

Introduction: Fixed Call for Proposals for Czech ISS Experiments

Prague, 09/09/2024

Agenda



09:00 Introduction (CZ Delegation to ESA, Ministry of Transport)

09:05 Introduction and overview of the Call for Proposals, the astronaut mission

09:15 CfP Briefing part 1 – Tender package, evaluation process, schedule

10:40 Coffee break

11:00 CfP Briefing part 2 – The proposal template, How to write a good proposal?

12:30 Q&A

13:00 Lunch break

14:00 Group A/B 1to1 consultations

14:30 Break

14:40 Group A/B 1to1 consultations

15:30 Break

16:00 Group A/B 1to1 consultations

17:00 end

Disclaimer



This presentation material does not contain sufficient information to be used, in any way, in the context of the Fixed Call for Proposals **CfP/5-50100**.

This presentation is just to help understand in a simplified manner some of the Rules and Procedures associated with ESA procurements, in particular for this Call for Proposals.

Please ensure that your Proposal is compliant with the requirements contained in **the Fixed Call for Proposals CfP/5-50100 documentation** that will be published on esa-star Publication.

Summary of the presentation



- 1 The Czech Framework Project and overview of the Call for Proposals
- 2 ESA Tools Basics of ESA procurement
- 3 Tender Package for CfP on ISS Experiments
 - Cover Letter
 - Activity Description (generic SoW)
 - Draft Contract
 - Tendering Conditions
 - Proposal Template
- 4 The Tender Evaluation, Selection, Debriefing, Negotiations
- 5 Schedule
- 6 Questions?

Next presentation - How to write a good proposal

1 - The Czech Framework Project



In March 2017, ESA and the Czech Republic established a "Project Arrangement for a Framework project implementing ESA's support of space-related activities in the Czech Republic" for implementation of Space related activities in the Czech Republic with the following objectives:

- Development of Czech industry, universities and research centres and ensuring they work together, cooperate and build supply chains
- Alignment of space-related activities carried out in the Czech Republic with the programmes carried out by ESA
- Complement the Czech Republic's participation in the ESA optional programmes,
- Support the implementation of the new National Space Plan 2020-2025 of the Czech government

ESA role

Management of the technical and contractual aspects of the Framework project, according to ESA internal practices ensuring that, as far as possible, the results obtained by the activities are suitable to be integrated in ESA's future missions.

Czech Republic role

Programmatic and Financial responsibility over the programme, consequently taking all decisions on programmatic and financial questions taking into account recommendations from ESA.

1 - ISS experiment CFI overall timeline



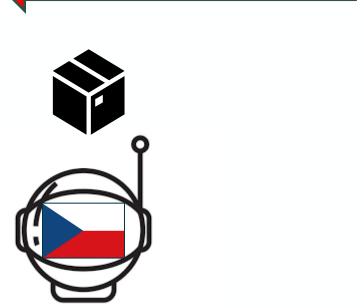
- 2024 national Call for Ideas



- 2024 ESA-CZ Call for Proposals



- 2028: Intended astronaut flight



1 - Role of ESA / NASA / Axiom



- An Axiom mission is Private Astronaut Mission (PAM) consisting of 4 crew, of which one
 is usually a professional astronaut from Axiom/NASA.
- The ESA project astronaut is considered as an IP astronaut (not as a "tourist")
- Upload on an Axiom is very limited, each customer can use up to 10 kg/35 litres.
 Conditioned Stowage and download is even more rare.
- The mission duration depends on general vehicle traffic, but it is expected to be between 8 to 15 days. In the first 2 days of the stay on the ISS, availability for utilisation (= experiments) is very limited.



Ax-3 crew including Swedish ESA reserve astronaut Markus Wandt (credits: Axiom)

- ESA/National Agency can use all the crew time from the project astronaut (but not from other crew members without further agreements). Expected crew time that is available to be dedicated to science in the range of 60 to 80 hours.
- ESA is handling the integration towards NASA and Axiom if ESA is contractually involved.
- There are very strict processes and deadlines from NASA and Axiom. The ESA teams will support the National teams to meet all deadlines, but there is little flexibility in case they are not met.







https://doing-business.sso.esa.int/

- Portal for access to the entire esa-star toolset, including associated ESA corporate applications like esa-p
- All applications are connected, making it easier for users to access the systems and retrieve information
- Optimised and supported for use with the Google Chrome browser





esa-star Registration (https://esastar-emr.sso.esa.int/)

Registration on ESA-STAR is a pre-requisite to do business with ESA

esa-star Publication (http://doing-business.sso.esa.int)

All Tender related documents can be found in esa-star Publication. Here you request the system to create a
 Bidder Restricted Area in ESA-STAR Tendering

esa-star Tendering (http://doing-business.sso.esa.int)

In the Bidder Restricted Area, you can request for clarifications and submit the proposal

esa-star esa-match (https://esastar-esamatch.sso.esa.int/)

Competences & Capabilities, find suitable tenders and entities for collaboration



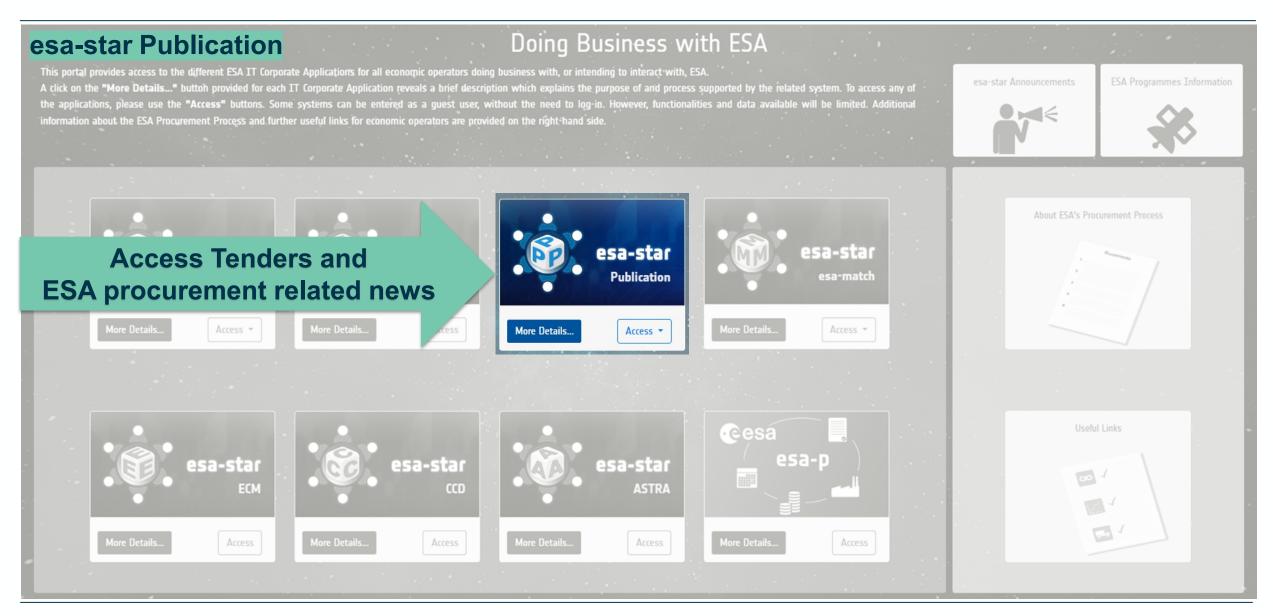
Further Instructions

<u>ESA - esa-star: open for business</u> https://esastar.sso.esa.int/Lists/List%20Training/Forms/AllItems.aspx

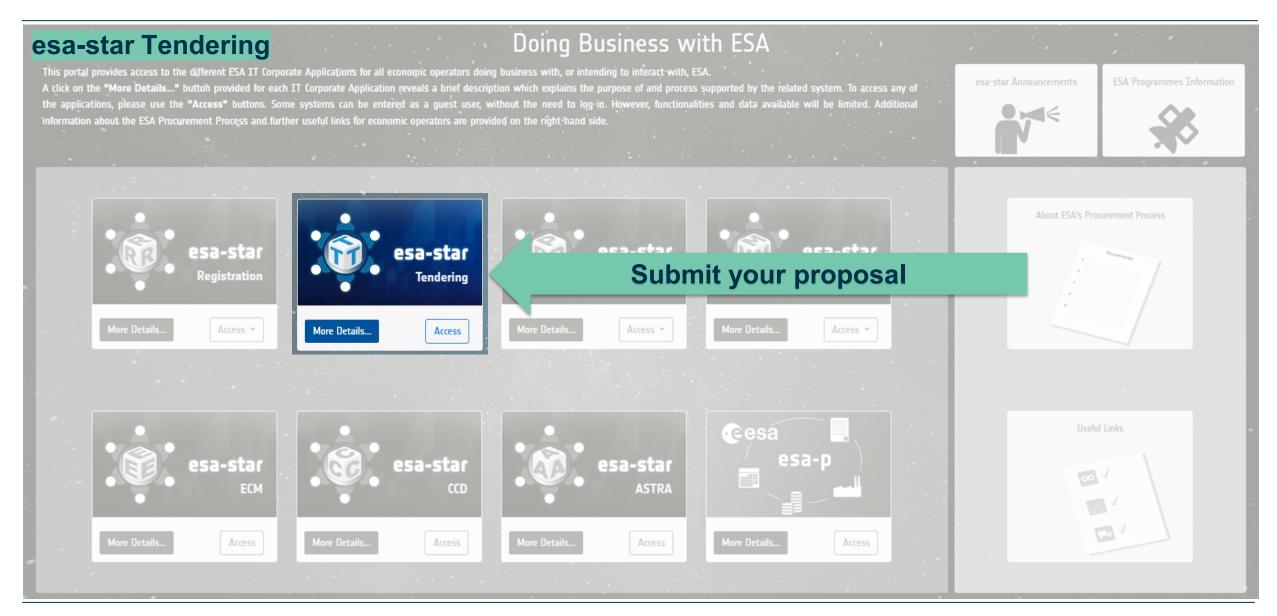




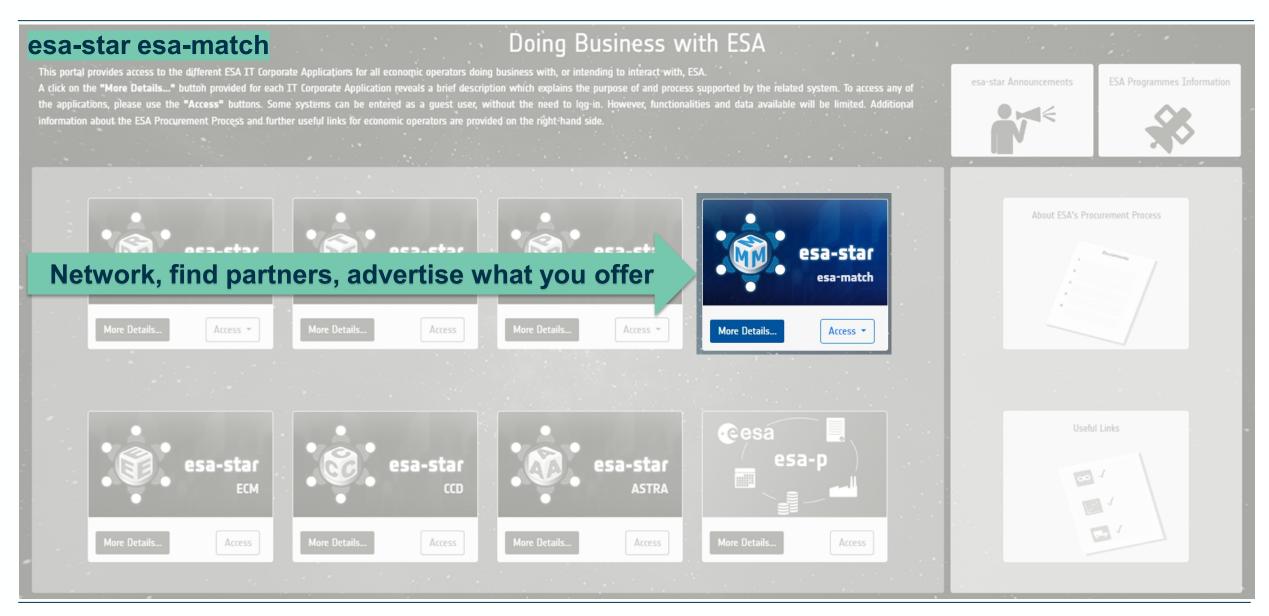












2 - Submission



Keep in mind:

- ✓ Submit BEFORE the deadline, SIGN the cover letter
- ✓ Collate cover letter + proposal + PSS forms (please!)



3. Tender Package for CfP on CZ ISS Experiments



3. Tender Package – Call Overview



Call overview

- Call for Proposal (CfP) reference is CfP/5-50100
- This is NOT a permanently open call!

Call for Proposals (CfP) published

16th September 2024

Submission Deadline

• 11th November 2024, 13:00 CET

Maximum budget

4,000,000 EUR (+ 6,000,000 TBC)

First contracts

April 2025

| | Cover Letter | | | | | | | | |
|---|-------------------------|----------------------------|-------------------------------|--------------------------------------|----------------------|--|--|--|--|
| • | Appendix 1 | Appendix 2 | Appendix 3 | Appendix 4 | Appendix 5 | | | | |
| | Activity Description | EXPRO Draft Contract | Standard Draft Contract | Tendering Conditions for EXPRO | Proposal Template | | | | |



| Cover Letter | | | | | |
|-------------------------|----------------------------|-------------------------------|--------------------------------------|----------------------|--|
| Appendix 1 | Appendix 2 | Appendix 3 | Appendix 4 | Appendix 5 | |
| Activity Description | EXPRO Draft Contract | Standard Draft Contract | Tendering Conditions for EXPRO | Proposal Template | |



The Cover Letter contains a number of essential features regarding the Call.

This includes:

- The name of the responsible Contracts Officer, Emilienne Hepp.
- Submission deadlines for evaluation
- All programmatic and price constraints
- Description of the process of evaluation and selection
- Evaluation criteria and weighting factors
- Instructions and restrictions for proposals submission





The Cover Letter indicates the formal conditions of submission.

This includes:

- The exact duration of the tendering period;
- The exact date, 11th November 2024;
- The exact time, 13:00 (CET / Amsterdam time zone) by which proposals must be submitted.

The Call is expected to be published on:

16th September 2024

To be found on:

ESA-star Tendering (https://esastar.sso.esa.int/)



See Section 2 of the Cover Letter

- The present Call for Proposals is addressed **only to Czech** companies (including SMEs) or academic and research organizations.
- Potential Tenderers are therefore requested to note that the Agency can only consider Proposals from legal entities registered in Czech Republic, which operate in accordance with the laws of Czech Republic.
- Tasks may be assigned to non-Czech entities within other ESA Member States, Associate Members and European Cooperating Sates as sub-contracts (or services).
 - Co-investigators or co-participants to the proposal do not necessarily need to be based in the Czech
 Republic but it is expected that most of the work is done in the Czech Republic. All work performed
 by non-Czech entities, whether subcontract or external service, shall be highlighted and fully described
 in the proposal.





What is the difference between a Subcontractor and External Services?

External services cover recurring services that need no development effort: e.g. hire of facilities, standard tests, computer services, manpower services (e.g. consultancy), plating of parts, services for procurement of HIREL parts, etc. The costs for these should be shown on the **PSS A2 form of the Prime Contractor** under Other Cost Elements Point 3.7 and further detailed on Exhibit A.

A Third Party should be involved as **subcontractor** (not as external services) when they are contributing to the development work of the project, when they are responsible for the realisation of **specific work packages**. To include a Third Party as Subcontractor also involves a firm commitment by the Third Party (contract between Prime contractor and Subcontractor) and is especially recommended when this Third Party is essential to carry out the activity and there are not multiple alternatives.



See Section 2 of the Cover Letter



There is a possible additional budget of **6,000,000 EUR** (six million Euro), which is dependant of additional funding to be provided by the time of projects selection.

The final selected activities, after successful negotiation, will result in Firm Fixed Price contracts that are 100% funded by the Czech Third-Party Framework Project.

3a. Key assumptions/requirements



The TRL of the proposed experiment shall be at least 5.

Each proposed experiment is expected to weigh less than 2 kg and have a volume of less than 7 litres. Larger could be exceptionally accepted if they still allow all other constraints to be met (budget and mass and number and volume) and if they can be delivered at least 9 months earlier and have exceptional relevance to the public.

Experiments needing cargo upload must be delivered before EOY 2027. Other packages shall be delivered during 2027. The flight is foreseen in 2028, but not confirmed by the flight provider yet.

It shall be noted that: -

- the total experimentation time of the astronaut for all implemented projects is expected to be 80 hours.
- The total experiment package, including all selected experiments, shall not weight more than a total of 15 kg:
 10 kg to be transported with the astronaut, 5 kg on an earlier cargo flight.
- The total experiment volume shall not be more than 50 litres: 35 litres to be transported with the astronaut, 15 litres of on an earlier cargo flight.

TRL Levels Summary



ECCS-E-AS-11C Space Engineering:

- (1) Basic principles observed and reported
- 2 Technology concept and/or application formulated
 Analytical and experimental critical function and/or
- Analytical and experimental critical function and/or characteristic proof-of-concept
- Component and/or breadboard functional verification in laboratory environment
- Component and/or breadboard critical function verification in a relevant environment
- Model demonstrating the critical functions of the element in a relevant environment
- Model demonstrating the element performance for the operational environment
- Actual system completed and accepted for flight ("flight qualified")
- Actual system "flight proven" through successful mission operations

For micro-g Experiments:

Theoretical, numerical model

Experiment concept formulated

Experiment concept demonstrated by e.g. analytical model

Demonstration of critical elements of the experiment in e.g. laboratory model

Demonstration of critical elements of the experiment in e.g. Parabolic Flight

Demonstration of the functioning of a model of the experiment in e.g. Parabolic Flight

Demonstration of the performance of a model of the experiment in e.g. Parabolic Flight

Payload/experiment has been designed and built, design has successfully undergone qualification campaing

Reflight or similar. Payload/experiment has already successfully flown on similar missions

3a. Key assumptions/requirements



The selection of a project does not guarantee a flight, only readiness for a flight. A final selection for flight will be made close to flight time and will depend on the actual astronaut flight organisation, the final mass and volume budgets available to that astronaut and the finances available at that time. Your proposal shall nevertheless include the delivery of a flight ready experiment and the definition and costing for the execution of the experiment and any 'post launch' work.



Only one experiment package shall be included in a single proposal. The proposed experiment shall fall in either of the two categories:

- Education and Outreach: Education and outreach activities use the fascination and the incredible knowledge generated by Europe's unique space programme for the education and the benefit of the younger generation from early age to early professional levels and for the growth of society at large. Education activities are an integral and highly inspirational part of ESA astronaut missions to the International Space Station, previously including experiments with dedicated payloads, demonstrations, scripted videos, and imagery.
- and Science and Technology: Investigations that align with ESA's exploration programme in the area of
 exploration focused or exploration enabling science (e.g. Human Research, Biology and Astrobiology, Physical
 Sciences) or with exploration preparation research and technology (life support systems in isolated
 environments, waste & recycling, energy efficiency, mobility and transport, AI applied to challenging
 environments).



See Section 4 of the Cover Letter

Please ensure that your tender **complies with the following essential requirements**: You are required to clearly state that you **accept all terms and conditions** stated in the documents expected to form together the Contract (ref. paragraph 9 of the Cover Letter of the Proposal Template).

- Your tender is valid during a period of six (6) months from the time limit for tender submission.
- The total number of pages for the proposal shall not exceed 40. These 40 pages exclude the Cover Letter, the PSS forms and Annexes (if any).
- In "esa-star", the submission shall contain four separate documents:
 - Document 1: The signed Cover Letter;
 - Document 2: **One single file** collating the signed Cover Letter, the proposal, the signed PSS forms and Annexes, if any.
 - Document 3: CVs
 - Documents 4: Completed Draft Contract



See Section 4 of the Cover Letter

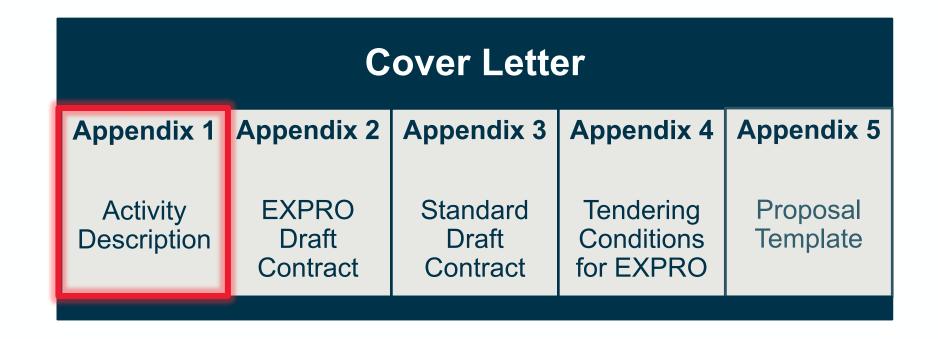
The number of proposals per Tenderer (as prime contractor) shall be restricted to a maximum of 2 (two) independent and unrelated proposals.



Regarding the maximum number of proposals to be submitted, only the Prime Contractor of the proposal will be considered as Tenderer.

In the case of a university or research organisation, the faculties, departments or institutes can be considered as separate tendering entities (Business Unit).







1.4 Background and Objective(s)

1.4.1 Background

The scope of this document is to define the tasks, responsibilities, and deliverables that the Contractor shall undertake to perform requirement assessment, design elaboration up to the Qualification & Acceptance Review (QAR) of the proposed payload.

The Contractor is fully responsible for the implementation of a programme of work that ensures compliance of all contract deliverables with the contract baseline requirements.

The Contractor shall ensure the delivery of all deliverable items to ESA in accordance with the contractual milestone dates. ESA will monitor the progress of this work, principally through the review of Contractor's documents, the holding of meetings and reviews.

1.4.2 Objective(s) of the Activity

The activity shall develop an ISS experiment payload.

The payload shall be developed, designed, manufactured, tested and up to flight readiness. It is intended to be accommodated aboard ISS in Columbus for the on-board operation.

1.4.3 PA Grade Definition

The Payload, including all additional deliverable items, such as spares and on-orbit support equipment, shall be regarded as Grade B, as defined in [AD05] Section 1.2.

[AD05] Product Assurance and Safety Requirements for ISS Pressurized Payloads



2. WORK TO BE PERFORMED

2.1. Work Logic

The work shall be organized in 4 technical tasks as follows:

- Task 1: conduct a requirements analysis and design the experiment accordingly considering the [AD01] and Interfaces as for [AD02, AD04] as part of the System Requirements Review (SRR).
- Task 2: Manufacturing and testing of subsystem hardware/software as Engineering Model (EM) to support the **Manufacturing Readiness**Review (MRR) and representative of the Proto-Flight Model (PFM) for the relevant subsystem qualification as need. Procurement of the Commercial off the shelf (COTS) components.
- Task 3: Manufacture the PFM hardware for the environment, performance, and interface tests. Complete all tests on the flight equipment.
 Make availability of all deliverable items including software products, required Data Package elements and transport containments (ground and flight). Support the Qualification Acceptance Review (QAR).
- Task 4: Support to Operations Preparation and Execution. Support the activities related to the Operations Preparation and Execution. These activities run mainly in parallel with the development but are not necessarily included in the development tasks. The activities will be carried out in collaboration with the ESA's entities responsible for the Operations (Columbus Control Centre, USOCs, Columbus Flight control team, etc.)

[AD01] Application Requirements Document (ARD) or System Requirements Document (SRD)
[AD02] COLUMBUS Pressurised Payload Interface Requirements Document + IRNs
[AD04] Pressurized Payloads Interface Requirements Document



The **Application Requirements Document (ARD)** typically contains a description of the experiment to be executed and the scientific requirements and objectives.

The corresponding **System Requirements Document (SRD)** is only developed for more complex payloads, and would contain a definition of the equipment or experiment payload that is needed to execute the experiment and which capabilities and performances the experiment payload needs to have to be suitable for the experiment.

It shall be noted that, depending on the proposed payload complexity, the need for a payload specification may be waived.

The **SRR** shall confirm the correct understanding and elaboration of the requirements applicable to the flight and ground configuration of the facility, and its GSE.

The **MRR** shall confirm that the hardware and integrated software fulfils the engineering, PA and safety requirements and release the PFM manufacturing.

The **QAR** shall confirm the completion of the qualification and verification against the requirements, and the readiness of the payload for operational use.



3.4. DELIVERABLE ITEMS

3.4.1. Model philosophy

The following shall be delivered:

- one Proto-Flight Model (PFM) / Flight Model (FM),
- one Ground Model (GM),
- one Training Model (TrM), only if required by ESA Training Team, as the Ground Model could also be used as TrM in some cases
- and relevant Ground Support Equipment (GSE), if required as per SRD.

In support of the FM development, the Contractor shall consider the development of an Engineering Model (EM), which is not a deliverable but may be upgraded/refurbished up to the Proto-Flight Model level.

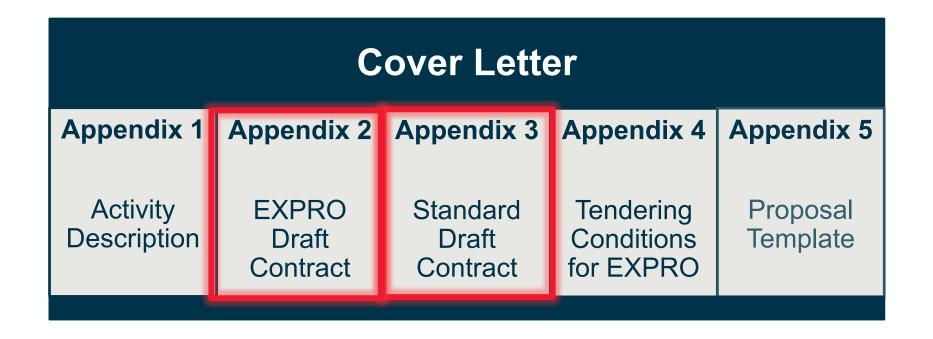
The EM will be built by the contractor to support the MRR and can be used as an Engineering Qualification Model (EQM) to qualify critical part of the design which could experience destructive or degradation performances after testing. The EM will be refurbished as GM.

Alternatively, the qualification can be done directly on the PFM, which is then refurbished into FM, if needed. The chosen approach is to be selected depending on the payload complexity. The Contractor can propose Qualification Models, Structural and Thermal Models for each of the Subsystems and Equipment that may be considered critical. Formal acceptance shall be performed and achieved on the PFM.

The proposed models shall be provided with functionality and timeliness to reduce programmatic risks in the construction of the FM.

3c. Tender Package – Draft Contract





3c. Tender Package – Draft Contract



Full compliance to terms and conditions are expected

→ Appendix 1 – EXPRO draft contract:

The draft Contract is based on the **EXPRO Contract** and the "relevant" parts of the ESA General Clauses & Conditions (ESA GC&C) are embedded in the Contract with some adaptations.

→ Appendix 2 – Standard draft contract:

Depending on the nature and/or value (≥ 2 000 000 Eur) of Type A activities, in case of Contract award, the Agency shall apply a Standard ESA Contract based on the General Clauses and Conditions (GCC ESA/REG/002, rev. 3) instead of an EXPRO Contract.

- The Clauses with an "Option" will be finalised at the negotiation stage
- > The Draft Contract is tailored for straightforward contracts, should the activity be more complex (e.g. flight hardware activities) the Contract will be adapted accordingly.

3c. Tender Package – Draft Contract



By DEFAULT

EXPRO Draft Contract

 Tendering Conditions for Express Procurement Procedure (EXPRO) apply ONLY IF requested by ESA at negotiation stage

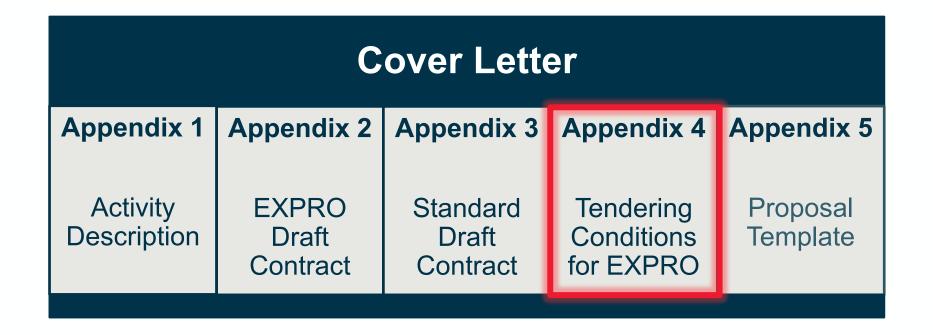
Standard Draft Contract

- General Clauses and Conditions (GCC) for ESA contracts apply
- Retrieve it in esa-star
 Publication: https://esastar-publication.sso.esa.int/suppo-rtingDocumentation/details/5



3d. Tender Package – Tender Conditions

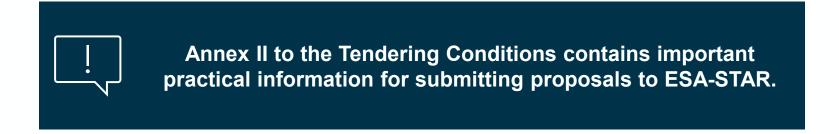




3d. Tender Package – Tender Conditions



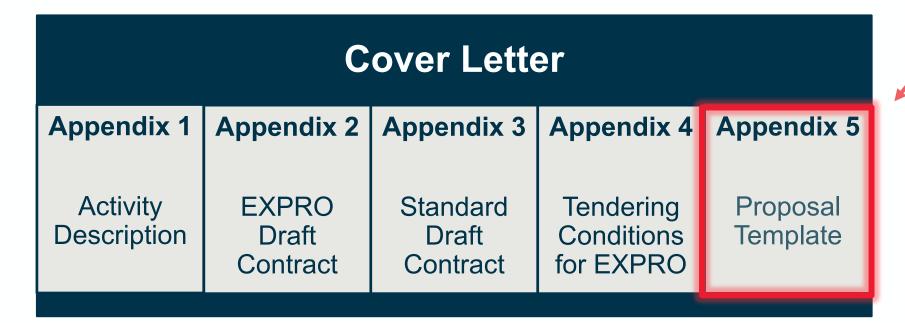
- FOR EXPRO ONLY: The Call for Proposals Tendering Conditions ("CfP/TC") apply instead of the ESA General Conditions of Tender.
- What type of information will you find?
 - Formal conditions for tendering (eligibility, negotiation, retention, etc.)
 - Compliance and Key Acceptance Factors
 - Communication with ESA
 - Proposal submission conditions
 - General considerations regarding esa-star
- The Proposal Template supports the compliance with the Special Conditions of Tender.



3d. Tender Package – Proposal Template



Tenderers SHALL use this template, nothing else!



3d. Tender Package – Proposal Template



Structure of the Proposal Template

- Cover Letter
 - MUST be signed.
- Proposal Template:
 - Technical and Application Part
 - Management Part
 - Financial Part
 - The PSS forms MUST be submitted by both the Tenderer (contractor) and his sub-contractors (one set each).
 - Please note that all PSS forms MUST be signed.
 - Contract Conditions Part

Latest PSS version shall be used (currently Issue 5)

3d. Tender Package – Proposal Template



IMPORTANT INFORMATION

- All red font paragraphs of the template are for your information Only.
 - The red font must be deleted.
- NO CHANGES in the structure, title headings, margins, font are allowed.
- When submitting to ESA-STAR, four documents shall be submitted:
 - The signed Cover Letter
 - One single file collating the signed Cover Letter, the proposal, the signed PSS forms and Annexes, if any.
 - CVs shall not be attached to the proposal but shall be submitted separately in the dedicated Curriculum Vitae folder in esa-star.
 - Completed Draft Contract shall not be attached to the proposal but shall be uploaded under the "Other" section of proposal elements on esa-star Tendering.
- The total number of pages for the proposal shall not exceed 40.
 - These 40 pages exclude the Cover Letter, the PSS forms and Annexes (if any).





4. The Tender Evaluation



1. Tendering Opening Board (TOB) meeting

- After the announced submission deadlines, there is a formal opening (i.e., TOB meeting) of the proposals that have been submitted
- The proposals with compliant cover letters will be accepted for evaluation by the TEB.
- The proposals with non-compliant cover letters will be rejected and not evaluated.

2. Tendering Evaluation Board (TEB) meeting

- The TEB is composed of ESA staff supported by ESA experts in the specific area of the proposal
- Statement of Non-Disclosure and Non-Interest Form is signed by all TEB members
- The TEB members independently assess proposals, and then the board convenes to discuss comments and mark the proposals. A TEB report is written containing all details of the collective evaluation

4. The Tender Evaluation



Evaluation Criteria

| No. | Criteria | Weighting Factors |
|-----|---|----------------------|
| 1 | Background and experience (related to the particular field concerned) of the company(ies) and staff, including adequacy of proposed facilities. | 10 |
| 2 | Completeness and clarity of the scope of work (including testing). Quality of engineering approach and discussion of problem areas. Quality and suitability of proposed programme of work. Compliance with flight experiment requirements, required tasks and deliverables. Credibility and compliance with the individual mass and volume targets. | 30 |
| 3 | Impact and Relevance (to the public) – especially in demonstrating the needs the public would have of space. Ease of understanding of the impact and relevance to the Public. Quality of the communication and outreach plan. International attention and building of Czech international reputation. Quality and novelty of the science (no repeat work). | 40 |
| 4 | Adequacy and credibility of the management approach, in particular the time dedication, planning and costing. Compliance with administrative tender conditions and acceptance of the contract conditions. | 20 |

4. The Tender Evaluation



Evaluation Marking

Each criteria is marked 0-100, then weighting factors are applied to get a final mark.

100 - **Perfect**

90 - Excellent

75 – Very Good

60 **– Good**

50 – **Fair**

40 – Barely acceptable

30 – Below acceptability

0 - Worthless

If any criteria scored below 40, the proposal is rejected and no overall mark calculated.

Examples:

| Criteria | WF | Proposal 1 | Proposal 2 | Proposal 3 |
|----------|------|-------------|---------------|-----------------|
| 1 | 40% | 60 (28) | 60 | 50 (20) |
| 2 | 30% | 50 (15) | 75 | 50 (15) |
| 3 | 25% | 60 (15) | 30 (!) | 50 (12.5) |
| 4 | 5% | 100 (5) | 90 | 60 (3) |
| TOTAL | 100% | 63 | - | 50.5 |
| | | Recommended | Rejected | Not Recommended |

4. The Tender Evaluation – Programmatic Review



- > A summary of the TEB report with the technical evaluation, ranking of proposals and recommendations is submitted to Czech Framework Project Committee. **No detailed financial information (e.g. hourly rates) will be disclosed.**
- > The Czech Framework Project Committee performs the programmatic review:
 - Takes into account ESA summary TEB,
 - > Considers programmatic priorities and national interests,
 - > Decides activities for implementation.
- > For the selected proposals, the Agency will :
 - Start the negotiation process to place a contract with the Tenderer on the basis of the submitted Proposal and the comments of the TEB;

4. Debriefing



See Section 11 of the Cover Letter

- The contact person of the Prime Contractor mentioned in the proposal (see point 7 in the Cover Letter of the Proposal Template) will be informed in writing of the result of the CfP after a decision has been taken.
- If the proposal has been unsuccessful, the Tenderer may request the nominated Agency's Contracts Officer to advise them of the reasons why the proposal has not been retained in a verbal debriefing (no written report).
- Any information will be limited to the Tenderer's own proposal.

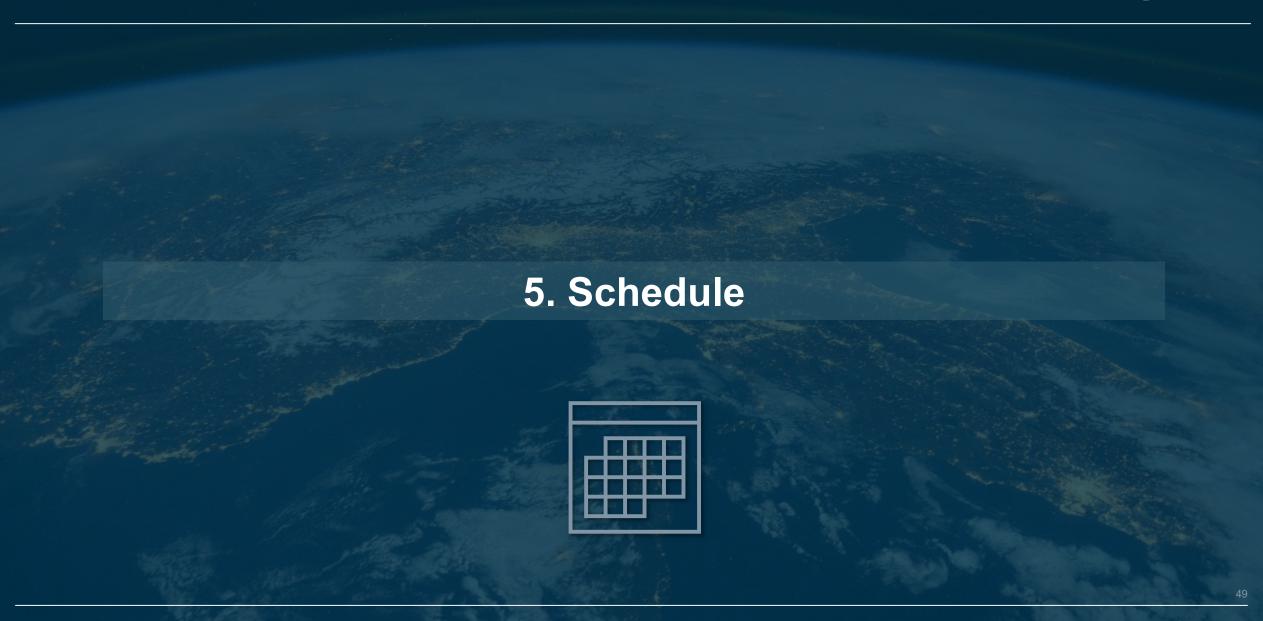
Important

Ask for a debriefing! It is the best way of learning why your proposal was not recommended and what you need to improve!

Suggestion

Even if your proposal was recommended, ask for a debriefing during the negotiation.





5. Schedule



| What | When | | |
|---------------------------------------|---|--|--|
| Publication in esa-star Publication | 16 th September 2024 | | |
| Deadline for submission of Proposals | 11 th November 2024, 13:00 hours (Amsterdam time zone) | | |
| Tender Evaluation Board (TEB) meeting | Mid January 2024 | | |
| Programmatic review | Mid February 2024 | | |
| First communication to Bidders | 4 weeks after the programmatic review | | |
| First contracts based on Proposals | April 2025 | | |

6. Questions?



For questions related to specific projects or issues use the one-on-one sessions. In the one-on-one sessions please **do not ask general questions** – they are very limited in time.



For issues **DIRECTLY** related to this Call, contact the **Contract Officer**:

Email: Emilienne.Hepp@.esa.int

For issues **NOT** related to this Call, feel free to contact:

Email: Stephane.Combes@esa.int