REQUEST FOR PROPOSAL

To: ALL BIDDERS

CTBTO Ref. No.:   **2025-0014/JIBRIL**
(PLEASE QUOTE ON ALL COMMUNICATIONS)

Tel. No.:   +43 (1) 26030-6350
E-mail: procurement@ctbto.org

Attn:

Phone:

Date: 7 Feb 25

Fax:

Email:

Subject: Provision of Software Engineering and related Seismology Services for the SHI Expert Technical Analysis Suite (SHI-ETA).

Deadline for Submission: 7 Mar 25   *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,

for: Sally Alvarez De Schreiner
Chief, Procurement Services Section

CTBTO
PREPARATORY COMMISSION

preparatory commission for the
comprehensive nuclear-test-ban
treaty organization

ACKNOWLEDGEMENT FORM

Solicitation No: 2025-0014	**Closing Date:**	7 Mar 25
Title: Provision of Software Engineering and related Seismology Services for the SHI Expert Technical Analysis Suite (SHI-ETA).	**Vienna Local Time:**	17:00

Procurement Staff: Othman Jibril   **CTBTO Req. No.:** 0010026256

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

A: We shall submit our proposal

By: _____
(date)

Company Name: _____

Contact Name: _____

Email/Tel: _____

B: We may submit and will advise

By: _____
(date)

Company Name: _____

Contact Name: _____

Email/Tel: _____

C: We will not submit a proposal for the following reason(s)

___   our current workload does not permit us to take on additional work at this time;
___   we do not have the required expertise for this specific project;
___   insufficient time to prepare a proper submission;
___   other (please specify) _____

Company Name: _____

Contact Name: _____

Email/Tel: _____

CTBTO PREPARATORY COMMISSION | preparatory commission for the comprehensive nuclear-test-ban treaty organization

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.

This Request for Proposal (RFP) is for the provision of *Software engineering and related seismology services for the SHI expert technical analysis suite (SHI-ETA), on call-off basis* as described in the attached Terms of Reference.

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:

(a) Letter of Invitation
   - These Instructions for Preparation and Submission of Proposals, Bidder's Statement Form and with the following Attachments:
   - Attachment 1: Mandatory Requirements of the Technical Proposal and Compliance Matrix
   - Attachment 2: Evaluation Criteria and Method
   - Attachment 3: Price Schedule Form
   - Attachment 4: Procedure for submission of electronic offers in 2 sealed files
(b) Statement of Confirmation
(c) The Commission's Model Contract and its Annexes A – B;
   o The Commission's General Conditions of Contract (Annex A), incorporate herein by reference, found at www.ctbto.org under CTBTO General Conditions of Contract
   o The Commission's Terms of Reference (Annex B)

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 Proposal, 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 Bid**

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 initialled 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".

Bids sent by regular e-mail, unless clearly submitted as electronically sealed bids as indicated above and following the instructions outlined in Attachment 4 will not be considered and may lead to the rejection of the bidder from the procurement process.

Alternatively, the Bids may be submitted in physical form in two sealed envelopes as follows:

(i) **One sealed envelope shall contain 1 (one) original of the Technical Proposal clearly marked as "Original Technical Proposal". This envelope shall also contain a memory stick with 1(one) pdf of the Technical Proposal.**

No pricing/financial information shall be included in the Technical Proposal. Note however that the list of items (without the prices) shall be included in the Technical Proposal.

(ii) **The second sealed envelope shall contain 1 (one) original of the Financial Proposal marked as "Original Financial Proposal". The second envelope shall also contain a memory stick with**:
1(one) pdf of the Financial Proposal; and
1(one) pdf of the Financial Proposal without prices

The outer envelope containing the 2 envelopes shall be clearly marked as follows:
NAME OF PROJECT: [Description indicated in Letter of Invitation]
CLOSING DATE: [Date indicated in Letter of Invitation]
CTBTO REF. NO.: [Number indicated in the Letter of Invitation]
"DO NOT OPEN BEFORE THE CLOSING DATE"

The envelope containing the Original Proposal shall be sent to the following addressee:

Chief, Procurement Services Section
Office E0918
CTBTO, Vienna International Centre
Wagramer Strasse 5, A-1400 Vienna, AUSTRIA

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6.   Closing Date and Time

The Proposal shall be received by the Commission not later than the closing date and time indicated in the Letter of Invitation or as may be extended by the Commission.

7.   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 10 business days prior to the Closing Date. No requests for clarifications will be entertained after this time. Questions will <u>only</u> be accepted via e-mail be sent to:

E-mail:	procurement@ctbto.org
Subject:	RFP No. RFP 2025-0014/JIBRIL - Request for Clarifications

The Commission will make all reasonable efforts to issue the clarifications not later than 7 business days prior to the Closing Date.

Except in case of responding to a RFP clarification, no Bidder shall contact the Commission on any matter relating to the Proposal or this RFP 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.

8.   Eligible Goods and Services

The services and goods (if any) to be rendered under the Contract shall have their origin in the States Signatories of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), the list of which is available at our website 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.

9.   Type of Contract and Payment

The Commission intends to conclude firm fixed unit prices Contract(s) based on the attached Model Contract. The terms and conditions of payment for services are described in Clause 13 of the attached Model Contract.

10.   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**;

providing, but not limited to, the following information:

PART I: TECHNICAL PROPOSAL

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

No pricing/financial information shall be included in the Technical Proposal. Note however that a complete list of the items being offered (without the prices) shall be included in the Technical Section of the Proposal.

Bidders are required to follow *Attachment 1: Mandatory Requirements of the Technical Proposal and Compliance Matrix* provided as part of these Instructions for Preparation and Submission of Proposals.

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

Supplier Registration Form
Bidders must submit the Supplier Registration For available at www.ctbto.org under Supplier registration form | CTBTO

Compliance Matrix, Statement of Confirmation and Bidder's Statement Form
The attached Compliance Matrix (part of Attachment 1), Statement of Confirmation and Bidder's Statement Form shall be duly signed and submitted together with the Proposal.

Documents Establishing the Eligibility and Qualifications of the Bidder
The Bidder shall furnish documentary evidence of its status as an eligible and qualified supplier in accordance with the requirements set forth in the Terms of Reference. In order to award a contract to a Bidder, its qualifications must be demonstrated and documented in the Proposal to the Commission's satisfaction.

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 by providing a section-by-section response to the Terms of Reference indicating how the Bidder meet or will meet each of the technical requirements.

> The Commission will take into consideration the on-boarding time (off-site/on-site) needed to get familiar with the systems. The Proposal shall clearly state how many person-days are expected to be necessary for the Contractor's staff to familiarize with the system landscape. The estimated on-site/off-site days needed to get familiar with the systems shall be listed as a separate item in the proposal.

The Proposal shall also provide any other relevant issue which the bidder would like to bring to the attention of the Commission whether or not having cost implications.

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

Personnel
Curriculum vitae of key personnel proposed for this contract, including technical experience to perform the Work, to be include in the Technical Proposal.

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.

Use of former Preparatory Commission for the CTBTO ("Commission") employees in the preparation of Quotations:

A Bidder must <u>not</u>, 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 a Quotation 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.

In accordance with the Terms of Reference, the Contractor shall establish and maintain a Team Roster, for which at a minimum, the following information shall be provided for each of these staff as part of the Technical Proposal: Name; Role; Employed since; Type(s) of Service(s) from Section 3 in which the staff may be involved and Curriculum Vitae. Each member of the Team Roster shall be appropriately skilled and experienced to carry out the role and service(s) listed in the Team Roster.

Sub-Contractors
Names, legal status, address and qualifications of subcontractor(s), if any, and the scope of the subcontracted services. The Proposal shall provide a statement that your organization shall be fully responsible for the performance of sub-contractors. All sub-contractors shall be legally established in one of the CTBTO States Signatories the list of which is available at www.ctbto.org under Status of Signatures and Ratifications | CTBTO.

PART II: FINANCIAL PROPOSAL

Bidders are required to prepare the Price Schedule using *Attachment 3 (Price Schedule Form) as applicable*, attached to these Instructions for Preparation and Submission of Proposals. In presenting the cost for each item, adequate justification and calculation must be included in the Financial Proposal.

Clear and detailed explanations would enable the Commission to evaluate the Proposal promptly and proceed with fewer requests for clarifications/justifications in a later stage. This is also a factor influencing the decision for Contract award.

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) <u>For Austrian companies</u>

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 Proposal together with information on the nature of the tax and its method of calculation.

(2) <u>For European Union (EU) Companies</u>

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 Proposal 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) <u>For Non-EU Companies</u>

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 Proposal 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.

11. 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.

12. Validity of the Proposal

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

13. 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.

14. 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, based on the evaluation criteria and method given in Attachment 2, will determine the Proposal(s) that "most effectively satisfies the technical and operational requirements set out in the solicitation documents", subject to contractual and commercial compliance.

(c) 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.

15. **Negotiations of the Proposal**

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.

16. **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.

17. **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.

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.

Delivery Time:
Shipping weight (kg) and Volume (m^3) – if applicable:
List of recommended consumables and spares including prices and details on local availability, if applicable (please tick): ☐ For one year period ☐ For a period of ………………………….
Warranty period if applicable (it shall be for a **minimum of 24 months**, starting from the acceptance of the goods/services by the Commission) – please tick below as applicable: ☐ For a two-year period ☐ For a period of ………………………….
Availability of local service in Vienna, Austria (if any):
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 quotation : **Yes** ☐   **No** ☐
Confirmation that the bidder has reviewed the Commission's General Conditions of Contract, Model Contract, and agreed to all terms and conditions.   **Yes** ☐   **No** ☐ **Remarks:**
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 www.ctbto.og under Status of Signatures and Ratifications | CTBTO.   Yes ☐   No ☐   Not applicable ☐ Remarks:
Name: **Name & Title of Contact Person:** **Signature & date:**

ATTACHMENT 1
TECHNICAL COMPLIANCE MATRIX

FOR THE PROVISION OF

SOFTWARE ENGINEERING AND RELATED SEISMOLOGY SERVICES FOR THE SHI EXPERT TECHNICAL ANALYSIS SUITE (SHI-ETA), ON CALL-OFF BASIS

*Below sets out the **Minimum content of the Proposal and the <u>Requirements</u> 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
1. Executive Summary	Provide an overview of the proposal
2. Experience, Resources and Project Management	
2.1 Corporate Profile and Values	- Brief background of the company, mission/vision, ownership, size, location, number of personnel by type profile, etc. - Company business structure and its authority to execute all Work under the Contract. - If a consortium, provide a clear explanation of the business relationship between the members and governance for the execution of this project. - In case the Bidder requires the services of subcontractors, the Proposal shall include: a) Relationship of the Bidder's business to any subcontractor(s) that will be used. b) Names, addresses, legal status, and qualifications of major sub-contractor(s) proposed by your organization. c) The scope of work and nature of subcontracting.
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 8 (Requirements for the Contractor) of the Terms of Reference (ToR).

3.	**Meeting the Requirements**	
3.1 Understanding of the ToR	• Please describe your understanding of the services that are to be provided under this ToR, detailing key assumptions that impact the Technical Proposal. • Please discuss how you propose to address some of the sample tasks listed in Section 3 (Scope of Work) and Section 4 (Organization of the Work) of the ToR.	
4.	**Contractor's key staff**	
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.	
5.	**Model Contract**	
	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

Ref No. of ToR	Requirements *A section-by-section response to each section of the Terms of Reference is included in the Proposal*	Bidder's Response *Please tick whichever is applicable*		Indicate the section in your proposal
		"Yes"	**"No"**	
General				
3.2	Confirmation of resources, methodology, standards and technology: *Requirements & Analysis; Design; Build and code; Testing; Development, Maintenance and Other Services*			
4.2	Completion and Acceptance - List of Deliverables			
6	The Contractor shall submit a Monthly Report to the Commission within the first five (5) working days of each calendar month			
Requirements for the Contractor				
8.1.1	To be a company established for at least 4 (four) years			
8.1.2	To have a minimum of five (5) years of using a formal project management methodology			
8.1.3	To have a minimum of five (5) years of experience in providing software development services using an Agile methodology, preferably Scrum			
8.1.4	To propose at least 8 staff who meet the requirements in the Team Roster as described in Section 8.2.5			
8.1.5	To have experience of three (3) or more years in working with a modern issue tracking and ticket management systems, for example Jira;			
8.1.6	Provide written assurance that all reports, documentation, and communication (written and oral) supplied to the Commission shall be in English and submitted in an electronic form			
8.1.7	Warranty period of two (2) or more years after the completion of the user acceptance testing			
8.1.8	To provide documented evidence, in the form of a plan, that the Contractor will be able to adjust the			

	working hours of its relevant staff (e.g., project manager and lead developers), assigned to a Software Team, to overlap at least two hours with the Commission's working hours (9 am to 5 pm CET), on the Commission's request			
Requirement for the Team Roster				
8.2.5.1	A university degree in Computer Science or another scientific/technical subject with a high computational content			
8.2.5.2	A minimum of 5 years of recent professional experience in developing applications of similar scope as mentioned in the section 3, using state of the art technologies			
8.2.5.3	A minimum of 2 years of recent professional experience in using a software versioning system, preferably Gitlab			
8.2.5.4	A minimum of 3 years of recent professional experience in working with at least one Agile methodology, and experience working in an Agile framework			
8.2.5.5	A minimum of five (5) or more years of experience, providing software maintenance and support services for complex and custom software systems;			
8.2.5.6	A minimum of 2 years of recent professional experience in working with Linux operating systems and TCP/IP			
8.2.5.7	A minimum of 2 or more years of recent professional experience in working with Fortran, C, C++, Java, Perl, Python, and UNIX/Linux shell scripting languages, APIs, SQL and database programming			
8.2.5.8	A minimum of 2 years of recent professional experience in working with the Public Key Cryptography Standards, PKCS#11, PKCS#12, API and OpenSSL libraries, Apache, Docker runtime, and container orchestration parametrisation			
8.2.5.9	A minimum of 3 years of recent professional experience in working with object-oriented development and design patterns, exposure to project management methodologies and incremental software development techniques			
8.2.5.10	A minimum of 3 years of recent professional experience in the design and implementation of complex web portals / content management systems			

8.2.5.11	A minimum of 3 or more years of recent professional experience in working with all elements of the Software Development Lifecycle			
8.2.5.12	A minimum of 2 or more years of recent professional experience working with web -based internet application development architectures			
8.2.5.13	At least one of the team members should have university degree in Geophysics, Earthquake Science, or other similarly quantitative fields			
Risk Management				
9	Risk Management plan as part of the Proposal. The Risk Management plan shall also include a business continuity plan and contingency plans. A thorough risk assessment plan at the project's commencement shall be provided.			

Evaluation Criteria and Method

PROVISION OF SOFTWARE ENGINEERING AND RELATED SEISMOLOGY SERVICES FOR THE SHI EXPERT TECHNICAL ANALYSIS SUITE (SHI-ETA), ON CALL-OFF BASIS

No.	Ref No. in TOR	1.QUALIFICATION REQUIREMENTS (PASS/FAIL)	PASS/FAIL
		Requirements for the Contractor (PASS /FAIL)	**PASS/FAIL**
1	8.1.1	To be a company established for at least 4 (four) years	PASS/FAIL
2	8.1.2	To have a minimum of five (5) years of using a formal project management methodology	PASS/FAIL
3	8.1.3	To have a minimum of five (5) years of experience in providing software development services using an Agile methodology, preferably Scrum	PASS/FAIL
4	8.1.4	To propose at least 8 staff who meet the requirements in the Team Roster as described in Section 8.2.5	PASS/FAIL
5	8.1.6	To Submit three customer references for similar projects managed in English (reports, documents, written and oral communication);	PASS/FAIL
6	8.1.8	To provide documented evidence, in the form of a plan, that the Contractor will be able to adjust the working hours of its relevant staff (e.g., project manager and lead developers), assigned to a Software Team, to overlap at least two hours with the Commission's working hours (9 am to 5 pm CET), on the Commission's request	PASS/FAIL
		Requirements for the Contractor's Personnel (Contractor's Team)	**PASS/FAIL**
7	8.2.5.1	A university degree in Computer Science or another scientific/technical subject with a high computational content	PASS/FAIL
8	8.2.5.2	A minimum of 5 years of recent professional experience in developing applications of similar scope as mentioned in the section 3, using state of the art technologies	PASS/FAIL
9	8.2.5.3	A minimum of 2 years of recent professional experience in using a software versioning system, preferably Gitlab	PASS/FAIL
10	8.2.5.4	A minimum of 3 years of recent professional experience in working with at least one Agile methodology, and experience working in an Agile framework	PASS/FAIL
11	8.2.5.6	A minimum of 2 years of recent professional experience in working with Linux operating systems and TCP/IP	PASS/FAIL
12	8.2.5.8	A minimum of 2 years of recent professional experience in working with the Public Key Cryptography Standards, PKCS#11, PKCS#12, API and OpenSSL libraries, Apache, Docker runtime, and container orchestration parametrisation	PASS/FAIL
13	8.2.5.9	A minimum of 3 years of recent professional experience in working with object-oriented development and design patterns, exposure to project management methodologies and incremental software development techniques	PASS/FAIL
14	8.2.5.10	A minimum of 3 years of recent professional experience in the design and implementation of complex web portals / content management systems	PASS/FAIL
16	8.2.5.13	At least one of the team members should have university degree in Geophysics, Earthquake Science, or other similarly quantitative fields with experience in moment tensor inversion, waveform cross correlation, waveform modelling, and analysis of seismicity catalogues.	PASS/FAIL

No.	Ref No. in TOR	Only bidders who pass all above criteria will be considered for the point system evaluation (2nd stage)			
		2.TECHNICAL REQUIREMENTS - EVALUATION CRITERIA AND METHOD	Points		
		Quality of the Proposal	Max Points	Factor	Weighted score
17	Overall	Extent to which all aspects of the ToR have been addressed in sufficient detail and clarity.	3	5	15
18	3	Understanding of the scope of work and the responsibilities of the Contractor	3	2	6
		Subtotal	6		21
	Ref No. in TOR	**Requirements for the Contractor**	Max Points	Factor	Weighted score
19	8.1.5	To have experience of three (3) or more years in working with a modern issue tracking and ticket management systems, for example Jira;	3	2	6
20	8.1.7	To provide a warranty period of two (2) or more years after the completion of the user acceptance testing. Terms and conditions of post-warranty support and bug fixes should be available and clearly specified;	3	2	6
		Subtotal	6		12
	Ref No. in TOR	**Requirements for the Team Roster**	Max Points	Factor	Weighted score
21	8.2.5.5	A minimum of five (5) or more years of experience, providing software maintenance and support services for complex and custom software systems	3	3	9
22	8.2.5.7	A minimum of 2 or more years of recent professional experience in working with Fortran, C, C++, Java, Perl, Python, and UNIX/Linux shell scripting languages	3	3	9
23	8.2.5.11	A minimum of 3 or more years of recent professional experience in working with all elements of the Software Development Lifecycle: Eliciting and documenting business process flows, use cases, requirements, quality management plans, user acceptance testing, and end -user training	3	2	6
24	8.2.5.12	A minimum of 2 or more years of recent professional experience working with, and understanding of, requirements definition and software system design methodologies Knowledge of web -based internet application development architectures	3	1	3
		Subtotal	12		27
		TOTAL - Technical Evaluation	24		60

The minimum acceptable Total Points is 24 - Total Weight Score of 60

EVALUATION METHOD:

1. Technical Evaluation:

The technical evaluation process will be done in two stages:

1) <u>Stage 1</u>: 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

2) <u>Stage 2</u>: The technical proposals that have passed stage 1 of the technical evaluation process, will be evaluated against the weighted criteria set forth in the evaluation matrix above.
In order to pass this stage, bidders must obtain a minimum acceptable *Points is 24 and a Weighted score of at least 60* and in accordance with the scoring table indicated below:

TABLE 2

Points	
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 technical, functional, or performance related 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.

2. Financial and commercial evaluation

Once the technical evaluation is finalized, the financial offers of the technically compliant bidders will be evaluated in accordance with the formula given below:

X= Max Available Points * 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

3. Selection
The weight of the technical and financial components is **60%** and **40%** respectively.

ATTACHMENT 3
Price Schedule Form

PROVISION OF SOFTWARE ENGINEERING AND RELATED SEISMOLOGY SERVICES FOR THE SHI EXPERT TECHNICAL ANALYSIS SUITE (SHI-ETA), ON CALL-OFF BASIS

Description (ToR): Tasks under Section 3 (Scope of Work)	Unit	QTY	Initial Call-off period 24 months (Max Est. 800 person-days) Unit Price	1st Optional extension period 24 months (Max. Est. 400 person-days) Unit Price	2nd Optional extension period 24 months (Max. Est. 400 person-days) Unit Price
Off-site Rate: Max. Est. 760 initial period and 360 days 1st & 2nd Ext. periods:					
Junior	Person/Day	1			
Standard	Person/Day	1			
Expert	Person/Day	1			
On-site Rate: Max. Est. 40 days /each period (excluding Travel Cost):					
Junior	Person/Day	1			
Standard	Person/Day	1			
Expert	Person/Day	1			
Travel Cost:			Unit Price	Unit Price	Unit Price
(i) Return Ticket / Trip per person : Max. Est No. of trips: 8 trips of 5 days **each per period.**	RT/Trip	1			
(ii) DSA (Daily Aubsistence Allowance) per On-site working day: 40 days **per period**	Day	1	**Do not quote for DSA - Please see below notes**	**Do not quote for DSA - Please see below notes**	**Do not quote for DSA - Please see below notes**

NB:

1) Please specify currency **(USD or Euro only)** . The rates shall be firm and fixed throughout the term of the Contract.

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 (FRDs) at the rates quoted in this Attachment.

3) The 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-days at all.

4) For evaluation purposes, bidders shall provide the cost of return ticket.

5) Bidders shall NOT quote for Daily Subsistence Allowance (DSA), it shall be calculated and paid based on the values provided by the International Civil Service Commission (ICSC) and available in their website (as applicable at the time of issuing the Formal Request for Delivery (FRD)).

Attachment 4

"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 (labeling 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.

We recommend that you leave yourself plenty of time to complete the below process (including getting any necessary assistance from the Commission), as late offer 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)

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.
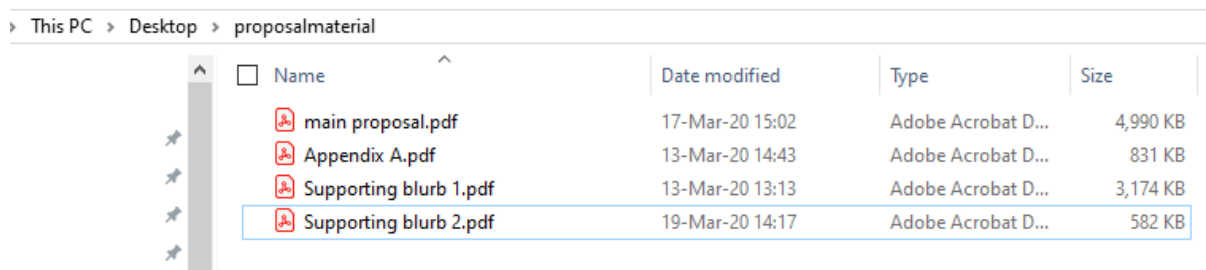

Figure 1 An example set of files to be submitted

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 filname, 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.
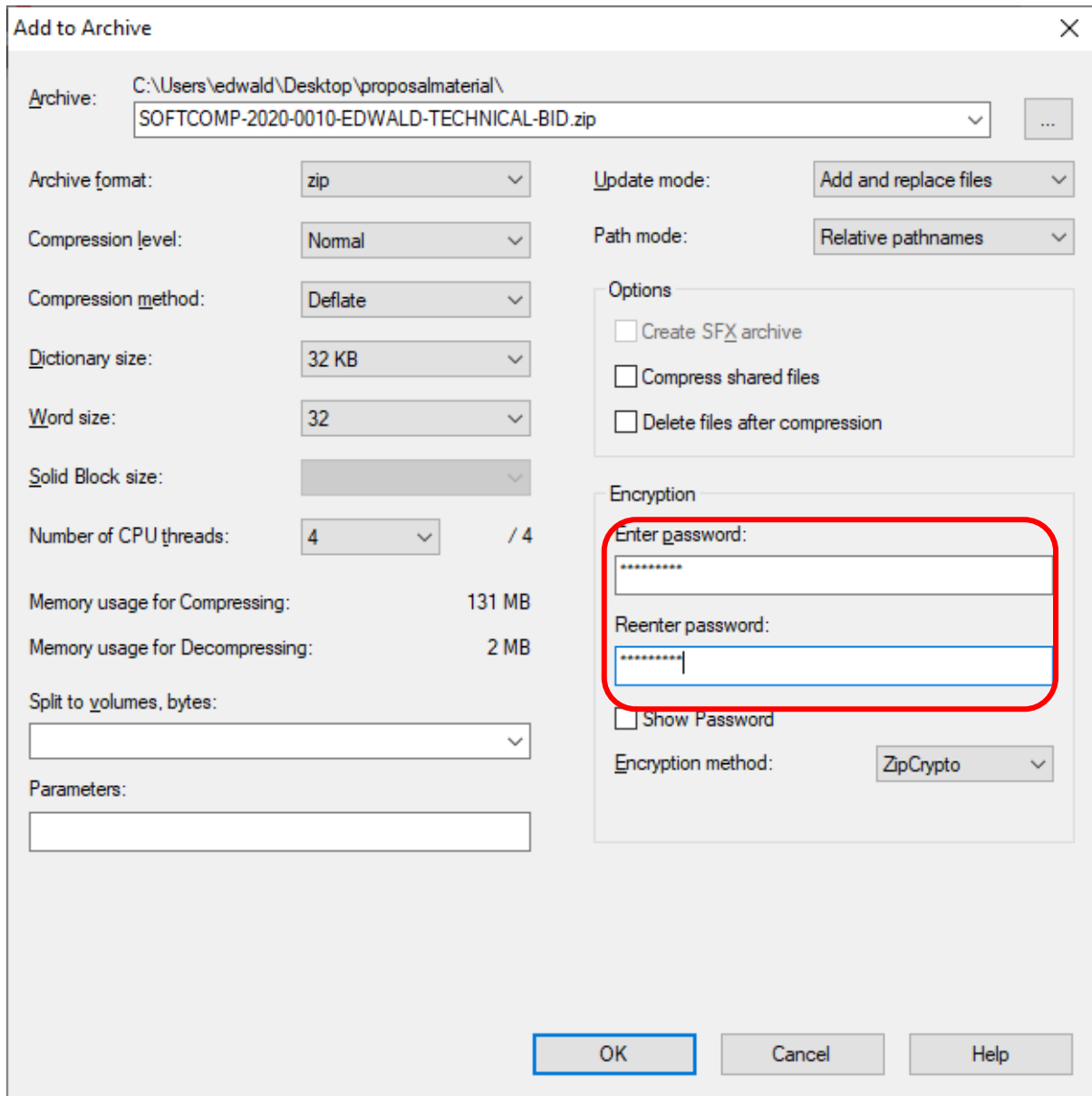
Figure 2 Creating an Archive

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 decribed 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).

Procedure for Submission of Electronic Offers in 2 Sealed Files

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.)
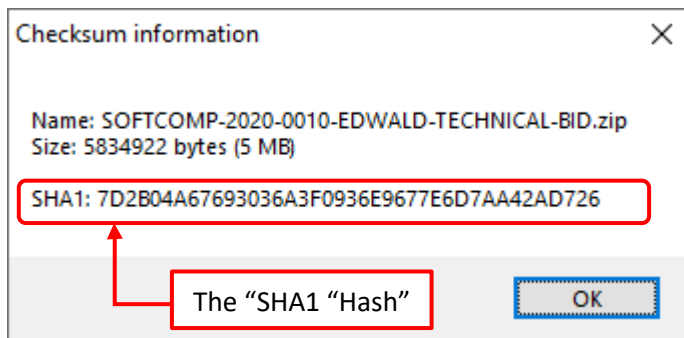

Figure 3 SHA1

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 (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

IMPORTANT NOTE: As stated above, only send the Encryption Key for the Technical Offer to the bid_keys@ctbto.org mailbox when sending your Technical and Financial Offer to the 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) 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.

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

Procedure for Submission of Electronic Offers in 2 Sealed Files

preparatory commission for the
comprehensive nuclear-test-ban
treaty organization

MODEL CONTRACT

SAP No. xxxxxxxx

between

THE PREPARATORY COMMISSION

FOR THE COMPREHENSIVE NUCLEAR-TEST-BAN TREATY

ORGANIZATION

and

NAME OF CONTRACTOR

for
the provision of

SOFTWARE ENGINEERING AND RELATED SEISMOLOGY SERVICES FOR THE SHI EXPERT TECHNICAL ANALYSIS SUITE (SHI-ETA), ON CALL-OFF BASIS

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

February 2025

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Model Contract - Software Engineering and related Seismology Services for the SHI Expert Technical Analysis Suite (SHI-ETA), On a Call-off Basis - February 2025

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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 the Vienna International Centre, Wagramer Strasse 5, 1400 Vienna, Austria, and [**Name of Contractor**] (hereinafter referred to as the "Contractor"), having its principal office located at [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 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 and Annexes B and C.

"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.

Model Contract - Software Engineering and related Seismology Services for the SHI Expert Technical Analysis Suite (SHI-ETA), On a Call-off Basis – February 2025

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"Services" means services provided by the Contractor under this Contract as requested by the Commission under FRDs.

"Taxes" shall mean all direct and indirect taxes (including value added tax, general sales tax or goods and services tax), assessments, fees, customs duties, liens and charges in as much as they are levied in conclusion or implementation of the Contract, including customs restrictions and charges of similar nature in respect of articles imported or exported for the Commission's official use.

"Work" means all the 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.

2. AIM OF THE CONTRACT

The aim of this Contract is to provide Software Engineering and related Seismology Services for the SHI Expert Technical Analysis Suite (SHI-ETA), On a Call-off Basis, as and when required by the Commission.

3. ENTRY INTO FORCE AND DURATION OF THE CONTRACT

(a)   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.

(b)   The Commission shall have the right to call-off the Work in the form of FRD within a period of 24 (twenty-four) months from the Effective Date or the performance of a maximum of 800 person-days 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. This sub-Clause (b) shall also apply to any extension exercised under sub-Clause (c) below.

(c)   The Commission shall have the option to extend the Call-off Period twice, each extension period is 24 (twenty-four) months or the performance of a maximum of 400 person-days by the Contractor, whichever occurs first, under the same terms and conditions as those of this Contract. The Commission will inform the Contractor about its intention to extend the Work at least one (1) month prior to the expiry of the Contract. The optional extensions will be implemented through a written notification to the Contractor by the Commission.

Model Contract - Software Engineering and related Seismology Services for the SHI Expert Technical Analysis Suite (SHI-ETA), On a Call-off Basis – February 2025

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4. RESPONSIBILITIES OF THE CONTRACTOR

(a) The Contractor shall provide the Work as specified in Annexes B and C.

(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, and the Contractor shall have no rights in that Software or source code unless granted by the Commission under Clause 24 of this Contract.

5.   FORMAL REQUESTS FOR DELIVERY

(a) During the term of the Contract, the Commission has the right, but not the obligation, to initiate performance of Services through the issuance of individual FRD in accordance with Annex B based on the firm fixed unit prices set out in Annex C. The Contractor shall not perform any Work if not requested by the Commission through FRD. However, the Contractor may propose FRD for Commission's evaluation.

(b) The FRD issued by the Commission shall be the basis for acceptance, invoicing and payment of any Services performed by the Contractor.

(c) The performance of Services shall be made in full in accordance with the respective FRD. Partial service performance of FRD will not be accepted and reimbursed without prior written agreement by the Commission.

(d) The Services shall be performed at the place and within the approved Work Plan specified in the relevant FRD.

(e) The Commission may revise FRD as and when it may deem necessary.

6.   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

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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.

7.   **INSURANCE**

The Contractor shall provide appropriate insurance, as specified in Clause 9 of Annex A.

8.   **WARRANTY**

(a)   The provisions of Clause 28 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 subcontractors or repair agents acting on behalf of the Contractor.

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

9.1   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 documents.

9.2   The Contractor shall give all notices required by the nature of the Work.

9.3   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**

10.1   The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programmes in connection with the Work.

10.2   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 persons on the Commission's premises, as applicable, who may be affected thereby.

(ii)   property of the Commission, as applicable.

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10.3 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.

10.4 The Contractor shall be responsible for the prevention of accidents on the Commission's premises, as applicable, during the execution of the Work.

10.5 In any emergency affecting the safety of persons or property, the Contractor shall promptly act to prevent threatened damage, injury and loss.

10.6 The Contractor shall promptly remedy all damage and loss to any property, referred to in sub-Clause 10.2 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 10.2 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 Annexes B and C and shall promptly notify the Contractor thereof. The Commission shall respond promptly to requests for information by the Contractor regarding the Work.

12. PRICES

(a) The Commission shall pay to the Contractor, in consideration of the full and proper performance of its obligations under the Contract, as follows:

    (i) for each FRD issued during the firm Call-off Period specified in Clause 3(b) above, the firm fixed person-day rates set out in Annex C for this period;

    (ii) subject to sub-Clause 12(b) below, for each FRD issued during the first optional extension of the Call-off Period specified in Clause 3(c) above, the firm fixed person-day rates set out in Annex C for this period;

    (iii) subject to sub-Clause 12(b) below, for each FRD issued during the second optional extension of the Call-off Period specified in Clause 3(c) above, the firm fixed person-day rates set out in Annex C for this period;

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(iv) if applicable, daily subsistence allowance (DSA), which cover lodging, meals and incidental travel expenses, based on the United Nations Daily Subsistence Allowance (UN DSA) rates effective at the time of the respective travel (the FRD, will include the UN DSA rates applicable at the time of issuance of the FRD), unless other specified otherwise by the Commission in the FRD;

(v) if applicable, actual costs of other travel costs, excluding DSA, not to exceed the estimated costs in the FRD by more than 10%; if applicable, travel shall be based on simple economy return tickets for most direct route;

(hereinafter referred to as the "**Contract Price**").

(b) In the event that the Commission decides to extend the Call-off Period early, as foreseen in Clause 3(c) above, the Contactor will be reimbursed for the person-days called off in this period as follows:

(i) until the expiry of the initial Call-off Period, the daily rates set out in sub-Clause (a)(i) above;

(ii) after the expiry of the initial Call-off Period, the daily rate agreed for the respective extension referred to in sub-Clauses (a)(ii) and (a)(iii) above.

(c) The person-day rates set out in Annex C shall be held firm and fixed for the entire duration of the Contract.

(d) 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).

(e) **[PLEASE SELECT, AS APPLICABLE, ONE OF THE FOLLOWING AT THE TIME OF AWARD]:**

[Identify type [and amount] of Taxes] is/are applicable under this Contract. 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 sub-Clause 13.2(d) below.

OR

No Taxes are applicable under this Contract.

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13. PAYMENT TERMS

13.1 Payments shall be made upon satisfactory completion of each FRD. The Contractor shall submit the following documentation to the Commission for payment:

(a)   Original invoice submitted in accordance with sub-Clause 13.2(c) below;

(b)   If applicable, supporting documentation of costs actually incurred for travel, excluding DSA, as referred to in Clause 12(a)(v) above;

(c)   [IF NO TAXES ARE APPLICABLE UNDER THIS CONTRACT, THIS PARAGRAPH SHOULD BE OMITTED:] Documentation referred to in sub-Clause 13.2 (d) below supporting any Taxes paid; and

(d)   Any other documentation that might be required under the applicable FRD.

13.2   General Payment Provisions

(a)   The Commission shall make the payments to the Contractor on the basis of an invoice submitted by the Contractor. All payments shall be made within 30 (thirty) days of the receipt and acceptance of the original invoice, provided that the Work has been satisfactorily completed and has been accepted by the Commission.

(b)   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.

(c)   The Contractor shall submit an invoice electronically, from the Contractor's official e-mail address in PDF format, duly signed and sealed by the Contractor and submitted to the Commission's email addressed specified under 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.

IF NO TAXES ARE APPLICABLE UNDER THIS CONTRACT, PARAGRAPH (d) BELOW SHOULD BE OMITTED.]

(d)   [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.

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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 30 (thirty) 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

15.1 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.

15.2 Any request for extension of the time for reasons referred to in sub-Clause 15.1 above shall be submitted to the Commission not later than 20 (twenty) 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.

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17. ENTIRE AGREEMENT

This Contract represents the final agreement in respect of the Goods and/or Services and shall supersede all prior agreements and representations between the Parties in this respect. Annexes A to C and the FRDs 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.

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 at the following address (or such address or email address as the Party may substitute by notice after the date of the Contract):

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(a)   The Commission:

For Contractual Issues:

Chief, Procurement 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

For submission of invoices:

Accounts Payable
CTBTO Financial Services Section
Vienna International Centre
Wagramer Strasse 5, P.O. Box 1200
1400 Vienna, Austria
Tel: + (43 1) 26030 6292
E-mail payable_invoices@ctbto.org

For invoices and payment related enquiries

payments@ctbto.org

(b)   The Contractor:

Name:
Address:
Tel:
Email:

23.   EFFECTIVENESS

23.1 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;

(iii)   if by electronic communication, when retrievable by the Commission in document form.

23.2 A communication given under sub-Clause 23.1 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.

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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.

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IN WITNESS hereof, the duly authorized representatives of the Parties have executed this Contract in Vienna, Austria:

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

_____

[Name and Position]

Date: _____   Place: <u>Vienna, Austria.</u>

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

_____

[Name and Position]

Date: _____   Place: _____

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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

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ANNEX B

TERMS OF REFERENCE

FOR THE PROVISION OF

SOFTWARE ENGINEERING AND RELATED SEISMOLOGY SERVICES FOR THE SHI EXPERT TECHNICAL ANALYSIS SUITE (SHI-ETA), ON CALL-OFF BASIS

TABLE OF CONTENTS

1. INTRODUCTION

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organisation (hereinafter referred to as the "Commission", CTBTO" or "PTS"), located in Vienna, Austria, is the international organisation establishing the global verification system under the provisions of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), which bans any nuclear explosion on the surface of the earth, underground, in the atmosphere, underwater and on the surface of the water. The verification system includes the International Monitoring System (IMS), a global network of monitoring stations that employ waveform technologies (seismic, hydro-acoustic and infrasound) and radionuclide technologies (particulate and noble gases), a global satellite communications infrastructure (hereinafter referred to as the GCI), an International Data Centre (IDC) and the capability to carry out on-site inspections (OSI). More information can be found under www.ctbto.org.

One of the IDC services to the States Parties is **Expert Technical Analysis** (ETA):

Paragraph 19 of the Protocol to the CTBT (Part I) says that "***The IDC shall carry out, at no cost to States Parties, special studies to provide in-depth, technical review by expert analysis of data from the IMS, if requested by the Organization or by a State Party, to improve the estimated values for the standard signal and event parameters***".

Paragraph 20 provides that the methods for supporting data access, and the provision of data shall include the following service:

"…Assisting individual States Parties, at their request and at no cost for reasonable efforts, with expert technical analysis of IMS data and other relevant data provided by the requesting State Party, in order to help the State Party concerned to identify the source of specific events. The output of any such technical analysis shall be considered a product of the requesting State Party but shall be available to all States Parties."

According to Annex 2 to the Protocol, one of the defining parameters estimated by the IDC is the hypocentre solution based on SHI data, which includes the origin epicentre coordinates and depth. Moreover, one of the characterization parameters for International Data Centre Standard Event Screening mentioned in the same Annex is focal mechanism. In routine IDC processing, source location is calculated with the globally robust and steady technique providing quasi uniform location accuracy and uncertainty which depends on the quality of relevant detections. For ETA, advanced and state-of-the-art techniques should be used to enhance automatic and

interactive location.

2. BACKGROUND

The procedures and software for the Expert Technical Analysis and Special Studies (ETA/SS)

were intensively studied and developed during the last years at the IDC, resulting in development of the Expert Technical Analysis Suite Prototype for SHI data. The ETA Suite consists of two major components: ParMT and SCT.

ParMT (Parametrical Moment Tensor Estimator) is an ETA tool for the shallow events depth
and magnitude determination based on the moment tensor estimation.

Spot Check Tool (SCT) is an implementation of the master-event approach (match filtering). Information backbone of the SCT is a historical IDC database allowing for testing current event hypotheses with the archived event bulletins using master event approach. Computation backend of SCT is a set of FORTRAN 77 programs and shell scripts providing/building XSEL (cross correlation standard event list) and conducting automatic comparison with SELs (same day analysis) and REB (upon its completion) bulletins. Frontend is a Web-based graphical interface implemented as a portlet of the IDC Liferay portal in Docker container providing access to the backend in web services. SCT backend can run in fully automatic mode, while frontend GUI (integrated into a Liferay portal) provides a user an interactive mode of operation, allowing intuitive event selection and configuration of the backend tool as well as review of the results in tables and visualization tools. Liferay portal allows various access levels for different users, so independent internal reviewers, IDC analysts and external users will be able to securely utilize specific fine-tuned features of the SCT.

ParMT and SCT were developed using a wide range of technologies including FORTRAN77, FORTRAN90, C, Java CUDA, bash, C-shell, Python and Angular. Data exchange in the applications is based on JSON files. Additional products like Liferay, ORACLE, RHELx are used in the development of the SHI Expert Technical Analysis suite (SHI-ETA).

Given the large volume of data used in the SHI_ETA processing, it is necessary to improve the performance of the applications through parallelization.

3. SCOPE OF WORK

The Commission seeks to establish a Contract with an Initial Call-off Period of two (2) years, and options to extend the Contract twice for two (2) years each (two additional Call-off Periods). The maximum volume of work under the Call-off Periods is shown in the table below:

	Years	Person days per Year	Total
Initial Call-Off Period	2	400	800
1st Extension	2	200	400
2nd Extension	2	200	400
Contract Total			1600

This is the maximum volume, and the Commission reserves the right, at its sole discretion, to call-off less or no person-days at all.

These Terms of Reference defines the technical framework for the provision of on-site and off-site software engineering services and related seismology services for improving and maintaining the SHI expert technical analysis suit (SHI-ETA).

The services include research in seismology for methods and algorithms related to ParMT and SCT, design, development, testing, documentation, and maintenance of software. At the time when the Work is called-off (see Section 4 for the organization of work), the detailed scope of the service shall be defined.

3.1 Objectives

The overall objective of this project is to provide further development of the Expert Technical Analysis and Special Studies (ETA/SS) frameworks and software in compliance with the Treaty, and support for their implementation at the IDC, targeted at the related IDC Commissioning tests and experiments as guided by the PTS Performance Monitoring and Testing Framework (hereinafter referred to as "the Work"). The software supporting the ETA/SS is currently the ETA suite composed by are divided into ParMT and SCT.

3.2 Requested Services

The Preparatory Commission seeks to establish a Call-off Contract for the provision of services to develop some software tools for station operators and a new SO-Portal ("the Services" or "the Work") under the terms outlined in this TOR.

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. Software developments are done in a Jenkins based continuous integration and testing environment. Tasks should be accomplished under Agile software development methodologies and following the IDC change management processes. The Commission uses Gitlab, JIRA and Confluence as main tools for managing and documenting software in a containerized development (Docker and Kubernetes).

The Work includes but is not limited to following tasks within the Software Development Life Cycle.

Requirements & Analysis – requirements gathered based on the business needs of the PTS:

- Provide software solutions in accordance with IDC user requirements and/or review and refine existing software solutions provided by the PTS. The outcome of this step would be a formal document for guiding the work;

- Manage Jira tickets for tracking the work;

- Estimate the effort and resources to execute the work;

- Analyse the requirements keeping the design and code of the software in mind.

- Analysis of the current functionality of a software system;

Design – Convert to software specifications:

- Recommend/evaluate design approaches;

- Software Architecture support;

- Recommend frameworks, tools, and libraries for building the software solution;

- Upgrade interfaces as required.

Build and code – translating the design to a computer-legible language; application and designed modules are made ready for deployment:

- Write code using the chosen programming language;

- Delivery, acceptance support and implementation support of each deliverable;

- Code refactoring for specific modules.

Testing and quality assurance:

- Development of acceptance test plans;

- Support PTS in testing and running the Software on development machines;

- Design and Implement test cases for code quality, unit testing, integration testing, performance testing, security testing, among others;

- Create testing reports.

Deployment – operational modules and applications are release to PTS IT-environment:

- Implementation of CI/CD pipeline and integration into the IDC CI/CD framework;

- Delivery of the final documentation agreed for each task, typically consisting of Software Design Description, Software User Manual, Software configuration and administration manuals;

- Implement deployment and release policies;

- Provide installation and usability assistance;

- Adjust operating system settings, Docker runtime, and container orchestration parametrisation;
- Provide training/Demos or other services associated with operating the software.

Maintenance and continuous improvement of operational software:

- Perform software troubleshooting;
- Adapt software to changes in the PTS IT-environment;
- Provide proactive and/or reactive support services;
- Implement software patches and updates;
- Migrations for major releases of software;
- Provide on-site support upon request from the PTS;
- Create monitoring scripts;
- Support in log analysis.

Other Services:

- To continue tuning and calibrating the software with the data from the IDC database and historical data from other sources (including IRIS, DTRA, LLNL, etc.), taking into account data and metadata- related issues (instrument response, geographical coverage, insufficient metadata, etc.);
- To develop an interface or a plugin allowing parsing of the ParMT-based body and surface wave synthetic seismograms (regional and teleseismic) to Spot Check Tool, thus providing substantial SCT code reuse;
- To estimate potential improvement in screening power of focal mechanism with the use of the UNE models based on historical and IMS data;
- To improve performance in cross-correlation (computation engine of Spot Check Tool);
- To add new bulletins/external events to the SCT. Current implementation of Spot Check Tool provides means for checking events from a set of IDC bulletins: SEL3, LEB, REB, VSEL;
- To make proposals on the other ETA/SS related implementations which were already considered at the IDC (for instance, blind source separation based on Independent Component Analysis (ICA) or/and cepstral analysis, and ambient noise tomography for refining crustal velocity model beneath IMS arrays);
- To evaluate and implement parallelization for specific computational tasks.

3.3 Output and Deliverables

Deliverables shall be defined at the time when work is called-off (see Section 4 for the organization of work). The deliverables should follow standards specified by the Commission, which are based on industry best practices.

The Commission may select deliverables from the below list, or request other deliverables deemed relevant to the project.

Project-oriented:

- Project plan: a plan document specifying the roles and responsibilities, schedule, milestones, deliverables and effort expressed in number of days;

- Progress Report and updated project plan;

- Risk management plan;

- Monthly report of complete and ongoing activities;

- Resource planning (vacations, reinforcement staff, onsite work);

- Handover report.

Software-oriented:

- A statement of the requirements / objectives of the software component;

- Recommendations / guidelines to help the Commission staff adhere to the implementation / design concepts;

- Results of review and inspection (architectural, database design, code, documentation when applicable);

- Status of active technical support issues.

- Status of tickets, bug reports and possible fixes.

- Status and updated plan for all active development tasks.

- Reports on security issues and vulnerabilities of the delivered modules or extensions

- Source code documented as per agreed coding standards;

- 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 and all known defects;

- 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;

- Technical documentation including design documents for the software components as per agreed standards (e.g., User guides and manuals, Help files, technical specifications, Training materials);

- Testing reports;

- Jira - Agile reports for Scrum teams;

Process and Training oriented:

- Configuration management plan;

- Minutes of workshops or (tele)conferences for knowledge transfer to the Commission staff

- Training material;

- Application-Workflows, Error messages dictionary.

4. ORGANIZATION OF WORK

The Services will be initiated by the Commission in writing through a Formal Request for Delivery (FRD).

4.1 Initiating Work

Before the issuance of an FRD 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 provide, at a minimum, within one (1) week of receiving the written request, the following information in the form of a work 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. The software team shall be a subset of the team roster, as described in section 8.2;

- Work plan and key schedule for the project initiation;

- Ballpark estimate of the total cost to be allocated of the software project, broken into services;

- Commencement date and completion date of the service;

- Where applicable, travel shall be organized by the Contractor and reimbursed by the Commission on the basis of simple economy return ticket for the most direct route upon presentation of supporting documents.

After review of the work plan for each of the service identified in the written request, and only after acceptance by the Commission, the FRD shall be issued to the Contractor.

Each FRD shall be based on one (1) or more of the services described in this ToR under section 2 and on the approved work plan for each of the service to be completed. The Commission will forward FRDs to the Contractor with adequate advanced notice and containing all necessary details, expected deliverables, and minimum requirements for satisfactory performance.

The Commission shall not be held liable for the performance of any service(s) which have been performed before the formal issuance of an FRD to the Contractor.

Since the IDC follows the Scrum software development methodology, generally the work is based on Scrum sprints and cover software development services to be performed within the span of approximately 4 weeks. Sprints are recorded in the Commission's JIRA-based tracking system. The Commission will provide the description of the work to be performed in writing to the Contractor and the Contractor shall respond with an estimate of the number of person-days required to complete the work and with a delivery date. After acceptance of the estimate and delivery date, the Commission will issue the Sprint to the Contractor.

Prior to issuing Sprint, the Commission and the Contractor shall also agree on the place of work (on-site/off-site or a combination thereof).

The Contractor shall perform work only after receipt of the FRD.

4.2 Completion and Acceptance

At the end of a particular service under the FRD, the Contractor shall submit to the Commission the deliverable(s) as stated in the respective FRD. The work will be reviewed by the Commission staff and by the Commission management against requirements and the Commission internal working practices and standards.

The deliverables may include:

- Updated software design documents;
- Updated software user guide;
- Description of how to use the programming interfaces developed under this contract;
- Updated source code for software and common libraries, including documentation.

Typically, in accordance with the Scrum methodology, the Contractor will present the work performed during the sprint, including demonstrations of the newly developed software, during the Sprint Review meeting.

5. RESOURCES BY THE COMMISSION

The Commission will provide to the Contractor remote access to the relevant infrastructure in the PTS network, should it be deemed necessary. "Infrastructure" comprises, but is not limited to software, servers, VLANs and databases. 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 the Commission's personnel, documentation, and databases and other necessary identified sources of information.

For on-site work to be performed at the PTS headquarters in Vienna, Austria, the Commission will provide at its premises a suitable work environment (work space, meeting rooms for presentations and trainings, standard stationery, internet connection) to the Contractor's personnel to perform the services under the Contract, as required.

5.1 Location

For all tasks, the Contractor's personnel will be expected to work off-site the premises of the Commission in Vienna, Austria. Only for the purposes of meetings, on-site installation, or other activities as required, the Contractor's personnel might be required to work for limited periods at the Commission's premises. These on-site days shall be agreed with the Commission prior to the issuance of the relevant FRD.

The Contractor will be required to travel to the Headquarters of the Commission in Vienna up to 4 times per year. Each visit shall not exceed 5 days in duration.

Where applicable, the Contractor shall make all the travel arrangement (visas, hotels etc.) for their personnel, if travels are required.

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.

6. REPORTING

The Contractor shall submit a Monthly Report to the Commission, electronically via email and within the first five (5) working days of each calendar month, describing all the activities performed during the preceding month, including but not limited to:

- Summary of technical support activities done;
- Status of active technical support issues;
- Status of tickets, bug reports and possible fixes;
- Status and updated plan for all active development tasks; and
- Plan for future activities.

7. CONTRACTOR'S RESPONSIBILITIES

At the start of each project, the Contractor shall detail and implement a project management system, that clearly defines how the work is to be managed and controlled. It should include at a minimum:

- Approval by the Commission of the division of the project in stages within defined milestones and deliverables;
- Authorization to proceed from one stage to the other by the Commission;
- Approval by the Commission of the scope, costs and schedule of each stage of the project.
- Planning and assurance of quality for each stage of the project;

- Monitoring of the progress of the project by the Commission through continuous status;
- Reports (automated status reports is preferable) and timely issue escalation procedures;
- Final report and Lessons learned report at the end of the project;
- Risk management;
- Communication plan.

For off-site work, the Contractor shall provide their 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, electronic mail, or video teleconferencing, 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.

8. REQUIREMENTS FOR THE CONTRACTOR

The Contractor shall satisfy the following mandatory requirements:

8.1 General Requirements

The Contractor shall satisfy the following mandatory requirements:

8.1.1   To be a company established for at least 4 (four) years;

8.1.2   To have a minimum of five (5) years of using a formal project management methodology;

8.1.3   To have a minimum of five (5) years of experience in providing software development services using an Agile methodology, preferably Scrum;

8.1.4   To allocate at least 8 staff who meet the requirements in the Team Roster as described in Section 8.2.5;

8.1.5   To have experience of three (3) or more years in working with a modern issue tracking and ticket management systems, for example Jira;

8.1.6   To have at least three customer references for similar projects managed in English (reports, documents, written and oral communication) duly documented;

8.1.7   To provide a warranty period of two (2) or more years after the completion of the user acceptance testing. Terms and conditions of post-warranty support and bug fixes should be available and clearly specified;

8.1.8   To provide documented evidence, in the form of a plan, that the Contractor will be able to adjust the working hours of its relevant staff (e.g., project manager and lead developers), assigned to a Software Team, to overlap at least two hours with the Commission's working hours (9 am to 5 pm CET), on the Commission's request;

8.2 Team Roster

8.2.1 Constitution of the Team Roster

The Contractor shall provide and maintain a Team Roster with 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 as part of the roster for each of these staff:

1) Name
2) Role
3) Employed since
4) Type(s) of Service(s) from Section 3, in which the staff may be involved.
5) Curriculum Vitae

The Contractor shall demonstrate:

6) The capacity of the suggested Team Roster to provide the Services described in section 3.
7) The compliance of the suggested Team Roster with requirements set out in sections 8.2.5.

The Team Roster shall be appropriately skilled and experienced to carry out the role and service(s) listed Section 3.

8.2.2   Maintenance of the Team Roster, conditions of amendment

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

If the Commission considers, at its own discretion, that the Team Roster lacks capacity or capability to perform a specific work within the specified timeframe or quality, the Contractor shall provide, within five (5) working days after a request is made by the Commission, the details of skilled and experienced staff to be added to the Team Roster for consideration by the Commission.

The Commission shall be entitled to confirm whether or not the proposed Team Roster amendment is acceptable.

8.2.3 Contractor's Personnel

The bidder must propose a Team Roster with sufficient expertise to cover all services described in section 3.2.

Prior to the issuance of a FRD, as described in section 4, the Contractor is requested to propose to the Commission a list of staff (Software Team) that will be working under the FRD. This Software Team shall be selected from the Team Roster.

The Contractor shall ensure that each staff of the Team Roster:

1) is dedicated to the project during the development period (unless otherwise agreed); and
2) is not re-assigned from the project without the prior written consent of the Commission.

The Contractor shall satisfy the following mandatory requirements:

3) An established pre-screening process to identify suitable staff;
4) Provide reasonable evidence that the proposed Software Team is appropriately skilled and experienced to carry out the work plan;
5) Replacement of poor performing Software Team members or provision of 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, upon request by the Commission;
6) Establishment of an induction program to help new members of the Software Team become productive within a predefined period after the start of their assignment for the Commission. The duration of the period will be from one to three months depending on the type of service.

The Commission shall be entitled to confirm whether or not the proposed Software Team is acceptable.

The Commission reserves the right to seek an immediate replacement for any Software Team member, who is found unsuitable for the assigned tasks as determined by the Commission. In such cases, the Commission will request a replacement Contractor staff, with equal or better qualifications and experience, to complete the tasks. If no suitable replacement consultant can be agreed upon, the Commission reserves the right to terminate the assignment of the unsuitable 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.

8.2.4 Proficiency level

In its proposal, the Contractor shall provide three levels of staff proficiency, with a quote per person-day for each level:

7) Junior
8) Standard
9) Expert

The proficiency level of a member of the Team Roster shall be determined at the time when a project is initiated, and the Software Team is defined for that project. It shall be determined based on the expertise and level of experience of that member in the

task he/she is to perform under a given project (e.g., the same person may be considered "Expert" on one project, and "Standard" on another one). The proposed proficiency levels for each member of the Software Team are subject to the Commission's approval. If deemed necessary by the Commission, the Contractor may be requested to provide further evidence of the proficiency level of a Software Team member at any time during the project, and the Commission reserves the right to modify the proficiency level of a Software Team member.

8.2.5   Requirement for the Team Roster.

The following criteria must be fulfilled by the Team Roster as a whole (not by each member):

8.2.5.1 A university degree in Computer Science or another scientific/technical subject with a high computational content;

8.2.5.2   A minimum of 5 years of recent professional experience in developing applications of similar scope as mentioned in the section 3, using state of the art technologies;

8.2.5.3 A minimum of 2 years of recent professional experience in using a software versioning system, preferably Gitlab;

8.2.5.4   A minimum of 3 years of recent professional experience in working with at least one Agile methodology, and experience working in an Agile framework;

8.2.5.5   A minimum of five (5) or more years of experience, providing software maintenance and support services for complex and custom software systems;

8.2.5.6   A minimum of 2 years of recent professional experience in working with Linux operating systems and TCP/IP;

8.2.5.7   A minimum of 2 or more years of recent professional experience in working with Fortran, C, C++, Java, Perl, Python, and UNIX/Linux shell scripting languages, APIs, SQL and database programming, ideally using Oracle and/or PostgreSQL databases, experience designing data access layers and data models for an application;

8.2.5.8   A minimum of 2 years of recent professional experience in working with the Public Key Cryptography Standards, PKCS#11, PKCS#12, API and OpenSSL libraries, Apache, Docker runtime, and container orchestration parametrisation;

8.2.5.9   A minimum of 3 years of recent professional experience in working with object-oriented development and design patterns, exposure to project management methodologies and incremental software development techniques;

8.2.5.10 A minimum of 3 years of recent professional experience in the design and implementation of complex web portals / content management systems;

8.2.5.11 A minimum of 3 or more years of recent professional experience in working with all elements of the Software Development Lifecycle: Eliciting and documenting business

process flows, use cases, requirements, quality management plans, user acceptance testing, and end -user training;

8.2.5.12 A minimum of 2 or more years of recent professional experience working with, and understanding of, requirements definition and software system design methodologies Knowledge of web -based internet application development architectures;

8.2.5.13 At least one of the team roster should have university degree in Geophysics, Earthquake Science, or other similarly quantitative fields with experience in moment tensor inversion, waveform cross correlation, waveform modelling, and analysis of seismicity catalogues.

9. RISK MANAGEMENT

The Contractor shall update the risk assessment plan at the project's commencement to identify potential risks that could impact the successful execution of the implementation activities outlined in the ToR. 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 project milestones or significant accomplishments.

Upon the project's satisfactory completion, 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 CTBTO, thereby contributing to the knowledge repository for forthcoming software development endeavours.

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).[1]

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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[1] 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.[1]

Name (print): _____   Signature: _____

Title/Position: _____

Place (City and Country): _____   Date: _____

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[1] https://www.un.org/Depts/ptd/about-us/un-supplier-code-conduct

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 ☐   Sole Agent ☐   Supplier ☐
    Other ☐ (please explain)

13. Type of Business/Services/Work: Engineering ☐   Civil Work ☐   Governmental Institution ☐
    Other ☐ (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.

17. List of Products/Services/Work offered:

Product/Service/Work #	Product/Service/Work Description

18. This section shall be __signed and stamped__ by an official legally authorized to enter into contracts on behalf of your organization:

Name: Title: Signature: Date:

Bank Details	**Beneficiary Details**
Bank Name:	Beneficiary Name: (exactly as stated on bank statements)
Bank Address:	IBAN: (if applicable)
Exact Account Holder Name:	Account number:
	SWIFT/BIC:
	ABA/Sort Code:

Additional Details (if applicable)

Correspondent bank:

Correspondent account number:

Correspondent SWIFT/BIC:

Tax Identification Number:

FOR CTBTO USE ONLY		
Evaluated By:	Initials	Date:
Updated By:	Initials	Date:
Remarks:		

*   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.