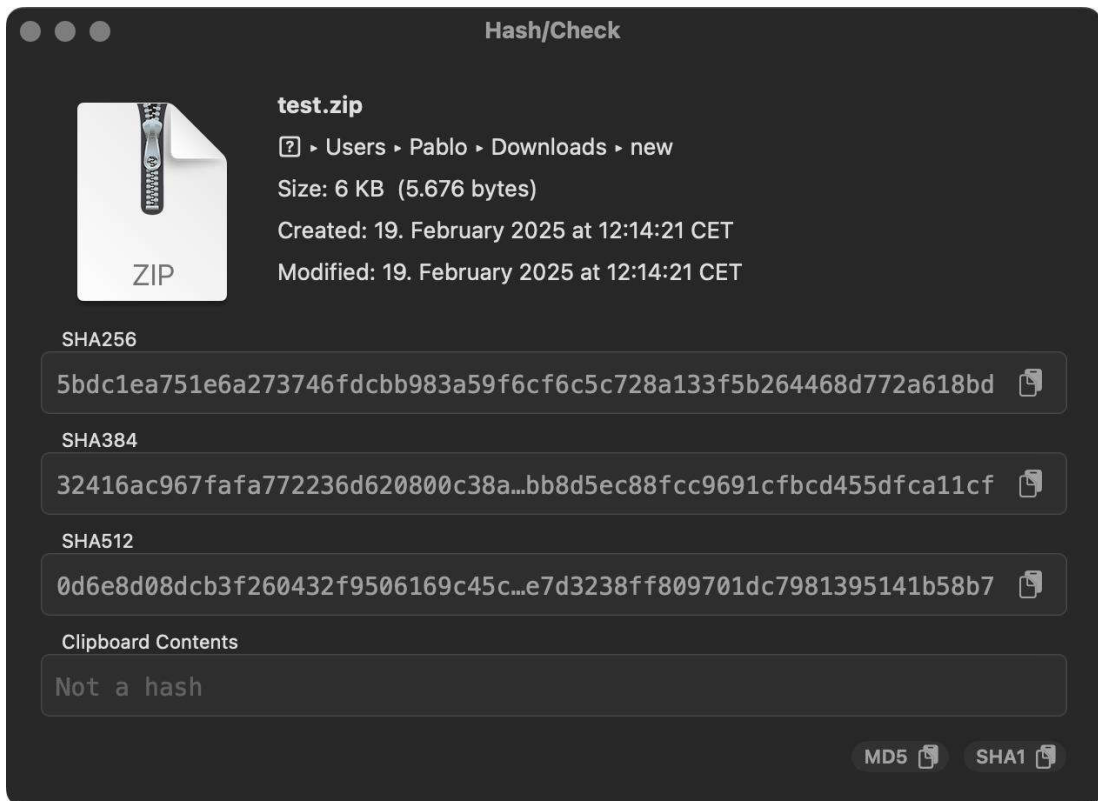
As mentioned above, should you have questions or difficulties, please send an e-mail to [procurement@ctbto.org](mailto:procurement@ctbto.org).

**For MAC users:**

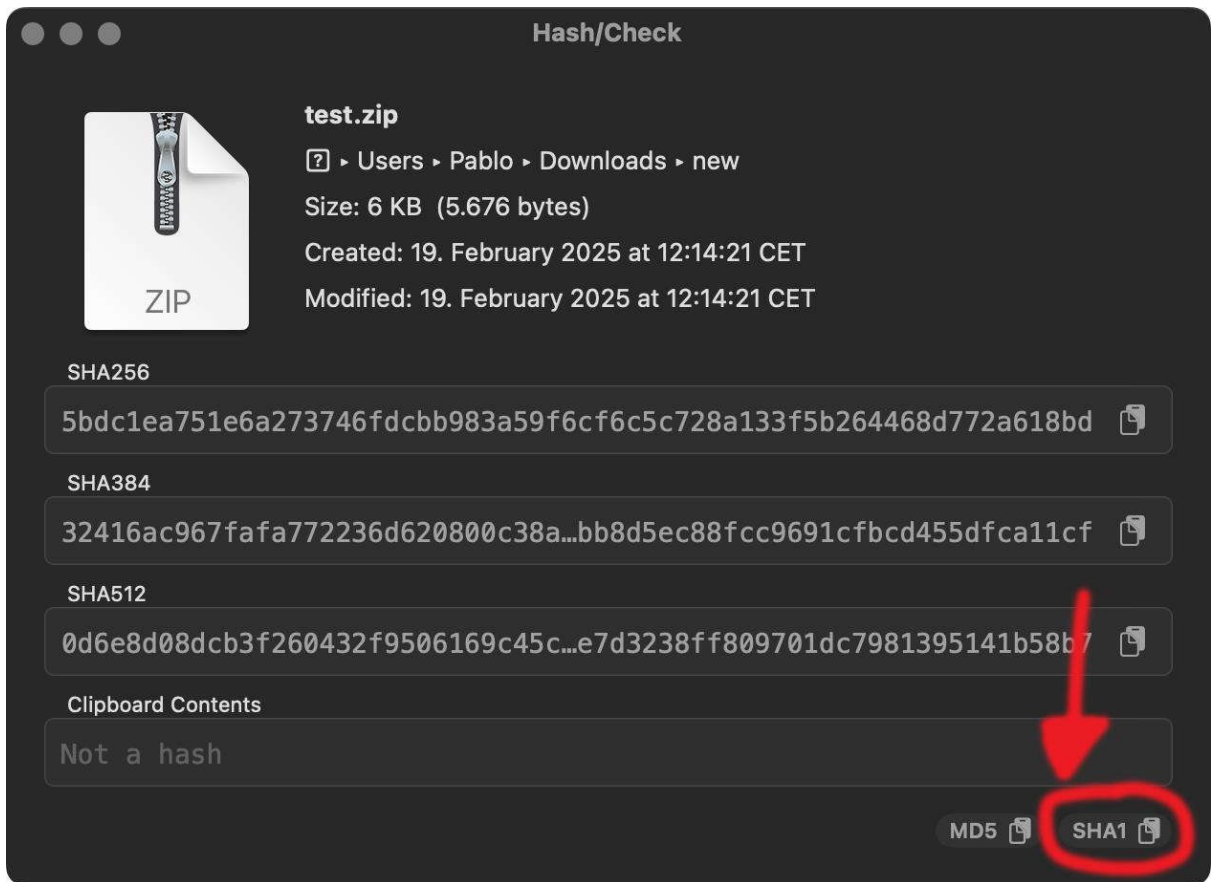
1. Please download Hash/Check app:  
<https://apps.apple.com/at/app/hash-check/id1550525767?l=en-GB&mt=12>
2. It is very simple to use. After installing, just open the app and click on “File” to open the zip file you want to inspect.



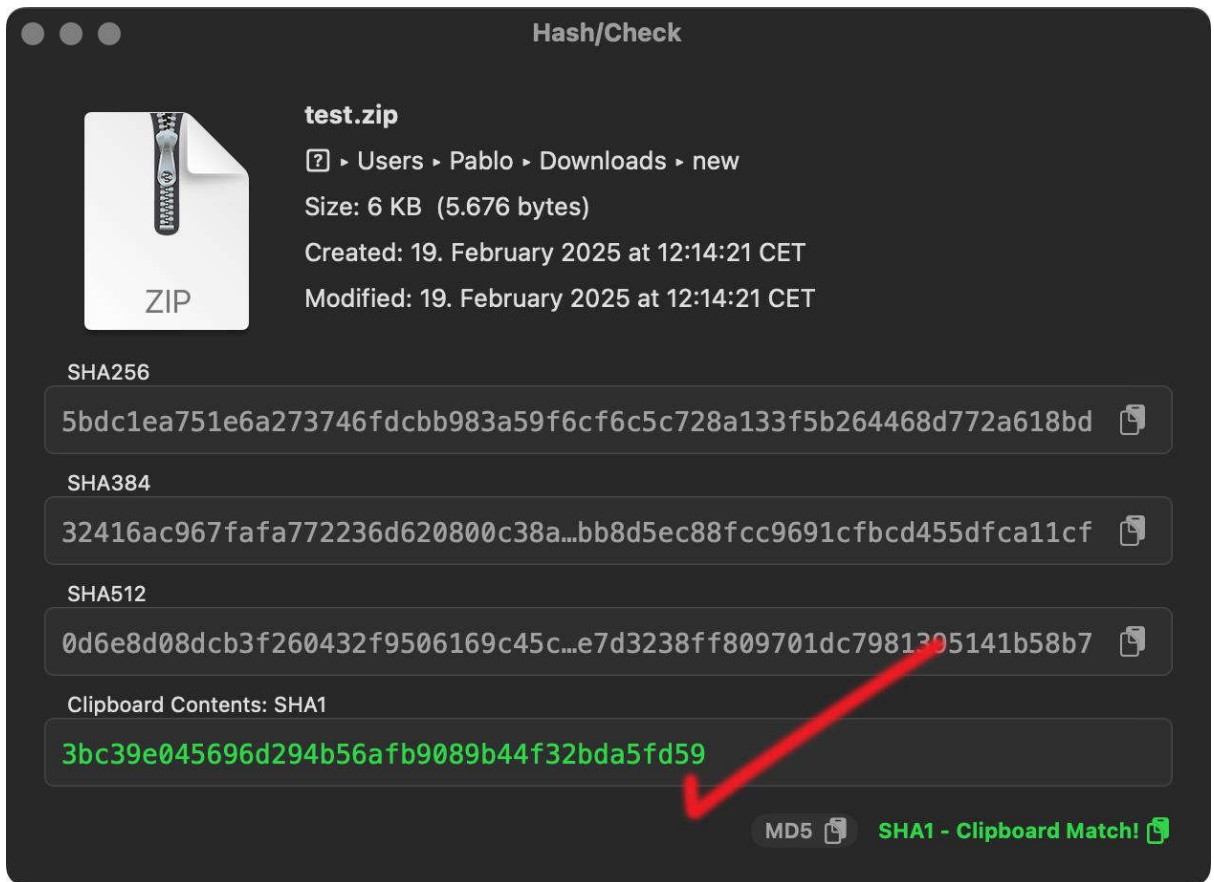
3. Please use your submitted technical and financial proposals



4. And it automatically creates several different hash values ... --- But the one we need SHA1 is not there ...  
So you press on the little SHA1 icon on the bottom right ...



5. The SHA1 hash is calculated and copied to the clipboard automatically for further use.



-----OR-----

Another alternative would be to use the terminal and the command: `shasum /path/to/file`  
Here is a little tutorial on how to use it. It is strait forward and simple to use. Please see attached the instructions as a pdf as well.

<https://osxdaily.com/2012/02/05/check-sha1-checksum-in-mac-os-x/>

Finally,

1. Create a new email, Subject: example- "SOFTCOMP-2020-0010-EDWALD". Add the two compressed archives, that is, the Technical Offer and the Financial Offer archives as attachments. The text of the email should contain the SHA1 information for both archives. **SEND THIS TO:** [sealed\\_bids@ctbto.org](mailto:sealed_bids@ctbto.org) (note that there is an underscore "\_" between "sealed" and "bids"). (Should the email become larger than your mail system allows, you can try sending the two archives in separate emails. Take care to include the right SHA1 information with each file.)

2. Create a new email, Subject: example- "SOFTCOMP-2020-2010-EDWALD-Technical Offer" the contents of which must contain the Encryption Key for the Technical Offer (the password you used when creating the Technical Offer). (Again, note the underscore between 'bid' and 'keys'.)

**SEND THIS TO:** [bid\\_keys@ctbto.org](mailto:bid_keys@ctbto.org)

**IMPORTANT NOTE:** As stated above, only send the Encryption Key for the Technical Offer to the [bid\\_keys@ctbto.org](mailto:bid_keys@ctbto.org) mailbox when sending your Technical and Financial Offer to the [sealed\\_bids@ctbto.org](mailto:sealed_bids@ctbto.org) mailbox. **You shall only send the Encryption Key for the Financial Offer to the Commission if and when informed by the Commission that your Technical Offer had been evaluated as "technically acceptable".**

The Financial Offer Encryption Key will need to be provided by you to the same e-mail ([bid\\_keys@ctbto.org](mailto:bid_keys@ctbto.org)) within 48 hours of the Commission's request, clearly marked in Subject: Encryption Key for (example): "SOFTCOMP 2020-2010 EDWALD-Financial Offer". If your Offer is not considered "technically acceptable", the Commission will not request an Encryption Key for your Financial Offer, and it will remain unopened.

As mentioned above, should you have questions or difficulties, please send an e-mail to [procurement@ctbto.org](mailto:procurement@ctbto.org).

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**Attachment 2: Evaluation Criteria and Method**

*PROVISION OF SOFTWARE ENGINEERING SERVICES FOR DATABASE AND WEB APPLICATIONS - DATABASE OF THE TECHNICAL SECRETARIAT MODERNIZATION (DOTS MODERNIZATION) ON A CALL-OFF BASIS*

TECHNICAL EVALUATION CRITERIA				Points and Scoring		
No.	Ref No. in TOR	SECTION 1: PASS/FAIL Qualification Criteria		PASS/FAIL		
<b>V.1 Contractor's requirements</b>						
1	V.1.1.	A minimum of four (4) staff shall be included in the Team Roster that shall meet the requirements as described in Section V.2.4 (individually) and Section V.2.5 (as a team) of the ToR. This shall apply throughout the Contract period.		PASS/FAIL		
2	V.1.2.	Demonstrated experience implementing at least three (3) projects of similar scope and complexity.		PASS/FAIL		
3	V.1.3.	Demonstrated experience, in the last five (5) years, in using a recognized formal project management methodology (how the work is to be managed and controlled, risk management, reporting, planning and assurance of quality), such as PRINCE2.		PASS/FAIL		
4	V.1.4.	Demonstrated experience, in the last five (5) years, in using a formal software engineering methodology and providing services using an Agile framework, such as Scrum.		PASS/FAIL		
5	V.1.5.	Staff turnover has been and is kept below 20% per year over the past three (3) years.		PASS/FAIL		
6	V.1.6.	All reports, documentation, and communication (written and oral) to be submitted to the Commission shall be in English and in an electronic format.		PASS/FAIL		
7	V.1.7.	Provide a warranty period of at least two (2) years after the completion of the user acceptance testing (see Section VI of the ToR). Terms and conditions of post-warranty support and bug fixes shall be clearly specified and be included in the Contract.		PASS/FAIL		
8	V.1.8.	Working hours of relevant staff (e.g. project manager and lead developers) assigned to a Software Team, to overlap at least two (2) hours with the Commission's working hours (9am to 5pm CET), as deemed necessary by the Commission.		PASS/FAIL		
9	V.1.10.	Bidder has established an escalation and remediation procedures in case of delayed service delivery.		PASS/FAIL		
10	V.1.11	Bidder has a demonstrated secure software development methodology in place, including documented secure coding standards, security testing practices, and procedures for the remediation of identified vulnerabilities, which will be applied throughout the software development lifecycle for all activities outlined in ToR.		PASS/FAIL		
<b>V.2.4 Requirements for each member of the Team Roster</b>						
11	V.2.4.1.	At least two (2) years of recent experience using Agile framework such as Scrum.		PASS/FAIL		
12	V.2.4.2.	At least two (2) years of recent experience working with a state-of-the-art ticket management system such as Jira.		PASS/FAIL		
<b>V.2.5 Skills and experience amongst the members of the Team Roster</b>						
13	V.2.5.1.	A minimum of two (2) years of demonstrated experience in software engineering (eliciting use cases and requirements, design, development, support, maintenance and enhancement, documentation) for operational software systems.		PASS/FAIL		
14	V.2.5.2.	A minimum of two (2) years of demonstrated experience providing software maintenance and support services for complex and custom software systems.		PASS/FAIL		
15	V.2.5.3.	A minimum of two (2) years over the past five (5) years, in the development of RESTful APIs using Java (e.g. Spring Framework).		PASS/FAIL		
16	V.2.5.4.	A minimum of two (2) years over the past five (5) years, in the development of RESTful APIs using TypeScript.		PASS/FAIL		
17	V.2.5.5.	A minimum of two (2) years over the past five (5) years, in the development of web applications, using React.		PASS/FAIL		
18	V.2.5.6.	A minimum of two (2) years of development experience with SQL databases, including experience using Oracle.		PASS/FAIL		
19	V.2.5.7.	A minimum of one (1) year of experience with message brokers, preferably using Kafka and/or RabbitMQ.		PASS/FAIL		
20	V.2.5.8.	A minimum of one (1) year of experience integrating authentication and authorization mechanisms using standards such as OAuth 2.0, OpenID Connect, or SAML.		PASS/FAIL		
21	V.2.5.9.	A minimum of two (2) years of experience, over the past five (5) years, in software security engineering, including secure software development practices and API security design. A recognized security certification, such as CISSP, CSSLP, or equivalent, would be an asset.		PASS/FAIL		
22	V.2.5.10.	A minimum of three (3) years of experience as a solutions architect of an information system.		PASS/FAIL		
23	V.2.5.11.	A minimum of one (1) year of experience using a disciplined approach for planning, designing, executing and reporting on software testing, including scripting techniques for automated testing.		PASS/FAIL		
24	V.2.5.12.	A minimum of one (1) year of experience over the past five (5) years as a User Experience and Interaction designer on projects with similar scope, that demonstrate the solid understanding of Software development methodologies.		PASS/FAIL		
25	V.2.5.13.	A minimum of two (2) years of demonstrated experience as a business analyst, requirements engineer or equivalent, having in-depth knowledge of requirements engineering, definition of requirements engineering processes and practices.		PASS/FAIL		
26	V.2.5.14.	A minimum of one (1) year of demonstrated experience with GitLab CI and/or Jenkins.		PASS/FAIL		
27	V.2.5.15.	A minimum of one (1) year of demonstrated experience designing and implementing a disciplined approach for continuous integration using Docker/OCI containers and Kubernetes.		PASS/FAIL		
28	V.2.5.16.	A minimum of one (1) year of demonstrated experience over the past five (5) years in developing geospatial/digital mapping applications.		PASS/FAIL		
29	V.2.5.17.	A minimum of six (6) months of demonstrated experience using AI tools, including Large Language Models (LLMs), for software engineering tasks such as code generation, documentation, or testing.		PASS/FAIL		
<b>VII Standards and Working Environment</b>						
30	VII	Confirmation that the Contractor shall adhere to the described standards and the working environment.		PASS/FAIL		

No.	Ref No. in TOR	SECTION 2: Scoring Matrix technical criteria	Points and Scoring		
<b>Quality of the proposal</b>					
31	Overall	Completeness: Extent to which all aspects of the ToR have been addressed in sufficient detail.	5	2	10
32	Overall	Clarity: Understanding of the scope, and of the duties and responsibilities of the Contractor.	5	2	10
33	Overall	Effectiveness: Suitability of proposed approach/methodology for approaching work and completing deliverables.	5	2	10
			<b>Subtotal</b>	<b>15</b>	<b>30</b>
<b>V.1 Contractor's requirements</b>			<b>Max Points</b>	<b>Weight/Factor</b>	<b>Max Score</b>
34	V.1.9.	Has a demonstrated Risk Management methodology in place and which will be applied for the execution of the outlined software development activities in the ToR as per Section VII.4 of the ToR.	5	1	5
35	V.1.12.	Use of standard approach for quality assurance, operational efficiency and customer satisfaction, a current CMMI level 3 or higher, or ISO 9001 certification, would be an asset.	5	1	5
36	V.1.13.	Use of standard approach to manage IT services, preferably ITIL, ISO 20000 certification or equivalent.	5	1	5
			<b>Subtotal</b>	<b>15</b>	<b>15</b>
<b>V.2.5 Skills and experience amongst the members of the Team Roster</b>			<b>Max Points</b>	<b>Weight/Factor</b>	<b>Max Score</b>
37	V.2.5.9.	A recognized security certification, such as CISSP, CSSLP, or equivalent, would be an asset.	5	1	5
38	V.2.5.10.	An ISAOB (International Software Architecture Qualification Board) certification or equivalent, would be an asset.	5	1	5
39	V.2.5.11.	An ISTQB (International Software Testing Qualifications Board) certification or equivalent, would be an asset.	5	1	5
40	V.2.5.13.	An IREB (International Requirements Engineering Board) certification or equivalent, would be an asset.	5	1	5
41	V.2.5.14.	Experience with a repository manager like Nexus, would be an asset.	5	1	5
42	V.2.5.16.	Having experience with OpenLayers, would be an asset.	5	1	5
			<b>Subtotal</b>	<b>30</b>	<b>30</b>
			<b>TOTAL - Technical Evaluation</b>	<b>60</b>	<b>75</b>

**TECHNICAL EVALUATION METHOD:**

The technical evaluation process will be done in two stages:

- Stage 1:** Technical Proposals will first be evaluated against the mandatory requirements outlined in section 1 above, on a PASS/FAIL basis. Compliance with all mandatory requirements is required in order to pass stage 1 of the technical evaluation and to be further considered for stage 2 of the technical evaluation process;
- Stage 2:** The technical Proposals that have passed stage 1 of the technical evaluation process, will be evaluated against the weighted criteria set forth in the scoring matrix above. In order to pass this stage, bidders must obtain minimum Weighted Score of 45 based on the scoring table indicated below.

Points	Scoring
0	Unsatisfactory - Response incomplete, inadequate and/or non-responsive to the criterion. Bidder does not clearly understand the criterion
1 - 2	Weak - Does not meet the minimum requirements of the criterion
3	Good - Meets the minimum requirements of the criterion
4	Very good - Exceeds the criterion in some areas
5	Excellent - Exceeds the criterion in all areas

**FINANCIAL EVALUATION METHOD:**

The financial offers of bidders passing the technical evaluation will be evaluated in accordance with the formula given below:

$$X \times \text{Max Available Points} \times Y/Z$$

Legend:

- X= points to be assigned to the offer being evaluated
- Y= price of the lowest priced, technically compliant offer
- Z= price of the offer being evaluated

The weight of the technical and financial components is **70%** and **30%** respectively.

**SELECTION:**

The Contract will be awarded to the bidder(s) receiving the highest combined score resulting from the technical and financial evaluations, subject to contractual and commercial acceptability.

**RFP 2026-0042/RICKARD**  
**Provision of Software Engineering Services for Database and Web Applications - Database of the Technical Secretariat (DOTS)**  
**Modernization**  
**On a Call-Off Basis**

**Attachment 3: MINIMUM CONTENT OF TECHNICAL PROPOSAL AND TECHNICAL COMPLIANCE MATRIX**

**Below sets out the Minimum content of the Proposal and the Mandatory Requirements of the Technical Proposal. Bidders are requested to demonstrate compliance with the requirements and add any further information in support of their Proposal. Please refer to the relevant section of the Terms of Reference for further explanation of the requirements. The information provided will form an integral part of the technical evaluation process.**

**Part II of this document must be completed and returned as part of the Proposal.**

**Part I**

Item	Minimum content
<b>1. Executive Summary</b>	Provide an overview of the proposal
<b>2. Experience, Resources and Project Management</b>	
2.1 Corporate Profile and Values	<ul style="list-style-type: none"> <li>• Brief background of the company, mission/vision, ownership, size, location, number of personnel by type profile, etc.</li> <li>• Company business structure and its authority to execute all Work under the Contract.</li> <li>• If a consortium, provide a clear explanation of the business relationship between the members and governance for the execution of this project.</li> <li>• In case the Bidder requires the services of subcontractors, the Proposal shall include:               <ol style="list-style-type: none"> <li>a) Relationship of the Bidder’s business to any subcontractor(s) that will be used.</li> <li>b) Names, addresses, legal status, and qualifications of major sub-contractor(s) proposed by your organization.</li> <li>c) The scope of work and nature of subcontracting.</li> </ol> </li> </ul>
2.2 Corporate Experience	The proposal should detail the Bidder’s experience in executing work of similar scope and complexity.
2.3 Requirements for the Contractor	The Proposal should address and describe all requirements spelled out under Section V and VII of the Terms of Reference (ToR).

<b>3. Meeting the Requirements</b>	
3.1 Understanding of the ToR	<ul style="list-style-type: none"> <li>• Please describe your understanding of the services that are to be provided under this ToR, detailing key assumptions that impact the Technical Proposal.</li> <li>• Please discuss how you propose to address some of the sample tasks listed in Section III (Scope of Work) and Section IV (Provision of Software Engineering Services) of the ToR.</li> </ul>
<b>4. Contractor's key staff</b>	
4.1. Visa & Work Permits	Provide written confirmation that the Bidder understands and agrees to take responsibility for obtaining any Visa and/or work permits, which may be required to perform the Work under the Contract. The CTBTO does not sponsor work permits for contractors.
4.2. Documentation and Reporting	Provide written assurance that all reports, documentation, and communication (written and oral) supplied to the Commission shall be in English and submitted in electronic form.
<b>5. Model Contract</b>	
	A statement that the bidder has carefully reviewed the Model Contract and its Annexes and is in agreement with all its terms and conditions.

**Part II – Compliance Matrix**

<b>ToR Ref:</b>	<b>Requirement</b>	<b>Bidder Compliance (Yes/No)</b>	<b>Indicate the section in your Proposal and ensure that it is sufficiently described in the Proposal</b>
<b>IV</b>	<b>Provision of Software Engineering Services</b>		
<b>IV.1</b>	<b>Software Development and Enhancement</b>		
<b>IV.1.1</b>	<b>Work Specifications</b>		
	<p>The Contractor confirms its capability and capacity to provide to the Commission Software Development and Enhancement Work, which may involve, but is not limited to, the following tasks:</p> <ul style="list-style-type: none"> <li>• A review of the requirements specifications, any existing systems and databases, and additional information requirements, and comments expressed by the Commission’s technical point of contact. The outcome of this step shall be a revised requirements document forming the basis for planning the Work.</li> <li>• Analysis of the requirement and design of the deliverables.</li> <li>• Code quality with well-defined testing plan.</li> <li>• Scheduling of the deliverables and estimating the effort to execute the Work.</li> <li>• Delivery and acceptance support of each deliverable.</li> <li>• Delivery of the documentation agreed for each project which will provide the Commission staff with a sound understanding of the rationale of the developed component, so that these staff can maintain and expand the system accordingly.</li> </ul>		
<b>IV.1.2</b>	<b>Deliverables</b>		

	<p>The Contractor confirms its capability and capacity to provide to the Commission Deliverables that may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• A statement of the requirements / objectives of the software component.</li> <li>• Source code as per agreed coding standards.</li> <li>• Test plans, test cases, test scripts and test results (of unit test, integration and system test and when applicable regression test).</li> <li>• Results of review and inspection (architectural, database design, code, documentation when applicable).</li> <li>• Technical documentation including design documents for the software components as per agreed standards.</li> <li>• Workshops or (tele)conferences for knowledge transfer to the Commission staff.</li> <li>• Recommendations / guidelines to help the Commission staff adhere to the implementation / design concepts.</li> <li>• Configuration management plan.</li> <li>• Deployment and Release policies.</li> </ul>		
<b>IV.2</b>	<b>Software Support and Maintenance</b>		
<b>IV.2.1</b>	<b>Work Specifications</b>		
	<p>The Contractor confirms its capability and capacity to provide Software Support and Maintenance Work to the Commission, which may involve, but is not limited to, the following tasks:</p> <ul style="list-style-type: none"> <li>• Perform remote troubleshooting.</li> <li>• Provide proactive and/or reactive support services.</li> <li>• Analysis of the current functionality of a software system.</li> <li>• Provide and/or implement software patches and updates.</li> </ul>		

	<ul style="list-style-type: none"> <li>• Migrations for major releases of software.</li> <li>• Implement deployment and release policies.</li> <li>• Provide installation and usability assistance.</li> <li>• Provide training or other services associated with operating the software.</li> <li>• Track and perform software license code updates and upgrades (when applicable).</li> </ul>		
<b>IV.2.2</b>	<b>Deliverables</b>		
	<p>The Contractor confirms its capability and capacity to provide to the Commission Deliverables that may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Training materials.</li> <li>• Source code as per agreed coding standards.</li> <li>• Test plans, test cases, test scripts and test results (of unit test, integration and system test and when applicable regression test).</li> <li>• Updated technical documentation for the software components, as per agreed standards.</li> <li>• Workshops or (tele)conferences for knowledge transfer.</li> <li>• Changelog: a description of what changes were made relative to the previous release, along with a list of files that were modified by each change. Each release shall also include a list of outstanding items to be done, including any known defects.</li> <li>• Monitoring Reports: regular reports on the performance and health of the software, including metrics such as uptime, response times, and system usage.</li> </ul>		
<b>IV.3</b>	<b>Software Testing Support</b>		
<b>IV.3.1</b>	<b>Work Specifications</b>		

	<p>The Contractor confirms its capability and capacity to provide Software Testing Support Work to the Commission, which may involve, but is not limited to, the following tasks:</p> <ul style="list-style-type: none"> <li>• Complete test preparation and execution.</li> <li>• Audit code coverage.</li> <li>• Work from software specifications to identify test data requirements and generate required test data.</li> <li>• Design, support the implementation and automate tests (unit tests, integration tests and system tests, and when applicable regression tests).</li> <li>• Correct errors by making appropriate changes and rechecking the program to ensure that the desired results are produced.</li> <li>• Report software defects and priorities.</li> <li>• Consult with managerial, engineering and technical personnel of the Commission to consolidate test efforts, identify bottlenecks, risk analysis and mitigation, and quality improvement as well as to coordinate test efforts and adapt to changing requirements and fast paced release schedules.</li> <li>• Consult with development team to troubleshoot and resolve project issues both technical and non-technical in nature.</li> </ul>		
<b>IV.3.2</b>	<b>Deliverables</b>		
	<p>The Contractor confirms its capability and capacity to provide to the Commission Deliverables that may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Test plans / cases / scripts.</li> <li>• Test results (of unit test, integration and system test and when applicable regression test).</li> <li>• Documented test standards.</li> </ul>		
<b>IV.4</b>	<b>User Experience and Interaction Design Expertise</b>		

<b>IV.4.1</b>	<b>Work Specifications</b>		
	<p>The Contractor confirms its capability and capacity to provide User Experience and Interaction Design Expertise to the Commission, which may involve, but is not limited to, the following tasks:</p> <ul style="list-style-type: none"> <li>• Ensure the logical flow of the software product.</li> <li>• Conduct in-person user tests to observe users' behaviour.</li> <li>• Refine and iterate to optimize user experience.</li> <li>• Support business analysis and software requirements, architecture and design tasks.</li> <li>• Develop Software Standards.</li> <li>• Mentor other Software Team members in User Experience methodologies.</li> <li>• Audit existing software designs and implementations in terms of user experience in preparation for upgrades / enhancements.</li> </ul>		
<b>IV.4.2</b>	<b>Deliverables</b>		
	<p>The Contractor confirms its capability and capacity to provide to the Commission Deliverables that may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Wireframes, prototypes, and interaction design specifications (low- and high-fidelity as appropriate).</li> <li>• User journey maps and workflow diagrams illustrating logical software flows.</li> <li>• Recommendations and guidelines to support the Software Team in applying User Experience methodologies and principles.</li> </ul>		
<b>IV.5</b>	<b>CI/CD/DevOps Support</b>		
<b>IV.5.1</b>	<b>Work Specifications</b>		

	<p>The Contractor confirms its capability and capacity to provide CI/CD/DevOps Support to the Commission, which may involve, but is not limited to, the following tasks:</p> <ul style="list-style-type: none"> <li>• Mentor other Software Team members in CI/CD/DevOps methodologies.</li> <li>• Develop release and deployment policies.</li> <li>• Support the implementation of release and deployment policies.</li> <li>• Support scripting of automated deployment (and rollback) of releases.</li> <li>• Design, implement and maintain infrastructure for running and evaluating the Software.</li> <li>• Adjust operating system settings, Docker runtime, and container orchestration parametrisation.</li> <li>• Support developers in testing and running the Software on development machines.</li> </ul>		
<b>IV.5.2</b>	<b>Deliverables</b>		
	<p>The Contractor confirms its capability and capacity to provide to the Commission Deliverables that may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• CI/CD pipeline design documentation, describing the architecture, toolchain, and workflow for build, test, and deployment automation.</li> <li>• Implemented and documented CI/CD pipeline configurations.</li> <li>• Release and deployment policy documentation, including rollback procedures and environment promotion strategies.</li> <li>• Infrastructure-as-Code (IaC) scripts and configuration files for container orchestration and environment setup (e.g., Kubernetes manifests, Helm charts, Dockerfiles).</li> <li>• Guidelines and documentation to support developers in building, testing, and running the Software on development machines.</li> </ul>		

<b>IV.6</b>	<b>Geospatial Visualization and Web Mapping Support</b>		
<b>IV.6.1</b>	<b>Work Specifications</b>		
	<p>The Contractor confirms its capability and capacity to provide Geospatial Visualization and Web Mapping Support to the Commission, which may involve, but is not limited to, the following tasks:</p> <ul style="list-style-type: none"> <li>• Assist in searching and collecting information from the raw data.</li> <li>• Prototype GUI elements to help visualize extracted insights from large datasets on geospatial maps.</li> </ul>		
<b>IV.6.2</b>	<b>Deliverables</b>		
	<p>The Contractor confirms its capability and capacity to provide to the Commission Deliverables that may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• UI/UX prototypes and mockups for map-based visualizations, illustrating proposed approaches for displaying geospatial information.</li> <li>• Implemented web mapping components (e.g., using OpenLayers), integrated with the DOTS frontend and compatible with map layers provided by the Commission.</li> <li>• Technical documentation describing the design, configuration, and usage of geospatial visualization components.</li> <li>• Recommendations and guidelines for best practices in geospatial data visualization within the DOTS ecosystem.</li> </ul>		
<b>V.1</b>	<b>Contractor's requirements</b>		
V.1 1.	A minimum of four (4) staff shall be included in the Team Roster that shall meet the requirements as described in Section V.2.4 (individually) and Section V.2.5 (as a team) of this ToR. This shall apply throughout the Contract period.		

V.1 2.	Demonstrated experience implementing at least three (3) projects of similar scope and complexity.		
V.1 3.	Demonstrated experience, in the last five (5) years, in using a recognized formal project management methodology (how the work is to be managed and controlled, risk management, reporting, planning and assurance of quality), such as PRINCE2.		
V.1 4.	Demonstrated experience, in the last five (5) years, in using a formal software engineering methodology and providing services using an Agile framework, such as Scrum.		
V.1 5.	Staff turnover has been and is kept below 20% per year over the past three (3) years.		
V.1 6.	All reports, documentation, and communication (written and oral) supplied to the Commission shall be in English and submitted in an electronic form.		
V.1 7.	Provide a warranty period of at least two (2) years after the completion of the user acceptance testing (see Section VI of this ToR). Terms and conditions of post-warranty support and bug fixes shall be clearly specified and be included in the Contract.		
V.1 8.	Working hours of relevant staff (e.g. project manager and lead developers) assigned to a Software Team, to overlap at least two (2) hours with the Commission's working hours (9am to 5pm CET), as deemed necessary by the Commission.		
V.1 9.	Has a demonstrated Risk Management methodology in place and which will be applied for the execution of the outlined software development activities in these Terms of Reference as per Section VIII of this ToR.		
V.1 10.	Has established an escalation and remediation procedures in case of delayed service delivery.		

V.1 11.	Has a demonstrated secure software development methodology in place, including documented secure coding standards, security testing practices, and procedures for the remediation of identified vulnerabilities, which will be applied throughout the software development lifecycle for all activities outlined in these Terms of Reference.		
V.1 11. (asset)	Use of standard approach for quality assurance, operational efficiency and customer satisfaction, a current CMMI level 3 or higher, or ISO 9001 certification or equivalent.		
V.1 12. (asset)	Use of standard approach to manage IT services, preferably ITIL. ISO 20000 certification or equivalent.		
<b>V.2</b>	<b>Team Roster</b>		
<b>V.2.3</b>	<b>Software Team</b>		
V2.3 1.	The Contractor shall ensure that <u>each</u> member of the Software Team: <ul style="list-style-type: none"> <li>• is dedicated to the project during the development period (unless otherwise agreed in writing by the Commission); and</li> <li>• is not re-assigned from the project without the prior written consent of the Commission.</li> </ul>		
V2.3 2.	The Contractor shall satisfy the following mandatory requirements: <ul style="list-style-type: none"> <li>• Establish and share with the Commission, a pre-screening process to identify suitable staff.</li> <li>• Provide documented evidence that the proposed Software Team is appropriately skilled and experienced to carry out the work plan.</li> <li>• Upon written request by the Commission, replace Software Team members deemed to be performing unsatisfactorily or provide specific training to address a gap in knowledge identified after a Software Team member has started his or her assignment, at no cost for the Commission.</li> </ul>		

	<ul style="list-style-type: none"> <li>• Establish an induction program, at no cost for the Commission, to help new members of the Software Team become operational within a predefined period after the acceptance of the start of their assignment for the Commission. The duration of the period will normally be from one (1) to three (3) months depending on the type of service.</li> <li>• Ensure that the knowledge is retained in the team roster in case of staff turnover, at no cost for the Commission.</li> <li>• Inform the Commission of a planned change of a team member with a minimum of one (1) month notice to allow for enough time for the pre-screening process.</li> <li>• Confirm that the Software Team shall continuously keep abreast of the technological advancements, thereby supporting the Commission by delivering high-quality and innovative software solutions.</li> </ul>		
V.2.3 3.	The Contractor shall be proactive in identifying and proposing additional resources and/or expertise to the Software Team based on the current needs for the Software Project.		
<b>V.2.4</b>	<b>Requirements for each member of the Team Roster</b>		
V.2.4 1.	At least two (2) years of recent experience using Agile framework such as Scrum.		
V.2.4 2.	At least two (2) years of recent experience working with a state-of-the-art ticket management system such as Jira.		
V.2.4 3.	Fluent communication in English.		
<b>V.2.5</b>	<b>Skills and experience amongst the members of the Team Roster</b>		
	The following combined skills and experience shall be available in the Team Roster, and shall be maintained for the duration of the Contract; at the minimum, three (3) of these requirements shall be met by each individual in the Team Roster, but all of these skills and experience shall be available in the Team Roster aggregate		

	<ol style="list-style-type: none"><li>1. A minimum of two (2) years of demonstrated experience in software engineering (eliciting use cases and requirements, design, development, support, maintenance and enhancement, documentation) for operational software systems.</li><li>2. A minimum of two (2) years of demonstrated experience providing software maintenance and support services for complex and custom software systems.</li><li>3. A minimum of two (2) years over the past five (5) years, in the development of RESTful APIs using Java (e.g. Spring Framework).</li><li>4. A minimum of two (2) years over the past five (5) years, in the development of RESTful APIs using TypeScript.</li><li>5. A minimum of two (2) years over the past five (5) years, in the development of web applications, using React.</li><li>6. A minimum of two (2) years of development experience with SQL databases, including experience using Oracle.</li><li>7. A minimum of one (1) year of experience with message brokers, preferably using Kafka and/or RabbitMQ.</li><li>8. A minimum of one (1) year of experience integrating authentication and authorization mechanisms using standards such as OAuth 2.0, OpenID Connect, or SAML.</li><li>9. A minimum of two (2) years of experience, over the past five (5) years, in software security engineering, including secure software development practices and API security design. A recognized security certification, such as CISSP, CSSLP, or equivalent, would be an asset.</li><li>10. A minimum of three (3) years of experience as a solutions architect of an information system. An iSAQB (International Software Architecture Qualification Board) certification or equivalent would be an asset.</li><li>11. A minimum of one (1) year of experience using a disciplined approach for planning, designing, executing and reporting on software testing, including scripting techniques for automated testing. An ISTQB (International Software Testing Qualifications Board) certification or equivalent would be an asset.</li></ol>		
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	<p>12. A minimum of one (1) year of experience over the past five (5) years as a User Experience and Interaction designer on projects with similar scope, that demonstrate the solid understanding of Software development methodologies.</p> <p>13. A minimum of two (2) years of demonstrated experience as a business analyst, requirements engineer or equivalent, having in-depth knowledge of requirements engineering, definition of requirements engineering processes and practices. An IREB (International Requirements Engineering Board) certification or equivalent, would be an asset.</p> <p>14. A minimum of one (1) year of demonstrated experience with GitLab CI and/or Jenkins. Experience with a repository manager like Nexus, would be an asset.</p> <p>15. A minimum of one (1) year of demonstrated experience designing and implementing a disciplined approach for continuous integration using Docker/OCI containers and Kubernetes.</p> <p>16. A minimum of one (1) year of demonstrated experience over the past five (5) years in developing geospatial/digital mapping applications, having experience with OpenLayers, would be an asset.</p> <p>17. A minimum of six (6) months of demonstrated experience using AI tools, including Large Language Models (LLMs), for software engineering tasks such as code generation, documentation, or testing.</p>		
<b>VI</b>	<b>Organization of Work</b>		
	The Contractor confirms the proposed Organization of Work as detailed in Section VI of the ToR.		
<b>VI.3</b>	<b>Completion and Acceptance</b>		
	(a) At the end of a particular Work under a Sprint WO, the Contractor shall submit to the Commission the deliverables within the period of		

	<p>performance stated in the respective Sprint WO. The deliverables may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Updated Documents (e.g. Software Design Document, Software User Guide and Developers Guide.)</li> <li>• Updated source code for software and common libraries, including documentation.</li> <li>• The functionality of the delivered product.</li> </ul> <p>(b) The deliverables will be evaluated by the Commission within twenty (20) working days after delivery of the product by the Contractor.</p> <p>(c) If so requested by the Commission in a Sprint WO, upon completion of the Work(s) under the Sprint WO, the Contractor shall provide an oral presentation (including slides/handouts as required) to the Commission at its Headquarters in Vienna.</p> <p>(d) At the completion of the Work performed under an FRD resulting in an integrated and deployable version of the Software or functional subsystem (hereinafter referred to as a “Release Candidate”), the Contractor shall submit such Release Candidate for User Acceptance Testing (UAT) by the Commission.</p> <p>(e) The Commission shall perform UAT within thirty (30) working days to verify that the Release Candidate conforms to the agreed functional and non-functional requirements defined in the applicable FRD and associated Sprint Work Orders.</p>		
<b>VI.4</b>	<b>Reporting</b>		
	During the execution of the Sprint WO, the progress status must be communicated to the Commission as defined in the Sprint WO.		

	<p>At the end of the performance period stated in the Sprint WO, the Contractor shall submit a Report to the Commission, electronically via email and within five (5) working days following the completion of each Sprint WO, describing all the performed activities, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Status of the work items.</li> <li>• Remaining balance of resources in the FRD</li> </ul> <p>Within five (5) working days following the completion of the last Sprint WO of the FRD, the Contractor shall submit an End of FRD Report to the Commission, electronically via email, describing the updates of the team roster and the achievements of the Sprint WOs executed under the FRD.</p>		
<b>VII</b>	<b>Standards and Working Environment</b>		
VII.1	The Contractor shall adhere to the described software and database environment.		
VII.2	The Contractor shall adhere to the described best practices and standards.		
VII.3	The Contractor shall adhere to the described work environment.		
VII.4	<p>The Contractor shall provide a business continuity and risk assessment plan at the commencement of the Contract to identify potential risks that could impact the successful execution of the implementation activities outlined in this Terms of Reference.</p> <p>Risks may include, but are not limited to, technical challenges, changes in project requirements/scope, resource constraints, schedule delays, integration difficulties, and third-party software dependencies. The risk assessment plan should be consistently updated, aligning with the delivery of Work milestones or significant accomplishments.</p>		

	<p>Upon the satisfactory completion of the Work, the Contractor shall conduct a final review of the initially identified risks. Risks that have been effectively mitigated or did not materialize should be officially closed, accompanied by appropriate documentation.</p> <p>The insights gained from the risk management process should be methodically documented and shared with the client, thereby contributing to the knowledge repository for forthcoming similar Works.</p>		
VII.5	<p>The Contractor shall implement and maintain appropriate technical and organizational measures to protect the confidentiality, integrity, and availability of CTBTO's information and systems throughout the duration of the Contract. Access to CTBTO systems and data shall be granted on a least-privilege basis with multi-factor authentication, and access rights shall be reviewed regularly and revoked promptly upon personnel departure or contract end. All data shall be encrypted in transit and at rest, and any identified vulnerabilities shall be remediated in a timely manner commensurate with their severity, supported by annual independent penetration testing. The Contractor shall designate a named point of contact responsible for information security matters for the duration of the Contract.</p> <p>Where the Contract involves software development, the Contractor shall apply secure development practices throughout the software lifecycle, conducting appropriate security testing prior to any deployment into a production environment and remediating critical and high findings before go-live.</p>		

**RFP 2026-0042/RICKARD**  
**SOFTWARE ENGINEERING SERVICES FOR**  
**DATABASE AND WEB APPLICATIONS – DATABASE OF THE TECHNICAL SECRETARIAT MODERNIZATION (DOTS MODERNIZATION)**  
**ON A CALL-OFF BASIS**  
**Attachment 4: PRICE SCHEDULE FORM**

The Bidder is required to prepare the Price Schedule using this form.

The Price Schedule must provide a detailed cost breakdown of all goods and related services to be provided

NB: Example profiles are provided for your convenience - Bidders should tailor the staff profiles to match their organizational structure			CALL-OFF PERIOD 1: 24 months/ <u>maximum of 1,200 person-days</u>		CALL-OFF PERIOD 2 (OPTIONAL): 24 months/ <u>maximum of 1,200 person-days</u>		CALL-OFF PERIOD 2 (OPTIONAL): 24 months/ <u>maximum of 1,200 person-days</u>	
Person #	Staff Profile	Service Area(s) Covered	ONSITE Daily rate (EUR or USD)	OFFSITE Daily rate (EUR or USD)	ONSITE Daily rate (EUR or USD)	OFFSITE Daily rate (EUR or USD)	ONSITE Daily rate (EUR or USD)	OFFSITE Daily rate (EUR or USD)
1	Senior Software Engineer	IV.1, IV.2, IV.5						
2	Software Engineer	IV.1, IV.2						
3	DevOps / CI-CD Engineer	IV.5						
4	Test Engineer / QA	IV.3						
5	UX/UI Specialist	IV.4						
6	Geospatial/Web Mapping Specialist	IV.6						
7	Technical Lead/Architect	ALL						
<b>Estimated Travel Costs</b>			<b>EUR or USD</b>	<b>Amount</b>	<b>EUR or USD</b>	<b>Amount</b>	<b>EUR or USD</b>	<b>Amount</b>
Return Ticket per person per trip (Round Trip)								

**Notes**

- 1) It is mandatory to include the prices for the Optional extensions periods.
- 2) This is a unit-based Contract. The exact number of working days will be determined/called-off in the form of Formal Request for Delivery (FRD) or Work Order (WO) at the rates quoted in this Attachment.
- 3) The maximum number of person-days noted are an upper limit, and the Commission reserves the right, at its sole discretion, to call-off fewer person-days or no person-
- 4) Person-day rates shall be firm fixed and deemed to include all costs related to service delivery, including but not limited to, as applicable: management, coordination, reporting, quality assurance, infrastructure, travel within the place of performance, and other administrative tasks. No additional charges for project management, service management, or coordination shall apply unless explicitly requested by the Commission in the relevant FRD/WO.
- 5) Bidders shall indicate whether the travel costs (without DSA) are firm and fixed for the duration of the Contract, or they are estimated.

The Commission will request the Contractor to submit estimated costs/expenses for travel including, inter alia, airfare and terminal costs before issuing WOs. Travel costs will be reimbursed by the Commission in accordance with the Contract to the following extent:

- International/regional travel by air: simple economy return airfare for the most direct and economic route between the place of establishment of the Contractor and the premises of the Commission in Vienna, Austria. In exceptional circumstances and with prior written approval of the Commission, the Contractor may be reimbursed for flexible economy return airfare, but it remains for the Commission to approve the type of airfare that will be reimbursed.
  - International travel by other means than air travel: the rate accepted by the Commission for the most direct and economic route between the place of establishment of the Contractor and the premises of the Commission in Vienna, Austria.
  - Reasonable terminal expenses, if any, at cost and only against supporting documentation.
  - In the case the travel costs are estimated, payment shall be based on actual costs against relevant supporting documentation e.g. invoices for travel, and shall not exceed 10% of the estimate.
- 6) If applicable, Daily Subsistence Allowance (DSA) shall be calculated based on the values provided by the International Civil Service Commission (ICSC) <https://icsc.un.org/>. Daily subsistence/per diem will be reimbursed at the applicable Daily Subsistence Allowance (DSA) rate of the United Nations (and UN EUR/USD exchange rate, if applicable).

**Instructions**

**Understand the Columns:**

- Person #: This column lists the Person # in the proposed team.
- Staff Profile: This column indicates the title of the person associated with the daily rate stipulated in the column "Daily rate".
- Service Area(s) covered: This column specifies the areas listed in the ToR, which the person profile could cover.

**Input Daily Rates:**

- For each item, enter the unit price in the Unit Price (EUR or USD) column. Ensure that the price is in EUR or USD.
- Specify either EUR or USD
- \*\* Please see the Instructions for Preparation and Submission of Bids regarding any applicable taxes

**Verify Total Prices:**

- Verify that all unit prices are correct. Kindly provide any further cost breakdown on a separate sheet, as necessary

## VENDOR PROFILE FORM (VPF) – FOR PRODUCTS/SERVICES/WORK

1. Name of Company:		
2. Street Address:	3. Telephone:	
P.O. Box: City:	4. E-Mail:	
Zip Code: Country:	5. Website:	
6. Contact Person:		Title:
7. Legal Status (e.g. Partnership, Private Limited Company, Government Institution) PLEASE INCLUDE A COPY OF THE CERTIFICATE OF INCORPORATION		
8. Year Established:	9. Number of Employees:	
10. Gross Corporate Annual Turnover (US\$m)*:	11. Annual Export Turnover (US\$m)*:	
12. Type of Business/Products:    Manufacturer <input type="checkbox"/> Sole Agent <input type="checkbox"/> Supplier <input type="checkbox"/> Other <input type="checkbox"/> (please explain)		
13. Type of Business/Services/Work:    Engineering <input type="checkbox"/> Civil Work <input type="checkbox"/> Governmental Institution <input type="checkbox"/> Other <input type="checkbox"/> (please explain)		
14. References (your main customers, country, year and technical field of products, services or work): **		
15. Previous Supply Contracts with United Nations Organizations (over the last 3 years)**		
Organization:	Value in US\$ Equivalent:	Year:
Organization:	Value in US\$ Equivalent:	Year:
16. Summary of any changes in your company's ownership during the last 5 years:		

\* Please provide a copy of the most recent audited annual report and accounts. Note: Export includes services or work performed abroad or for foreign clients.  
 \*\* Please provide supplementary documentation on these items.



## STATEMENT OF CONFIRMATION

On behalf of (name of firm or organization): \_\_\_\_\_, I hereby attest and confirm that:

- a) The firm/organization possesses the legal status and capacity to enter into legally binding contracts with the Commission for the supply of equipment, supplies, services or work.
- b) The firm/organization is not insolvent, in receivership, bankrupt or being wound up, and not under administration by a court or a judicial officer, and that it is not subject to the suspension of its business or legal proceedings for any of the foregoing reasons.
- c) The firm/organization has fulfilled all its obligations to pay taxes and social security contributions.
- d) The firm/organization has not, and that its directors and officers have not, within the last five years been convicted of any criminal offense related to professional conduct or the making of false statements or misrepresentations as to their capacity or qualifications to enter into a procurement or supply contract.
- e) The Commission, in the event that any of the foregoing should occur at a later time, will be duly informed thereof, and in any event, will have the right to disqualify the firm/organization from any further participation in procurement proceedings.
- f) The firm/organization did not/will not attempt to influence any other bidder, organization, partnership or corporation to either submit or not submit a proposal/bid/quotation.
- g) The firm/organization will not, in the absence of a written approval from the Commission, permit a person to contribute to, or participate in, any process relating to the preparation of a Quotation/Bid/ Proposal or the procurement process if the person:
  - a. at any time during the 12 months immediately preceding the date of issue of the Solicitation was an official, agent, servant or employee of, or otherwise engaged by the Commission;
  - b. at any time during the 24 months immediately preceding the date of issue of the Solicitation was an employee of the Commission personally engaged, directly or indirectly, in the definition of the requirements, project or activity to which the Solicitation relates.
- h) Neither the organization/firm, its parent entities (if any), nor any of its subsidiary or affiliated entities (if any) have been identified on, or associated with any individual, groups, undertakings and entities identified on, the list established pursuant to the UN Security Council Resolution 1267 (Consolidated Sanctions List).<sup>1</sup>
- i) Neither the organization/firm, its parent entities (if any), nor any of its subsidiary or affiliated entities (if any) are subject to any form of sanction imposed by an organization or body within the United Nations System, including the World Bank.

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<sup>1</sup> The Consolidated United Nations Security Council Sanctions List can be found on the following website:  
<https://www.un.org/securitycouncil/content/un-sc-consolidated-list>

- j) Neither the organization/firm, its parent entities (if any), nor any of its subsidiary or affiliated entities (if any), is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which, inter alia, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.
- k) Neither the organization/firm, its parent entities (if any), nor any of its subsidiary or affiliated entities (if any) will use the funds received under contracts/purchase orders with the Commission to provide support to individuals, groups, undertakings or entities associated with terrorism.
- l) The prices in the firm/organization's proposal/bid/quotation have been arrived at independently, without consultation, communication or agreement with any other interested companies, competitor or potential competitor with a view to restricting competition.
- m) The Commission shall have the right to disqualify the firm/organization from participation in any further procurement proceedings, if it offers, gives or agrees to give, directly or indirectly, to any current or former staff member of the Commission a gratuity in any form, an offer of employment or any other thing of service or value, as an inducement with respect to an act or a decision of, or a procedure followed by, the Commission in connection with a procurement proceeding.
- n) The Commission shall have the right to disqualify the firm/organization from participation in any further procurement proceedings if it does not disclose to the Commission any situation that may appear as a conflict of interest, and if it does not disclose to the Commission if any official or professional under contract with the Commission have an interest of any kind in the firm/organization's business or any kind of economic ties with the firm/organization.
- o) The firm/organization expressly agrees to abide by the United Nations Supplier Code of Conduct.<sup>1</sup>

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Place (City and Country): \_\_\_\_\_

Date: \_\_\_\_\_

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<sup>1</sup> <https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct>

# MODEL CONTRACT

(SAP No. Number)

between

THE PREPARATORY COMMISSION

FOR THE COMPREHENSIVE NUCLEAR-TEST-BAN TREATY

ORGANIZATION

and

**[THE CONTRACTOR]**

for

**FOR THE PROVISION OF  
SOFTWARE ENGINEERING SERVICES FOR  
DATABASE AND WEB APPLICATIONS – DATABASE OF THE  
TECHNICAL SECRETARIAT MODERNIZATION (DOTS  
MODERNIZATION)  
ON A CALL-OFF BASIS**

This Contract comprises this cover page, a table of contents, **nine (9)** pages of text, a signatories page, a List of Annexes and three (3) Annexes (A to C)

**May** 2026

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# MODEL CONTRACT

This Contract is entered into between the **PREPARATORY COMMISSION FOR THE COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION** (hereinafter referred to as the “Commission”), having its office located at Vienna International Centre, Wagramer Strasse 5, 1400 Vienna, Austria, and [the Contractor] (hereinafter referred to as the “Contractor”), having its registered office located at [Contractor address] (both hereinafter individually referred to as the “Party” and collectively as the “Parties”).

The Parties hereto mutually agree as follows:

## 1 DEFINITIONS

In this Contract, words and expressions shall have the same meanings as respectively assigned to them in the General Conditions of Contract and the Terms of Reference. In addition, the following words and expressions shall have the meanings hereby assigned to them:

“**Annex A**” means the Commission’s General Conditions of Contract.

“**Annex B**” means the Commission’s Terms of Reference.

“**Annex C**” means the Contractor’s Proposal.

“**Contract**” means this document, its Annexes, FRD/WO, and any further modifications or such further documents as may be expressly incorporated in this Contract by the Parties in accordance with Clause 21 (Contract Amendment) below.

“**Contractor**” means the legal entity named in the preamble of this Contract or its successors. The Contractor shall be the only interface for all matters pertaining to execution of the Work under this Contract.

“**FRD**” means a Formal Request for Delivery to be issued by the Commission specifying Goods and/or Services to be provided by the Contractor upon request by the Commission in accordance with the provisions of the Contract.

“**Goods**” means the goods and/or equipment items to be supplied and delivered by the Contractor under the Contract as requested by the Commission under the respective FRD and/or WO.

“**Services**” means services provided by the Contractor under this Contract as requested by the Commission under FRDs/WOs.

“**Software**” means all computer programs, applications, systems, and related components, whether in source code, object code, or executable form, comprising both existing components and any further development, modernization, or enhancement carried out under this Contract. It includes, but is not limited to, any modules, features, enhancements, updates, upgrades, customizations, or modifications developed, delivered, or maintained under this Contract on a call-off basis.

“**Party(ies)**” means the Commission and/or the Contractor, as the context requires.

“**Rule(s)**” means any regulation(s), official directive(s), ordinance(s), guideline(s), customs and practices.

“**Work**” means all the Goods and/or Services to be provided by the Contractor, including its affiliates and/or subcontractors, in order to fulfil all its obligations under the Contract, and the remedying of any defects therein.

“**WO**” means Work Orders for (parts or portions of) the Work to be issued by the Commission under an issued FRD specifying the Work to be performed by the Contractor upon request by the Commission in accordance with Annexes B and C.

## 2 AIM OF THE CONTRACT

The aim of this Contract is to provide software engineering services for database and web applications for the DOTS Modernization (hereinafter referred to as the “**Work**”) on a call-off basis as and when required by the Commission.

## 3 ENTRY INTO FORCE AND DURATION OF THE CONTRACT

The Contract shall enter into force upon the date of the last signature by the authorized Representatives of the Parties (hereinafter referred to as the “**Effective Date**”) and shall be valid until the Parties fulfill all their obligations hereunder.

## 4 COMMENCEMENT AND COMPLETION OF THE WORK

- (a) The Commission shall have the right, but not obligation, to call-off the Work in the form of FRD/WO within a period of twenty-four (24) months from the Effective Date, or the performance of a maximum of one thousand and two hundred person-days (1,200) by the Contractor, whichever occurs first (hereinafter referred to as the “**Call-off Period**”). The commencement and completion date for the performance of the Work (hereinafter referred to as “**Commencement Date**” and “**Completion Date**”, respectively) will be set out in the respective FRD/WO. This sub-clause (a) shall also apply to any extension exercised under sub-Clause (b) below.
- (b) The Commission shall have the option to extend the Call-off Period two (2) times, each for a period of twenty-four (24) months or the performance of a maximum of one thousand and two hundred person-days (1,200) by the Contractor, whichever occurs first, subject to the availability of funds, under the same terms and conditions as those of this Contract, and subject to Clause 4 (c) below.. The Commission will inform the Contractor about its intention to extend the Work at least one (1) month prior to the expiry of the relevant Call-off Period. The optional extensions will be implemented through a written notification to the Contractor by the Commission.
- (c) The Commission shall have the option to carry over any unused person days balance from one Call-off Period to another, subject to mutual agreement between the Parties.

## **5 STANDARD OF WORK**

The Contractor shall perform the Work in a workmanlike manner in conformity with standard professional practices, using qualified personnel and in strict accordance with the Contract. The Contractor shall furnish the highest skill and judgement and cooperate with the Commission, including all the Commission's consultants and agents, in best furthering the interests of the Commission and the aim of this Contract. The Contractor shall provide efficient business administration and supervision, and it shall perform the Work in the best way and in the most expeditious and economical manner consistent with the requirements of the Contract.

## **6 RESPONSIBILITIES OF THE CONTRACTOR**

- (a) The Contractor shall provide the Work described in Annexes B and C and the relevant FRD/WO.
- (b) The Contractor shall provide qualified English-speaking personnel as necessary to perform the Work under this Contract. The key persons shall be available for possible tasks related to the Work throughout the duration of the Contract period. Any replacement of the key personnel shall be made in accordance with Clause 7 of Annex A.
- (c) The Contractor acknowledges that after the completion of the Work under this Contract, the Commission shall own the Software and source code described in Annex B and developed in this Contract and the Contractor shall have no rights in that Software or source code unless granted by the Commission under Clause 24 of this Contract or in writing under a separate agreement.

## **7 ORGANISATION OF CONTRACT IMPLEMENTATION**

- (a) During the term of the Contract, the Commission has the right, but not the obligation, to initiate performance of the Work through the issuance of individual FRDs in accordance with Annex B based on the firm fixed unit prices set out in Annex C. The Commission may issue WOs under an issued FRD specifying the Work sprint to be performed by the Contractor in accordance with Annex B. The Contractor shall not perform any Work if not requested by the Commission through a WO that is issued under an existing FRD (for Services called off in accordance with Section VI.1 of Annex B) or through an FRD (for Services called off in accordance with Section VI.2 of Annex B). However, the Contractor may propose a FRD or WO for the Commission's evaluation.
- (b) The FRD/WO issued by the Commission shall be the basis for acceptance, invoicing and payment of any Work performed by the Contractor. For an FRD/WO call-off, the Commission reserves the right, at its sole discretion, to call off less Services or no Services at all.
- (c) The performance of the Work shall be made in full in accordance with the respective FRD and/or WO. Partial service performance of a WO or a FRD will not be accepted and reimbursed without prior written agreement by the Commission.
- (d) The WOs issued under an FRD, in accordance with Section VI.2 of Annex B, can neither individually nor combined exceed any quantities of labor, travels, DSA [or Other Costs] specified in the related FRD.

- (e) The Work shall be performed at the place and within the approved Work Plan and delivery times specified in the relevant FRD and/or WO.
- (f) The Commission may revise an FRD and/or WO as and when it may deem necessary.

## **8 WARRANTY**

- (a) The provisions of Clause 33 of Annex A shall apply to the Work performed by the Contractor.
- (b) The Contractor shall ensure that the Commission shall experience no loss of service or support level by sub-contractors or repair agents acting on behalf of the Contractor.

## **9 PERMITS, NOTICES, LAWS AND ORDINANCES**

- (a) The Contractor shall obtain and pay for all permits and inspections necessary for the proper execution and completion of the Work that are customarily obtained upon execution of this Contract and that are legally required at the time the Proposal is received by the Commission. This shall include, but not be limited to, work permits, visa, or similar.
- (b) The Contractor shall give all notices required by the nature of the Work.
- (c) If the Contractor notices that the Work or any part thereof required under this Contract is not in accordance with applicable laws and Rules, or with technical or safety standards, it shall promptly notify the Commission thereof in writing.

## **10 PROTECTION OF PERSONS AND PROPERTY**

- (a) The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programmes in connection with the Work.
- (b) The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury and loss to:
  - (i) all employees on the Commission's premises and all other persons who may be affected thereby;
  - (ii) all the Work, equipment, its spare parts, materials and supplies to be incorporated therein, whether in storage on or off the Commission's premises, which are under the care, custody or control of the Contractor or any of its subcontractors; and
  - (iii) other property on the Commission's premises or adjacent thereto.
- (c) The Contractor shall give all notices and comply with all applicable laws and Rules bearing on the safety of persons and property and/or their protection from damage, injury and loss.
- (d) The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for the safety and protection of persons and property, including posting danger signs and other warnings against hazards and promulgating safety regulations.

- (e) When the use or storage of combustible, explosive or other hazardous materials is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.
- (f) The Contractor shall be responsible for the prevention of accidents on the Commission's premises during the execution of the Work.
- (g) In any emergency affecting the safety of persons or property, the Contractor shall promptly act to prevent threatened damage, injury and loss.
- (h) The Contractor shall promptly remedy all damage and loss to any property, referred to in Sub-Clause (b) above, caused in whole or in part by the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the Contractor is responsible under Sub-Clause (b) above, except damage and loss attributable to the acts or omissions of the Commission or anyone directly or indirectly employed by it, or of anyone for whose acts the Commission may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to its obligations under Clause 9 of Annex A.

## 11 RESPONSIBILITIES OF THE COMMISSION

The Commission shall designate members of its staff to act as points of contact for the Contractor to ensure that the Work is carried out in accordance with Annex B, Annex C and the relevant FRD/WO and shall promptly notify the Contractor thereof. The Commission shall respond promptly to requests for information by the Contractor regarding the Work.

## 12 CONTRACT PRICE

- (a) For each FRD and/or WO issued during the relevant Call-off Periods specified in Clause 4 above, the Commission shall pay to the Contractor, in consideration of the full and proper performance of its obligations under the Contract, as follows:
    - (i) The firm fixed person-day rate pursuant to Annex C applicable to the relevant Call-off Period;
    - (ii) If applicable, daily subsistence allowance (DSA) based on the applicable United Nations DSA rates published by the International Civil Service Commission (ICSC) and effective at the time of the respective travel (the FRD, and any related WO, will include the UN DSA rates applicable at the time of issuance of the FRD), unless specified otherwise by the Commission;
    - (iii) If applicable, the actual incurred travel costs, excluding DSA, based on the most economic and direct route and relevant supporting documentation of costs actually incurred subject to Clause 13(a)(ii) below;
    - (iv) If applicable, any other costs pursuant to Annex C;
- (hereinafter altogether referred to as the “**Contract Price**”).

- (b) The firm fixed person-day unit prices set out in Annex C shall be held fixed for the entire duration of the Contract.
  - (c) The Contract Price shall cover all costs and expenses incurred by the Contractor for the full and proper performance of all relevant obligations under the Contract (including travel, allowances, management and remuneration of the personnel, national income tax, medical insurance, and social security contributions).
  - (d) **[PLEASE IDENTIFY WHETHER TAXES ARE APPLICABLE UNDER THIS CONTRACT AND SELECT ONE OF THE FOLLOWING OPTIONS AT THE TIME OF AWARD]:**
  - (e) The Contractor shall be reimbursed by the Commission for such taxes on the basis of actual amounts paid and duly documented by the Contractor as per Clause 13(e) below.
- OR**
- (f) No Taxes are applicable under this Contract.

### 13 PAYMENT

- (a) The Contract Price shall be paid upon satisfactory completion of each deliverable for the Work and satisfactory completion of each FRD/WO and submission of the following:
  - i) Invoice drawn up in accordance with this Clause 13;
  - ii) If applicable, supporting documentation referred to in Clause 12(a)(iii) above. Payment by the Commission of any such estimated travel costs shall not exceed 10% (ten percent) of the estimated amount in the FRD/WO;
  - iii) Any other documentation that might be required under the applicable FRD/WO.
- (b) The Commission will make the payments to the Contractor on the basis of an invoice submitted by the Contractor as per Sub-Clause (d) below. All payments shall be made within 30 (thirty) days of the receipt and acceptance of the invoice, provided that the Work has been satisfactorily completed and has been accepted by the Commission.
- (c) The making of any payment hereunder by the Commission shall not be construed as an unconditional acceptance by the Commission of the Work accomplished by the Contractor up to the time of such payment.
- (d) The Contractor shall submit an invoice electronically, from the Contractor's official e-mail address in PDF format, duly signed and stamped by the Contractor and submitted to the Commission's email address specified in Clause 22 below. Each invoice shall contain the Contract number (CTBTO and SAP numbers), detailed banking instructions, including the name and address of the Contractor's bank, account number, account holder's name and SWIFT, IBAN and/or ABA codes for payment by electronic transfer.

**[PARAGRAPH (e) BELOW ONLY APPLIES IF THERE ARE TAXES (SEE CLAUSE 12 (d) ABOVE). IF NO TAXES ARE APPLICABLE UNDER THIS CONTRACT, PARAGRAPH (e) SHOULD BE OMITTED.]**

- (e) Applicable Taxes payable by the Contractor and/or its subcontractor(s) in respect of the Work shall be invoiced separately or be separately identified on the invoice. Actual payment of the Taxes must primarily be supported by original documentation such as invoices, bank account statements, transfer orders, or receipts issued by the local tax or customs authorities. If submission of such original documentation is not possible for justifiable reasons, their copies could be accepted by the Commission provided that they are duly signed and certified by local tax or customs authorities. In case the currency in which the Taxes are levied is not the currency of the Contract, bank statements (or equivalent) showing the exchange rate used for the conversion should be submitted to the Commission, in addition to any other supporting documentation.

#### **14 TEMPORARY SUSPENSION OF WORK**

The Commission may, at any time, temporarily suspend the Work, in whole or in part, being performed by the Contractor under this Contract by giving thirty (30) days' advance notice in writing to the Contractor. The Work so suspended shall be resumed by the Contractor on the basis of a revised time schedule and on terms and conditions to be mutually agreed upon between the Parties.

#### **15 DELAYS AND EXTENSION OF TIME**

- (a) If the Contractor is delayed at any time in the progress of the Work by any act or omission of the Commission or by any of its employees, or by any other contractor employed by the Commission, or by changes in the Work ordered by the Commission, or by any causes beyond the Contractor's reasonable control, or by any other cause which the Commission determines may justify the delay, then the time for completion of the Work shall be extended by an amendment to this Contract in accordance with Clause 21 below for such reasonable time as the Commission may determine.
- (b) Any request for extension of the time for reasons referred to in Clause 15(a) above shall be submitted to the Commission not later than twenty (20) days after the commencement of the delay, otherwise said request shall be deemed to be waived. Such request shall state grounds for the delay and shall provide an estimate of the probable effect of such delay on the progress of the Work.

#### **16 CONTRACTOR'S CLAIMS AND REMEDIES**

In no event shall the Contractor make any claim against the Commission for or be entitled to additional costs or compensation resulting from any delays in the progress or completion of the Work or any portion thereof, whether caused by the acts or omissions of the Commission, including, but not limited to, damages related to overheads, loss of productivity, acceleration due to delay and inefficiency. The Contractor's sole remedy in such event shall be an extension of time for completion of the Work, provided the Contractor otherwise meets the requirements and conditions set forth in this Contract.

**17 ENTIRE AGREEMENT**

This Contract represents the final agreement in respect of the Work and shall supersede all prior agreements and representations between the Parties in this respect. Annexes A to C and the relevant FRD and/or WO shall constitute integral parts of this Contract and shall be of full force and effect.

**18 DISCREPANCIES**

If there are discrepancies or conflicts between any of the documents that are part of this Contract, the document to prevail shall be given precedence in the following order:

- (i) This document;
- (ii) The Commission's General Conditions of Contract (Annex A);
- (iii) The Commission's Terms of Reference (Annex B);
- (iv) The Contractor's Proposal (Annex C);
- (v) The relevant FRD/WO.

**19 SEVERABILITY**

If any term and/or provision of this Contract is or becomes invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions of this Contract shall not in any way be affected or impaired thereby.

**20 NO WAIVER**

Failure by a Party to enforce a right shall not be deemed to be a waiver of that right unless otherwise expressly provided in this Contract.

**21 CONTRACT AMENDMENT**

No modification of, or change in, this Contract, or waiver of any of its provisions, or additional contractual relationship with the Contractor shall be valid unless approved in the form of a written amendment to this Contract, signed by duly authorized Representatives of the Parties.

**22 TRANSMISSION OF NOTICES AND OTHER DOCUMENTS**

Notices, invoices, reports and other documentation under the Contract shall be delivered or sent to the relevant Party as follows (or to such person/title, address or email address as the Party may substitute by notice after the date of the Contract):

- (a) The Commission:

For Contractual Issues:

*Chief, Procurement Services Section  
Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization  
(CTBTO)  
Vienna International Centre  
Wagramerstrasse 5, P.O. Box 1200  
1400 Vienna, Austria  
Tel: + (43 1) 26030 6350  
E-mail: [procurement@ctbto.org](mailto:procurement@ctbto.org)*

For submission of invoices:

*Accounts Payable  
CTBTO Financial Services Section  
Vienna International Centre  
Wagramerstrasse 5, P.O. Box 1200  
1400 Vienna, Austria  
Tel: + (43 1) 26030 6292  
E-Mail: [Payable\\_Invoices@ctbto.org](mailto:Payable_Invoices@ctbto.org)*

For invoices and payment related enquiries:

[Payments@ctbto.org](mailto:Payments@ctbto.org)

- (b) The Contractor:

For Contractual Issues and Invoices and Related Enquiries:

*Name:  
Title:  
Address:  
Tel:  
Email:*

## 23 EFFECTIVENESS

- (a) Except as provided below, any communication in connection with the Contract will be deemed to be given as follows:
- (i) if delivered in person, at the time of delivery;
  - (ii) if by registered mail or courier, when received;
  - (iv) if by electronic communication, when retrievable by the Commission in document form.

- (b) A communication given under Clause 23(a) above that is received or becomes retrievable on a non-working day or after business hours at the seat of the Commission will only be deemed to be given on the next working day of the Commission.

## **24 SOFTWARE LICENCE**

The Commission hereby grants the Contractor a non-exclusive, non-transferable, irrevocable license to use the Software for the duration of the Contract and for the purpose of doing the Work under the Contract. The use of the source code is only for the duration of the Contract and for the Work required under the Contract. All title, ownership rights and intellectual property rights in and to the Software shall remain with the Commission. The Contractor acquires no title, right or interest in the Software, other than the license(s) specifically granted herein by the Commission.

IN WITNESS hereof, the duly authorized Representatives of the Parties have executed this Contract:

For and on behalf of the **PREPARATORY COMMISSION FOR THE COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION:**

---

[Name and position]

Date: \_\_\_\_\_

Place: Vienna, Austria.

For and on behalf of **[THE CONTRACTOR]:**

---

[Name, Position]

Date: \_\_\_\_\_

Place: \_\_\_\_\_

**LIST OF ANNEXES**

**ANNEX A:** THE COMMISSION'S GENERAL CONDITIONS OF CONTRACT

**ANNEX B:** THE COMMISSION'S TERMS OF REFERENCE

**ANNEX C:** THE CONTRACTOR'S PROPOSAL

**ANNEX B**  
**TERMS OF REFERENCE**

**FOR THE PROVISION OF**  
**SOFTWARE ENGINEERING SERVICES FOR**  
**DATABASE AND WEB APPLICATIONS – MODERNIZATION**  
**OF THE DATABASE OF THE TECHNICAL SECRETARIAT**  
**(DOTS)**  
**ON A CALL-OFF BASIS**

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## I. Introduction

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (hereinafter referred to as the “Commission”) operates a global verification regime to monitor compliance with the Comprehensive Nuclear-Test-Ban Treaty. It provides timely data, assessments and other products and services to Signatory States of the Treaty. The International Monitoring System (IMS), consisting of 337 monitoring facilities worldwide, is managed from the Commission’s International Data Centre (IDC) in Vienna, Austria. More information can be found under [www.ctbto.org](http://www.ctbto.org).

The Commission develops and operates software to acquire, transmit, receive, monitor and process data from seismic, hydro-acoustic, infrasound and radionuclide stations from around the world. The data are transmitted to the IDC.

For this task, a reliable database of station configurations, equipment as well as station certifications is important. This data is stored in the Database of the Technical Secretariat (DOTS). This is a web-based application together with data stored in an Oracle Database and documents in a central CTBTO document management system (DMS).

## II. Background

From station establishment and sustainment activities within the IMS to configuration control, logistics support, and documentation management across the technical divisions of the Commission, accurate and centralized configuration and asset information are essential for the effective functioning of the Provisional Technical Secretariat (PTS). Technical and support staff require reliable access to station configuration data, equipment inventories, documentation, reporting outputs, and related logistical information to ensure traceability, operational continuity, and compliance with established procedures.

DOTS is the primary electronic configuration management and logistics support information system for the IMS. DOTS serves as the central repository and management tool for configuration data, asset records, documentation, and reporting functions related to IMS stations and associated infrastructure. It supports the lifecycle management of stations, including installation, upgrades, maintenance activities, and configuration tracking.

Currently, DOTS is implemented as a web-based application developed in Java. The system utilizes Java SDK 8 and related components, including Hibernate (ORM implementation), with JDBC connectivity to an Oracle relational database. The application leverages C3P0 for connection pooling and Apache Commons libraries for data modeling. The front-end technologies include HTML, JavaScript, JSON, XML, and Google Web Toolkit (GWT/SmartGWT).

In addition to configuration and asset management functionality, DOTS integrates with the Document Management System, to provide Station-Specific Documentation. The system generates reports using Crystal Reports / BusinessObjects XI. The architecture is tightly coupled to an Oracle database backend and relies on established enterprise Java patterns for transaction handling, persistence, and data exchange.

Over time, DOTS has become a critical operational system supporting multiple divisions within the PTS by ensuring data consistency, traceability of configuration changes, and centralized access to IMS-related technical and logistical information.

### III. Scope of Work

With the objectives of establishing, maintaining, and supporting a robust network of stations – while ensuring up-to-date configurations, valid certifications, and reliable equipment and logistics support – the Commission seeks to establish a contract for the provision of software engineering services on a call-off basis (hereinafter referred to as the “Contract” or the “Call-off Contract”) for DOTS modernization to further develop and enhance DOTS with the aim of maintaining this application as the authoritative source for all station-related operational data. The requested services are intended to expand DOTS’ capabilities within the organization, ensuring it remains the central, trusted platform for managing and accessing station configurations, certifications, equipment status, and logistics information.

The initial Call-off Contract period (“Call-off Period”) shall be for two (2) years with the possibility of two (2) optional extensions of two (2) years each (two additional Call-off Periods) for a maximum Contract duration of six (6) years. These Terms of Reference (hereinafter referred to as “ToR”) form the technical framework for the provision of the required software engineering services for web and database applications for DOTS modernization (hereinafter referred to as “Services” or “Work”).

The maximum volume of work under the Call-off Periods is shown in the table below. This volume serves only as an indication, and the Commission reserves the right, at its sole discretion, to call-off less or no person-days at all. The maximum number of days includes both off-site and on-site work. In the event the maximum total days for a Call-off Period is exhausted prior to the end date of the Call-off Period, the optional extension may be exercised by the Commission. Similarly, any unused balance of the person-days allocated to a Call-off Period may be carried over to the next Call-off Period subject to mutual agreement between the Parties at the time of the extension, should the Commission exercise the optional extension(s).

	Years	Max. Total days
<b>Initial Call-Off Period</b>	2	1200
<b>1st Extension</b>	2	1200
<b>2nd Extension</b>	2	1200
<b>2nd Extension</b>	2	1200
<b>Contract Total</b>		3,600

The following software engineering services are sought (see Section IV of this ToR for the detailed requirements):

- IV.1 Software Development and Enhancement;
- IV.2 Software Support and Maintenance;
- IV.3 Software Testing Support;
- IV.4 User Experience and Interaction Design Expertise;
- IV.5 CI/CD/DevOps Support; and
- IV.6 Geospatial Visualization and Web Mapping Support.

The Contractor shall be required to provide the Services to perform:

- Back-end development of DOTS;
- Front-end development of DOTS; and
- Development, maintenance and support of DOTS and related applications.

The Organization of the Work is detailed in Section VI of this ToR.

### III.1 Back-End Development of DOTS

The modernized DOTS ecosystem will transition from a monolithic GWT architecture to a decoupled multi-tier distributed architecture. The frontend will be a modern React application communicating with a RESTful API backend. This backend will serve as the primary layer for security checks and business logic, replacing direct SQL-in-Java code.

Integration with other PTS systems will be facilitated through an API Gateway, moving away from legacy database views. The API Gateway will take care of authentication of applications as well as user authentication, providing end-to-end security for DOTS. Document management will be externalized to MS365/SharePoint, integrated via standard APIs to replace the decommissioned Alfresco repository.

Content changes will be published on Kafka where they can be consumed by interested parties. Kafka and API data structures are aligned for simplified consumption. Consumption of data through both APIs and Kafka requires prior registration, as for future evolution of the interfaces a communication channel to existing users is required. Elasticsearch is provided with DOTS data as well, through Kafka.

DOTS will be deployed through Kubernetes, using the PTS Kubernetes infrastructure.

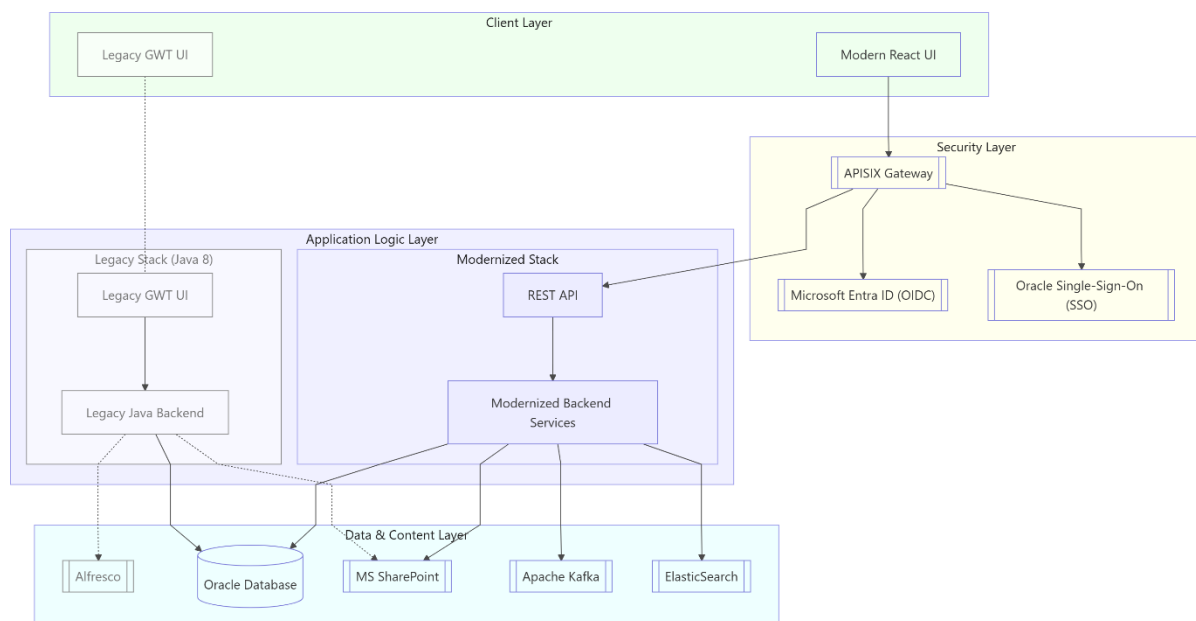


Figure 1: DOTS Modernization Architecture

### III.2 Front-End Development of DOTS

The UI of DOTS will be re-implemented, using React as the View layer, based on REST APIs provided through the backend.

A Google-like search will be implemented, utilizing Elasticsearch for delivering the results.

A map view will be implemented, using layers provided by the Commission.

During the development, tested, and accepted versions of the new UI will be continuously made available for production use by PTS staff through a separate URL. This allows internal stakeholders to use new features before the final decommission of the legacy DOTS system.

The development will take place in an agile framework, with involvement of various users of DOTS and continuously refining their requirements.

### **III.3 Development, Maintenance and Support of DOTS and Related Applications**

Following an implementation of a modernized DOTS system, ongoing development, maintenance, and support will be required. This includes enhancements, implementation of new features, bug fixes as well as architectural adjustments.

Similarly, development, maintenance, and support activities will not only be required for DOTS, but also for related applications which are using data from DOTS either through views (transitional) or in the future through REST APIs, Kafka and Elasticsearch.

## **IV. Provision of Software Engineering Services**

This section breaks down the description of the Services into separate types of work.

### **IV.1 Software Development and Enhancement**

#### **IV.1.1 Work Specifications**

In general, the Work involves the review and execution of the software design and implementation phases, and the delivery of code and documentation, which can be used to construct and deploy systems.

In particular, the Work may involve, but is not limited to, the following tasks:

- A review of the requirements specifications, any existing systems and databases, and additional information requirements, and comments expressed by the Commission's technical point of contact. The outcome of this step shall be a revised requirements document forming the basis for planning the Work.
- Analysis of the requirement and design of the deliverables.
- Code quality with well-defined testing plan.
- Scheduling of the deliverables and estimating the effort to execute the Work.
- Delivery and acceptance support of each deliverable.
- Delivery of the documentation agreed for each project which will provide the Commission staff with a sound understanding of the rationale of the developed component, so that these staff can maintain and expand the system accordingly.

The detailed scope of the Services and specific requirements for a software project will be defined at the time when the Commission requests the Contractor to submit a Project/Work Plan (see Section VI of this ToR).

#### **IV.1.2 Deliverables**

The deliverables shall follow standards specified by the Commission, which are based on industry best practices. The deliverables may include, but are not limited to:

- A statement of the requirements / objectives of the software component.
- Source code as per agreed coding standards.
- Test plans, test cases, test scripts and test results (of unit test, integration and system test and when applicable regression test).
- Results of review and inspection (architectural, database design, code, documentation when applicable).
- Technical documentation including design documents for the software components as per agreed standards.
- Workshops or (tele)conferences for knowledge transfer to the Commission staff.
- Recommendations / guidelines to help the Commission staff adhere to the implementation / design concepts.
- Configuration management plan.
- Deployment and Release policies.
- Changelog: a description of what changes were made relative to the previous release, along with a list of files that were modified by each change. Each release shall also include a list of outstanding items to be done, including any known defects.

At the time when Work is called-off (see Section VI of this ToR), the Commission may select deliverables from the above list, or request other deliverables deemed relevant to the project.

### **IV.2 Software Support and Maintenance**

#### **IV.2.1 Work Specifications**

In general, the Work involves the review and execution of the software transition and operation phases through the provision of support and maintenance services, mainly for custom software systems.

In particular, the Work may involve, but is not limited to, the following tasks:

- Perform remote troubleshooting.
- Provide proactive and/or reactive support services.
- Analysis of the current functionality of a software system.
- Provide and/or implement software patches and updates.
- Migrations for major releases of software.
- Implement deployment and release policies.
- Provide installation and usability assistance.
- Provide training or other services associated with operating the software.
- Track and perform software license code updates and upgrades (when applicable).

The detailed scope of the Services and specific requirements for a software project will be defined at the time when the Commission requests the Contractor to submit a Project/Work Plan (see Section VI of this ToR).

#### **IV.2.2 Deliverables**

The deliverables shall follow standards specified by the Commission, which are based on industry best practices. The deliverables may include, but are not limited to:

- Training materials.
- Source code as per agreed coding standards.
- Test plans, test cases, test scripts and test results (of unit test, integration and system test and when applicable regression test).
- Updated technical documentation for the software components, as per agreed standards.
- Workshops or (tele)conferences for knowledge transfer.
- Changelog: a description of what changes were made relative to the previous release, along with a list of files that were modified by each change. Each release shall also include a list of outstanding items to be done, including any known defects.
- Monitoring Reports: regular reports on the performance and health of the software, including metrics such as uptime, response times, and system usage.

At the time when Work is called-off (see Section VI of this ToR), the Commission may select deliverables from the above list, or request other deliverables deemed relevant to the project.

### **IV.3 Software Testing Support**

#### **IV.3.1 Work Specifications**

In general, software testing support may be requested to assure that the delivered product meets the requirements and its quality goals.

In particular, the Work may involve, but is not limited to, the following tasks:

- Complete test preparation and execution.
- Audit code coverage.
- Work from software specifications to identify test data requirements and generate required test data.
- Design, support the implementation and automate tests (unit tests, integration tests and system tests, and when applicable regression tests).
- Correct errors by making appropriate changes and rechecking the program to ensure that the desired results are produced.
- Report software defects and priorities.
- Consult with managerial, engineering and technical personnel of the Commission to consolidate test efforts, identify bottlenecks, risk analysis and mitigation, and quality improvement as well as to coordinate test efforts and adapt to changing requirements and fast paced release schedules.
- Consult with development team to troubleshoot and resolve project issues both technical and non-technical in nature.

The detailed scope of the Services and specific requirements for a software project will be defined at the time when the Commission requests the Contractor to submit a Project/Work Plan (see Section VI of this ToR).

### **IV.3.2 Deliverables**

The deliverables shall follow standards specified by the Commission, which are based on industry best practices. The deliverables may include, but are not limited to:

- Test plans / cases / scripts.
- Test results (of unit test, integration and system test and when applicable regression test).
- Documented test standards.

At the time when Work is called-off (see Section VI of this ToR), the Commission may select deliverables from the above list, or request other deliverables deemed relevant to the project.

## **IV.4 User Experience and Interaction Design Expertise**

### **IV.4.1 Work Specifications**

In general, User Experience and Interaction Design expertise may be requested to support the Commission and/or the Software Team in complex software engineering tasks, such as the planning, design or re-design of complex systems, or other tasks.

In particular, the Work may involve, but is not limited to, the following tasks:

- Ensure the logical flow of the software product.
- Conduct in-person user tests to observe users' behaviour.
- Refine and iterate to optimize user experience.
- Support business analysis and software requirements, architecture and design tasks.
- Develop Software Standards.
- Mentor other Software Team members in User Experience methodologies.
- Audit existing software designs and implementations in terms of user experience in preparation for upgrades / enhancements.

The detailed scope of the Services and specific requirements for a software project will be defined at the time when the Commission requests the Contractor to submit a Project/Work Plan (see Section VI of this ToR).

### **IV.4.2 Deliverables**

The deliverables shall follow standards specified by the Commission, which are based on industry best practices. The deliverables may include, but are not limited to:

- Wireframes, prototypes, and interaction design specifications (low- and high-fidelity as appropriate).
- User journey maps and workflow diagrams illustrating logical software flows.
- Recommendations and guidelines to support the Software Team in applying User Experience methodologies and principles.

At the time when Work is called-off (see Section VI of this ToR), the Commission may select deliverables from the above list, or request other deliverables deemed relevant to the project.

## **IV.5 CI/CD/DevOps Support**

### **IV.5.1 Work Specifications**

In general, the Work involves the audit, design and implementation of software development lifecycles to minimize the time to operations while ensuring high quality.

In particular, the Work may involve, but is not limited to, the following tasks:

- Mentor other Software Team members in CI/CD/DevOps methodologies.
- Develop release and deployment policies.
- Support the implementation of release and deployment policies.
- Support scripting of automated deployment (and rollback) of releases.
- Design, implement and maintain infrastructure for running and evaluating the Software.
- Adjust operating system settings, Docker runtime, and container orchestration parametrisation.
- Support developers in testing and running the Software on development machines.

The detailed scope of the Service and specific requirements for a software project will be defined at the time when the Commission requests the Contractor to submit a Project/Work Plan (see Section VI of this ToR).

### **IV.5.2 Deliverables**

The deliverables shall follow standards specified by the Commission, which are based on industry best practices. The deliverables may include, but are not limited to:

- CI/CD pipeline design documentation, describing the architecture, toolchain, and workflow for build, test, and deployment automation.
- Implemented and documented CI/CD pipeline configurations.
- Release and deployment policy documentation, including rollback procedures and environment promotion strategies.
- Infrastructure-as-Code (IaC) scripts and configuration files for container orchestration and environment setup (e.g., Kubernetes manifests, Helm charts, Dockerfiles).
- Guidelines and documentation to support developers in building, testing, and running the Software on development machines.

At the time when Work is called-off (see Section VI of this ToR), the Commission may select deliverables from the above list, or request other deliverables deemed relevant to the project.

## **IV.6 Geospatial Visualization and Web Mapping Support**

### **IV.6.1 Work Specifications**

In general, geospatial visualization and Web mapping support may be requested to support the Commission and/or the Software team in complex software engineering tasks that require display of information on a map in an effective way from the raw data.

In particular, the Work may involve the following tasks:

- Assist in searching and collecting information from the raw data.
- Prototype GUI elements to help visualize extracted insights from large datasets on geospatial maps.

The detailed scope of the Service and specific requirements for a software project will be defined at the time when the Commission requests the Contractor to submit a Project/Work Plan (see Section VI of this ToR).

#### **IV.6.2 Deliverables**

The deliverables shall follow standards specified by the Commission, which are based on industry best practices. The deliverables may include:

- UI/UX prototypes and mockups for map-based visualizations, illustrating proposed approaches for displaying geospatial information.
- Implemented web mapping components (e.g., using OpenLayers), integrated with the DOTS frontend and compatible with map layers provided by the Commission.
- Technical documentation describing the design, configuration, and usage of geospatial visualization components.
- Recommendations and guidelines for best practices in geospatial data visualization within the DOTS ecosystem.

At the time when Work is called-off (see Section VI of this ToR), the Commission may select deliverables from the above list, or request other deliverables deemed relevant to the project.

## **V. Requirements for the Contractor and the Team Roster**

### **V.1 Contractor's requirements**

The Contractor shall meet the following mandatory requirements:

1. A minimum of four (4) staff shall be included in the Team Roster that shall meet the requirements as described in Section V.2.4 (individually) and Section V.2.5 (as a team) of this ToR. This shall apply throughout the Contract period.
2. Demonstrated experience implementing at least three (3) projects of similar scope and complexity.
3. Demonstrated experience, in the last five (5) years, in using a recognized formal project management methodology (how the work is to be managed and controlled, risk management, reporting, planning and assurance of quality), such as PRINCE2.
4. Demonstrated experience, in the last five (5) years, in using a formal software engineering methodology and providing services using an Agile framework, such as Scrum.
5. Staff turnover has been and is kept below 20% per year over the past three (3) years.
6. All reports, documentation, and communication (written and oral) to be submitted to the Commission shall be in English and in an electronic format.
7. Provide a warranty period of at least two (2) years after the completion of the user acceptance testing (see Section VI of this ToR). Terms and conditions of post-warranty support and bug fixes shall be clearly specified and be included in the Contract.

8. Working hours of relevant staff (e.g. project manager and lead developers) assigned to a Software Team, to overlap at least two (2) hours with the Commission's working hours (9am to 5pm CET), as deemed necessary by the Commission.
9. Has a demonstrated Risk Management methodology in place and which will be applied for the execution of the outlined software development activities in these Terms of Reference as per Section VII.4 of this ToR.
10. Has established an escalation and remediation procedure in case of delayed service delivery in relation to the timelines defined in the relevant FRD and/or WO.
11. Has a demonstrated secure software development methodology in place, including documented secure coding standards, security testing practices, and procedures for the remediation of identified vulnerabilities, which will be applied throughout the software development lifecycle for all activities outlined in these Terms of Reference.

The following requirements, although not mandatory, would be an asset:

12. Use of standard approach for quality assurance, operational efficiency and customer satisfaction, a current CMMI level 3 or higher, or ISO 9001 certification or equivalent.
13. Use of standard approach to manage IT services, preferably ITIL. ISO 20000 certification or equivalent.

## **V.2 Team Roster**

### **V.2.1 Constitution of the Team Roster**

The Contractor shall provide details of staff that are expected to be involved in the performance of Work on-site and/or off-site for the Commission. At a minimum, the following information shall be provided for each of these staff:

- Name
- Role
- Employed since
- Type(s) of Service(s) from Section IV of this ToR which the staff will perform.
- Curriculum Vitae

The Contractor shall demonstrate:

- The capacity of the suggested Team Roster to provide all Services described in Section IV of this ToR.
- The compliance of the suggested Team Roster with requirements set out in Sections V.2.4 and V.2.5 of this ToR.
- The capability and capacity of the suggested Team Roster to provide Software Services in the environment described in Section VII of this ToR.

### **V.2.2 Maintenance of the Team Roster, conditions of revision**

The Contractor shall maintain an up-to-date version of the Team Roster for the duration of the Contract. The Contractor shall inform the Commission when members of the Team Roster are to be removed or added to the Team Roster, and if the details of a member are modified.

If the Commission estimates that the Team Roster lacks capacity or capability to perform a specific work within the specified timeframe or quality, the Contractor shall provide, within three (3) working

days after a request is made by the Commission, the details of skilled and experienced member to be added to the Team Roster for consideration by the Commission.

The Commission shall have the right, at its own discretion, to confirm whether the proposed Team Roster revision is acceptable.

### **V.2.3 Software Team**

Prior to the issuance of an FRD (Formal Request for Delivery), as described in the Section VI of this ToR, the Contractor will be requested to propose to the Commission a list of the Software Team members that will be working under this FRD and provide a project plan for the execution of the relevant task(s) under the relevant FRD. This Software Team shall be selected from the Team Roster.

1. The Contractor shall ensure that each member of the Software Team:
  - is dedicated to the project during the development period (unless otherwise agreed in writing by the Commission); and
  - is not re-assigned from the project without the prior written consent of the Commission.
2. The Contractor shall satisfy the following mandatory requirements:
  - Establish and share with the Commission, a pre-screening process to identify suitable staff.
  - Provide documented evidence that the proposed Software Team is appropriately skilled and experienced to carry out the work plan.
  - Upon written request by the Commission, replace Software Team members deemed to be performing unsatisfactorily or provide specific training to address a gap in knowledge identified after a Software Team member has started his or her assignment, at no cost for the Commission.
  - Establish an induction program, at no cost for the Commission, to help new members of the Software Team become operational within a predefined period after the acceptance of the start of their assignment for the Commission. The duration of the period will normally be from one (1) to three (3) months depending on the type of service.
  - Ensure that the knowledge is retained in the team roster in case of staff turnover, at no cost for the Commission.
  - Inform the Commission of a planned change of a team member with a minimum of one (1) month notice to allow for enough time for the pre-screening process.
  - Confirm that the Software Team shall continuously keep abreast of the technological advancements, thereby supporting the Commission by delivering high-quality and innovative software solutions.
3. The Contractor shall be proactive in identifying and proposing additional resources and/or expertise to the Software Team based on the current needs for the Software Project.
4. The Commission shall have the right, at its own discretion, to confirm whether the proposed Software Team for a specific FRD is acceptable.
5. The Commission reserves the right to seek an immediate replacement for any Software Team member, as determined by the Commission. In such cases, the Commission will request a replacement of the Contractor staff, with equal or more adequate qualifications and experience, to complete the tasks. If no suitable replacement can be agreed upon, the Commission reserves the right to terminate the assignment of the Software Team member with immediate effect. Continuity of staff is an important consideration. The Contractor shall therefore take necessary measures to ensure a seamless transition when taking over the Services and keep changes to staff being assigned to the Commission to a minimum throughout the duration of the Contract.

#### **V.2.4 Requirements for each member of the Team Roster**

Each of the Contractor's staff on the Team Roster shall have the following minimum qualifications:

1. At least two (2) years of recent experience using Agile framework such as Scrum.
2. At least two (2) years of recent experience working with a state-of-the-art ticket management system such as Jira.
3. Fluent communication in English.

#### **V.2.5 Skills and experience amongst the members of the Team Roster**

The following combined skills and experience shall be available in the Team Roster, and shall be maintained for the duration of the Contract; at the minimum, three (3) of these requirements shall be met by each individual in the Team Roster, but all of these skills and experience shall be available in the Team Roster aggregate:

1. A minimum of two (2) years of demonstrated experience in software engineering (eliciting use cases and requirements, design, development, support, maintenance and enhancement, documentation) for operational software systems.
2. A minimum of two (2) years of demonstrated experience providing software maintenance and support services for complex and custom software systems.
3. A minimum of two (2) years over the past five (5) years, in the development of RESTful APIs using Java (e.g. Spring Framework).
4. A minimum of two (2) years over the past five (5) years, in the development of RESTful APIs using TypeScript.
5. A minimum of two (2) years over the past five (5) years, in the development of web applications, using React.
6. A minimum of two (2) years of development experience with SQL databases, including experience using Oracle.
7. A minimum of one (1) year of experience with message brokers, preferably using Kafka and/or RabbitMQ.
8. A minimum of one (1) year of experience integrating authentication and authorization mechanisms using standards such as OAuth 2.0, OpenID Connect, or SAML.
9. A minimum of two (2) years of experience, over the past five (5) years, in software security engineering, including secure software development practices and API security design. A recognized security certification, such as CISSP, CSSLP, or equivalent, would be an asset.
10. A minimum of three (3) years of experience as a solutions architect of an information system. An iSAQB (International Software Architecture Qualification Board) certification or equivalent would be an asset.
11. A minimum of one (1) year of experience using a disciplined approach for planning, designing, executing and reporting on software testing, including scripting techniques for automated testing. An ISTQB (International Software Testing Qualifications Board) certification or equivalent would be an asset.
12. A minimum of one (1) year of experience over the past five (5) years as a User Experience and Interaction designer on projects with similar scope, that demonstrate the solid understanding of Software development methodologies.
13. A minimum of two (2) years of demonstrated experience as a business analyst, requirements engineer or equivalent, having in-depth knowledge of requirements engineering, definition of requirements engineering processes and practices. An IREB (International Requirements Engineering Board) certification or equivalent, would be an asset.

14. A minimum of one (1) year of demonstrated experience with GitLab CI and/or Jenkins. Experience with a repository manager like Nexus, would be an asset.
15. A minimum of one (1) year of demonstrated experience designing and implementing a disciplined approach for continuous integration using Docker/OCI containers and Kubernetes.
16. A minimum of one (1) year of demonstrated experience over the past five (5) years in developing geospatial/digital mapping applications, having experience with OpenLayers, would be an asset.
17. A minimum of six (6) months of demonstrated experience using AI tools, including Large Language Models (LLMs), for software engineering tasks such as code generation, documentation, or testing.

## **VI. Organization of Work**

The Commission may call-off for Services as described in Section IV of this ToR. Calling-off the Work will be done based on Formal Request for Delivery (FRD).

The Commission may issue a FRD to the Contractor to define the scope of a Software Project, and a capped level of effort for its completion. After the FRD has been issued, the Work may be called-off by the Commission in the form of Sprint Work Orders (Sprint WOs). Each Sprint WO shall include the exact scope of Work and the required deliverables to be performed and delivered by the Contractor as well as the acceptance criteria.

The FRD will define the overall Software Project, particularly the Work scope, the Software Team, and a capped resources for the Project. The capped resources defined under the FRD shall be an upper limit only, and the Commission reserves the right, at its sole discretion, to call-off less Services or no Services at all under the Sprint WOs.

Details on FRD and Sprint WOs issuance is provided in the following sub-sections.

### **VI.1 FRD issuance**

Prior the issuance of an FRD by the Commission to the Contractor, and upon receipt of a written request from the Commission containing elaborations and definitions as to the nature of the Software Project, the Contractor shall within one (1) week of receiving the written request, provide the following minimum information in the form of a “Project Plan” for each Service identified in the written request:

- A list of staff (Software Team) who will be working on the Software Project, and the role of each of these staff members. The Software Team shall be a subset of the Team Roster, as described in Section V.2 of this ToR.
- Details of the suggested project management approach.
- Approach to reporting and monitoring of the progress of the Work.
- Work plan and key schedule for the Project initiation.
- Ballpark estimate of the total level of effort to be allocated of the Software Project, broken into Services, and based on the unit rates defined in the Contract.
- Commencement date and completion date of the service.
- Place of work (on-site/off-site). If applicable, the proposed number of travels; such travel shall be organized by the Contractor and reimbursed by the Commission based on simple economy return ticket for the most direct route upon presentation of supporting documents in line with the Contract provisions.

After review of the Project Plan for each of the Services identified in the written request, and only after acceptance by the Commission, the FRD will be issued by the Commission to the Contractor. The Commission has the right to issue or not the FRD.

Each FRD shall be based on one or more of the Services described in Section IV of this ToR and on the approved Project Plan for each of the Services to be completed.

The Commission shall not be held liable for the performance of any particular Service(s) which have been performed before the formal issuance of an FRD and Sprint WO (see Section VI.2(d) of this ToR) to the Contractor.

## VI.2 Initiating Work

The Commission shall have the right, but not the obligation, to call-off Services in the form of Sprint WOs under the issued FRD. These Sprint WOs shall include the exact scope of Work and the required deliverables to be performed and delivered by the Contractor.

- (a) Before the issuance of a Sprint WO by the Commission to the Contractor and upon receipt of a request, containing elaborations and definitions as to the nature of the particular Work(s), the Contractor shall, within one (1) week of receiving the request, provide the following minimum information in the form of a “Work Plan” for the Work identified in the request:
- Work plan and key schedule to accomplish the Work.
  - Assumptions, constraints, and key risks that could affect the completion of the Work and proposed methods to manage the risks.
  - Number of person-days to be allocated to the Work.
  - Place of work (on-site / off-site).
  - Commencement date and completion date of the Work.
  - Approach to reporting and monitoring of the progress of the Work.
  - If applicable, the proposed number of travels.

*Note: the request may be in written stand-alone form, or made through the sprint planning activities by moving tasks to the sprint backlog (in the case of an Agile Software Development Project)*

- (b) After review of the Work Plan for the Work identified in the written request, and only after acceptance by the Commission, the Sprint WO will be issued by the Commission to the Contractor.
- (c) Each Sprint WO shall be based on one or more of the tasks described in Section IV of this ToR and on the approved Work Plan for each of the Work to be completed. The Commission will forward Sprint WOs to the Contractor with adequate advanced notice and containing all necessary details, expected deliverables, and minimum requirements for satisfactory performance.
- (d) The Contractor shall perform Work only after receipt of the Sprint WO.
- (e) During the performance of the Work under a Sprint WO, the Contractor shall respond within two (2) working days to any comments from the Commission on work-in-progress with a plan to resolve issues.
- (f) Upon entry into force of the Contract, the Contractor shall draft a Sprint WO Work Plan template for review and acceptance by the Commission.

## VI.3 Completion and Acceptance

- (a) At the end of a particular Work under a Sprint WO, the Contractor shall submit to the Commission the deliverables within the period of performance stated in the respective Sprint WO. The deliverables may include, but are not limited to:
- Updated Documents (e.g. Software Design Document, Software User Guide and Developers Guide.)
  - Updated source code for software and common libraries, including documentation.

- The functionality of the delivered product.
- (b) The deliverables will be evaluated by the Commission within twenty (20) working days after delivery of the product by the Contractor.
- (c) If so requested by the Commission in a Sprint WO, upon completion of the Work(s) under the Sprint WO, the Contractor shall provide an oral presentation (including slides/handouts as required) to the Commission at its Headquarters in Vienna.
- (d) At the completion of the Work performed under an FRD resulting in an integrated and deployable version of the Software or functional subsystem (hereinafter referred to as a “Release Candidate”), the Contractor shall submit such Release Candidate for User Acceptance Testing (UAT) by the Commission.
- (e) The Commission shall perform UAT within thirty (30) working days to verify that the Release Candidate conforms to the agreed functional and non-functional requirements defined in the applicable FRD and associated Sprint Work Orders.

## **VI.4 Reporting**

During the execution of the Sprint WO, the progress status must be communicated to the Commission as defined in the Sprint WO.

At the end of the performance period stated in the Sprint WO, the Contractor shall submit a Report to the Commission, electronically via email and within five (5) working days following the completion of each Sprint WO, describing all the performed activities, including but not limited to:

- Status of the work items.
- Remaining balance of resources in the FRD

Within five (5) working days following the completion of the last Sprint WO of the FRD, the Contractor shall submit an End of FRD Report to the Commission, electronically via email, describing the updates of the team roster and the achievements of the Sprint WOs executed under the FRD.

## VII. Standards and Working Environment

### VII.1 Software and Database Environment

The primary languages intended for software development are Java and TypeScript, with Oracle databases.

Elasticsearch shall not be used as primary data storage but to enable flexible full-text and vector-based search.

Git is used as Software Versioning System, with a self-hosted GitLab instance. Maven and Gradle are the build automation tools that are in use.

The DOTS software is designed to run on Kubernetes, either on-prem (EKS Anywhere) or on cloud provider. Container images are preferably built using Red Hat Universal Base Images or Google Distrosless Container Images.

In the case of Java backend applications, accessing the database shall utilize Hibernate or Apache MyBatis. Java Spring Framework components shall be used where appropriate.

### VII.2 Best practices and Standards

Several best practices and standards have been established within the Commission including ITIL for IT service management, PRINCE2 for project management, and Scrum-like Agile methodology for software development.

All software developed under this Contract shall follow the IDC Coding Standards (which includes recommended coding style, the required implementation of unit tests, and use of open standards and open-source libraries where possible) and shall compile and run under the Linux operating system family (RHEL/CentOS 7.x, RHEL/Rocky 8.x+, or compatible). These Standards will be made available to the Contractor upon request after signature of the Contract. The IDC guidelines for requirements engineering shall form the basis for eliciting and documenting requirements.

The Contractor shall deliver software through incremental releases according to the Agile software development methodology (specifically Scrum). In particular, the Contractor shall follow the “Release Early, Release Often” (RERO) software development philosophy which emphasizes the importance of early and frequent releases in creating a tight feedback loop between developers, testers and users. Each new delivery shall include a description of what changes were made relative to the previous release, along with a list of files that were modified by each change.

To ensure cost-effectiveness and implementation efficiency, the Contractor is expected and authorized to utilize AI-based coding assistants and development tools (e.g., for code generation, refactoring, or documentation). Such use shall be subject to the following conditions:

- **Human Verification:** All AI-generated code shall be reviewed, assessed, and validated by the Contractor’s senior engineering staff to ensure adherence to the IDC Coding Standards and applicable security requirements.
- **Security & Data Privacy:** The Contractor shall ensure that no sensitive Commission data is uploaded to publicly accessible AI models in a manner that compromises data confidentiality or violates applicable data protection obligations.

- **Code Ownership:** The use of AI tools shall not adversely affect or encumber the intellectual property rights associated with the delivered software. All source code developed under this Contract shall remain the sole property of the Commission.

The Contractor shall inform the Commission of the AI tools intended to be used, including their purpose and manner of use.

The software that the Contractor shall be working on is being maintained in the Git version control system and all software releases shall be delivered via this version control system. Software developments are done in a GitLab based continuous integration and testing environment.

Software developments and documentation shall adhere to the IDC Documentation Standards. These Standards will be made available to the Contractor upon request after signature of the Contract. For software development, Open-Source technologies shall be preferred. The source code for the developed software shall be delivered to the Commission upon completion of each task and shall become the property of the Commission as of the delivery date. The source code of the software developed under the Contract shall follow the Commission's software standards and guidelines.

### **VII.3 Work Environment**

For on-site Services provided at the Commission's headquarters in Vienna, Austria, the Commission will provide at its premises a suitable work environment (workspace, room for meetings, presentations and trainings, standard stationary, Internet connection) for the Contractor's personnel to perform the Services under the Contract, as required. The Contractor shall arrange for laptop computers and mobile telephones for the Contractor's personnel required to execute the on-site work. The Commission will also make reasonable efforts to cooperate with the Contractor in connection with its performance under the Contract, including, but not limited to, reasonable and timely access to Commission's personnel, documentation, and databases and other necessary identified sources of information.

The working language at the Commission's headquarters in Vienna, Austria, is English, and the normal weekly working hours is forty (40), Monday to Friday. Exceptionally, there may be a need to work overtime or on Saturdays and Sundays. The working period in a given day will be defined on the basis of actual needs even though the usual working hours from Mondays to Fridays are between 08:00am and 06:00pm.

For off-site work, the Contractor shall provide its own infrastructure, hardware and software environment necessary for the completion of its work under the Contract. The Contractor shall communicate with the Commission by telephone, or electronic mail, as appropriate. All costs incurred by the Contractor as a result of such communication with the Commission for the performance of work under the Contract, shall be borne by the Contractor.

If needed for off-site work, remote access to the relevant infrastructure (servers, VLANs, databases) in the Commission's network will be provided to the Contractor. Infrastructure comprises, but is not limited to software, servers, VLANs and databases.

Most of the Work is expected to be carried out off-site. On-site days may be requested by the Commission and will be agreed upon prior to the issuance of the FRD. When on-site days are requested, the Contractor's staff may be required to spend up to 20% of the person-days per Call-off Period on-site at the premises of the Commission in Vienna, Austria. The staff may need to travel to the premises of the Commission up to eight (8) times per Call-off Period.

The Contractor shall perform technical visits, when requested by the Commission, to support the use of software systems, conduct corrective maintenance or provide training. The Commission reserves the right to define the scope of the work in its written request prior to FRD issuance, as described in Section VI of this ToR.

#### **VII.4 Risk Management**

The Contractor shall provide a business continuity and risk assessment plan at the commencement of the Contract to identify potential risks that could impact the successful execution of the implementation activities outlined in this Terms of Reference.

Risks may include, but are not limited to, technical challenges, changes in project requirements/scope, resource constraints, schedule delays, integration difficulties, and third-party software dependencies. The risk assessment plan should be consistently updated, aligning with the delivery of Work milestones or significant accomplishments.

Upon the satisfactory completion of the Work, the Contractor shall conduct a final review of the initially identified risks. Risks that have been effectively mitigated or did not materialize should be officially closed, accompanied by appropriate documentation.

The insights gained from the risk management process should be methodically documented and shared with the client, thereby contributing to the knowledge repository for forthcoming similar Works.

#### **VII.5 Information Security**

The Contractor shall implement and maintain appropriate technical and organizational measures to protect the confidentiality, integrity, and availability of CTBTO's information and systems throughout the duration of the Contract. Access to CTBTO systems and data shall be granted on a least-privilege basis with multi-factor authentication, and access rights shall be reviewed regularly and revoked promptly upon personnel departure or contract end. All data shall be encrypted in transit and at rest, and any identified vulnerabilities shall be remediated in a timely manner commensurate with their severity, supported by annual independent penetration testing. The Contractor shall designate a named point of contact responsible for information security matters for the duration of the Contract.

Where the Contract involves software development, the Contractor shall apply secure development practices throughout the software lifecycle, conducting appropriate security testing prior to any deployment into a production environment and remediating critical and high findings before go-live.