

Doing business with ESA

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ESA TEAM Poland Info Day

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- Doing Business with ESA (Competitive Bidding)
 - The ESA Procurement Policy and Process
 - The Structure Of An Invitation To Tender (ITT)
 - The Structure Of A Proposal
 - Writing A Good Technical Proposal
- Concluding Remarks

DISCLAIMER

This presentation material does not contain sufficient information to be used, in any way, in the context of the ESA TEAM ITT (Invitation-to-Tender).

This presentation is just to help understand, in a simplified manner, some of the Rules and Procedures associated with ESA procurements and ESA proposals.

Proposal templates can vary, however, some main elements are provided in this presentation to serve as an example and guidance. Do not copy any part of the examples given.

Please ensure that your Proposal is compliant with the requirements contained in the specific ITT documentation.

Note:

EMITS will be discontinued on the 18th March 2021 and replaced by esa-star Publication by the 23rd March 2021. Tenderers will be informed on EMITS and ESA websites and user manuals will be available.

Doing Business with ESA

The ESA Procurement Policy and Process



- **Procurement Policy** is approved by the **Industrial Policy Committee**;
- The main principle for placing of these contracts is **open competition**. The Agency also operates on the basis of **geographical return**, i.e. it invests in each Member State, through the industrial contracts for space programmes and activities, an amount more or less equivalent to each country's contribution.
- These rules are given or referred to in the ITT package and are designed to achieve objectives of:
 - **Technical Quality & value for money**
 - **Fairness and impartiality**
 - **Industrial Policy**

With respect to **technical quality**, it should be underlined that ESA:

➤ Is a **technically oriented** organisation and strives at achieving **technical excellence** by:

- Setting **detailed technical requirements**
- **Assessing** the proposed technical approach in every **detail**
- Deploying the highest level of **technical experts** in performing such assessment
- **Monitoring** the activity with the same level of expertise and,
- Accepting the deliverables against the above mentioned strict requirements

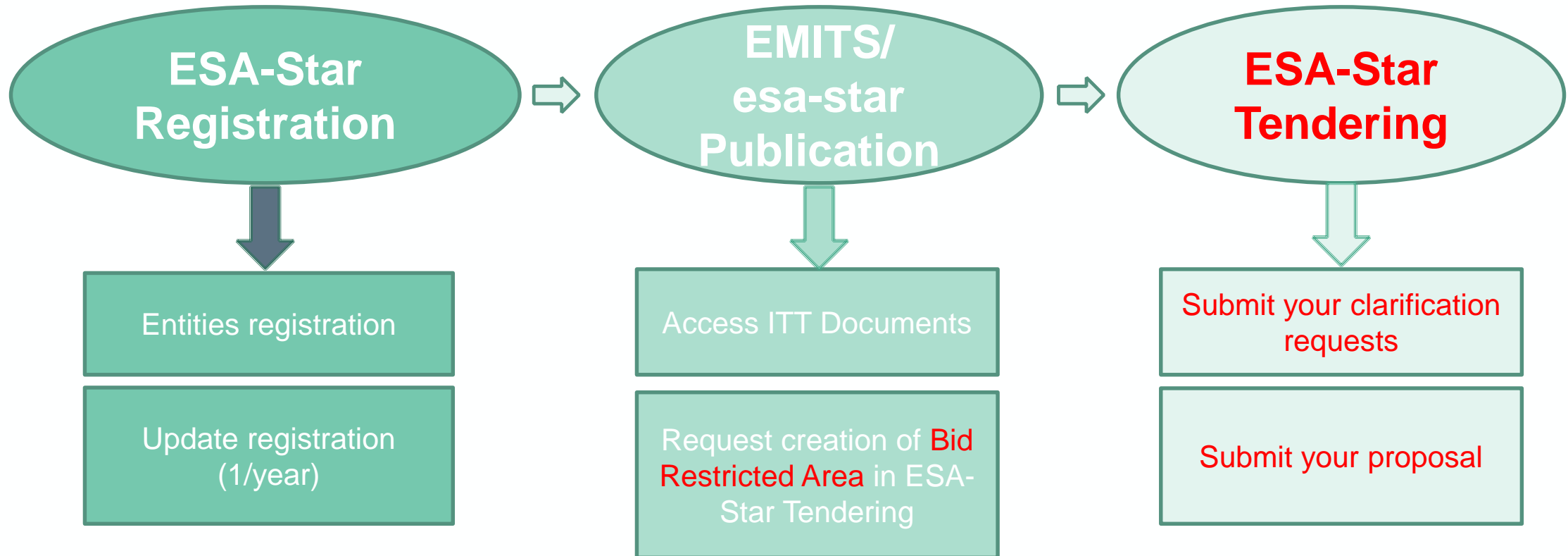
➤ When making the final recommendation the TEB considers “**value for money**”;

Price is consequently a factor of the competition and will be considered by the Agency when taking the award decision.

ESA Tools - Basics of ESA Procurement

Main tools supporting the procurement process:

- **ESA-STAR**: ESA's online System for **Registration and Tendering**
- **EMITS/esa-star Publication**: ESA's online system for publishing **Invitation-to-Tenders (ITT)**



ESA Tools - New portal: Doing Business with ESA



→ Providing access to all IT Corporate Applications



- **Training materials** and a **user manual** will be available online at the go-live of the system
- **Introductory sessions** for industry will be offered as webinars in mid to late April 2021 after the system is live

→ go-live of esa-match: 23 March 2021

- more information is available [here](#)
- watch the esa-match animation [here](#)

Doing Business with ESA

The Structure Of An Invitation To Tender (ITT)

- THE LETTER OF INVITATION
- THE STATEMENT OF WORK
- THE CONTRACT CONDITIONS
- THE TENDER CONDITIONS

accurately, in a computational efficient and reliable manner the right and disturbance observers) and on-line system identification technique which cannot be or would not need anymore to be reliably predicted or include the following tasks: 1) Review and select candidates which will perform a trade-off study between the various on-line model identification performance and system impact and issue recommendations

-
- *Letter of Invitation, 74188 Bytes*
 - *Statement of Work, 844782 Bytes*
 - *Contract Conditions, 212682 Bytes*
 - *Tender conditions, 181996 Bytes*

The Letter of Invitation introduces the activity, **and draws your attention on essential information/ requirements** such as:

- **Industrial Policy considerations** (special clauses for SMEs/ Research Institutes...);
- The maximum **budget**;
- The **formal conditions of submission**, i.e. duration of the tendering period, date and time for the electronic **upload** of the proposals etc.
- **ESA STAR/ registration** requirements
- **Key Acceptance Factors**

The Statement of Work is the **basis** on which tenderers are required to elaborate in order to prepare their proposals. It includes:

- An **introduction** and the **objectives** of the activity;
- **Applicable** and **applicable/reference** documents, list of **acronyms**;
- The “top level” **organisation** of the work (tasks, including input, work description, and output)
- The **technical requirements** (in **Appendix**)
- The specific requirements for Management, Reporting, Meetings and Deliverables;
- The expected **deliverables**, and the **duration** of the work

The Draft Contract is based on, and refers to the applicable version of the ESA **General Clauses and Conditions for ESA Contracts (GCC)**.

It is specifically tailored for the needs of the activity covered by the ITT;

- **THE DRAFT CONTRACT MAY CONTAIN CONDITIONS HAVING DIRECT BEARING ON THE WAY THE TECHNICAL PROPOSAL NEEDS TO BE STRUCTURED**

E.g. conditions regarding the use of Intellectual Property Rights

Mapped on the **General Conditions of Tender (GCT)** available on EMITS:

- PART 1: General Conditions for Participating in a Tender (covering the **eligibility requirements** to participate in an ESA tender);
- PART 2: General Conditions for the Presentation and Submission of Tender (covering the more **formal and legal aspects** of tenders to ensure **fair and open competition**);
- PART 3: General Conditions for the **structuring** and the **content** of a Tender;
- ANNEX: The Evaluation Criteria
 - A set of Evaluation Criteria, that summarise the aspects the Agency will take into consideration when evaluating proposals, is published with each ITT;
 - Each Evaluation Criterion refers to a specific (set of) ITT requirement(s) and points to a specific part of the proposal;
 - The Weighting Factors associated to each Evaluation Criterion are also published in the ITT;



Example of Evaluation Criteria and Weighting Factors used for R&D ITTs

- Background and experience (general and related to the particular field concerned) of the company(ies) and staff (including adequacy of proposed facilities) **20%**
 - **ESA TEAM Poland - particular practitioner experience related to technology brokerage and downstream space applications**
- Understanding of the requirements and objectives and discussion of problem areas **30%**
- Quality and suitability of proposed programme of work; adequacy of engineering approach **30%**
- Adequacy of management, costing and planning for the execution of the work **10%**
- Compliance with administrative tender conditions and acceptance of contract conditions **10%**

THE ITT- SPECIAL CONDITIONS OF TENDER

Effect of the Weighting Factors

NOTE: the arithmetical (unweighted) total average is normally not calculated and is shown here for comparison purposes only

- 100 Perfect
- 90 Excellent
- 75 Very Good
- 60 Good
- 50 Fair
- 40 Barely Acceptable
- 0 Worthless

	Marks	Total w/o WF	Marks	Weight	Total w WF
Background/ experience	75		75	20%	15
Understanding / problem areas	50		50	30%	15
Quality programme	60		60	30%	18
Man/ Cost/ Plan	90		90	10%	9
Contract	100		100	10%	10
		75			67

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The Structure Of THE PROPOSAL

THE STRUCTURE OF THE PROPOSAL

A proposal consists of the following, clearly divided volumes:

1. **Cover Letter**
2. **Technical Proposal**
3. **Management and Administrative Proposal**
4. **Implementation Proposal**
5. **Financial Proposal**
6. **Contractual Proposal**

➤ The Cover Letter

It plays a key role when proposals are **initially screened for admission exclusively on the basis of its content**. As specified in the General and in the Special Conditions for Tender, the letter should as a minimum include the following general information:

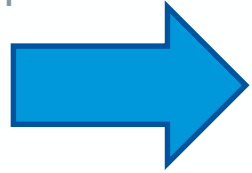
- The **names** of the authors;
- The **contact details** of the author/responsible for communications;
- A list of **subcontractors**, if applicable;
- The recapitulation of the **quoted price and price type**, including a breakdown by subcontractor, if applicable;

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The Structure Of THE PROPOSAL

THE TECHNICAL PROPOSAL

This presentation addresses technical proposals for **R&D/technology** contracts



Not including specific requirements and constraints applicable to flight hardware proposals

Writing a good proposal is (a little bit) like cooking:

- Read the recipe very carefully and several times, paying attention to all details / not missing important information
- Use the best and freshest ingredients you can get together with the right people, tools and facilities
- Be innovative in the details, but keep the structure of the recipe
- Ensure that the objective can be met within the allocated budget



PART 1 - What are the elements of a good technical proposal

General

Background and experience of the company and staff

Understanding of the requirements and objectives and discussion of problem areas

Quality/suitability of proposed programme of work and engineering approach

ESA TEAM Poland – business approach

PART 2 How to elaborate/write a good technical proposal

What can be done before publication of the ITT

A practical 4-steps approach

- Understanding the objectives and requirements
- Establishing a first WBS and the “who does what”
- Elaborating possible solutions and selecting baseline
- Elaborating the programme of work

What are the elements of a good technical proposal ?

A good technical part of a proposal:

- describes the **technical background and facilities** of the proposed consortium/team and the **key personnel** (including for all Subcontractors)
- demonstrates the **understanding of the objectives** and provides a critical (and constructive) **discussion on requirements and problem areas**
- describes clearly **what** ESA gets out of the activity, showing that it is in-line with the ESA objectives and requirements
- describes in full detail the **how** (programme of work)
- is **consistent** and **complete** (all evaluation criteria addressed, all Work Packages well identified, no inconsistencies between information provided and Work Packages descriptions)
- is reasonably easy to read, following in particular a logical structure



Keep in mind that the technical part has a specific weight of around **80% for the evaluation**

Criterion 1 - Background and experience (general and related to the particular field concerned) of company/ies and staff (including adequacy of proposed facilities)

- General experience of the company/ies
- Specific experience of the company/ies which is of relevance for the specific tasks and objectives of the ITT

COMPANY/IES

Ensure that the description provided is tailored for the ITT

- General background / experience / suitability of the proposed staff
- Specific background / experience / suitability of the proposed staff, i.e. of relevance for the specific tasks and objectives of the ITT

STAFF

Ensure to explicitly show how the experience maps precisely with what is needed

- Suitability of the proposed facilities

Covers testing or/and design office, computing facilities

Cross-check that all facilities described can support the development/testing plan

FACILITIES

- Others (if requested in the **STC**)

Criterion 2 - Understanding of the requirements and objectives and discussion of problem areas

- Critical assessment of the Statement of Work (in terms of reqts & objectives)
Demonstrate your understanding of the objectives. Review each requirement and assess the ones that are very/too challenging and are driving the design. You should also complete/add requirements if needed

REVIEW
REQTS & OBJ.

- Overview of the technical context / current state of the art
Important to highlight / demonstrate understanding of what is currently missing & what this R&D activity will address (the “new” part)

STATE OF
THE ART

- Trade- offs / requirement limitations / constraints / problem areas
Identify problem areas and mitigation measures. Note: This is R&D and it is expected that challenging problems have to be solved!
- Discussion on various alternatives available & identification of possible concepts
- Others (if requested in the **STC**)

PROBLEM AREAS,
ALTERNATIVES
& PRELIMINARY
TRADE-OFFS



Work criterion 2 => Key input for work criterion 3

Criterion 2 - Understanding of the requirements and objectives and discussion of problem areas

Focus on the discussion/review of requirements (fictional example)

REQUIREMENT REFERENCE (SoW)	COMMENTS	(MAJOR) DESIGN DRIVERS
PERFORMANCE RELATED		
PF1	The required performance is challenging but feasible on the basis of the heritage and heat transport capability of products we have developed during our TEMX project. We could already achieve 90% of what is required by ESA. The foreseen introduction of a heat switch will in principle optimise the heat flow management and ensure that the missing 10% are obtained. However, we can only commit by design/analysis for 95% and the 100% would have to be confirmed with final tests	Yes
PF2	It is understood that the system must be able to perform in SAFE mode with a reduced performance of 1% of the nominal value. On the basis of state-of-the-art technologies, this requirement presents no particular difficulties and will be achievable independently on the basic solutions selected	No
PF3	We consider it needed to adapt the requirement PF1 in the particular case of extreme temperatures superior to 200degC. Indeed, in this case, the performance required would not be enough to cool down the HEX system. We thus propose to push further the performance by an additional 30% at higher temperatures (> 200degC). We are very confident that this will be achieved without adapting our design and this is thus not considered a major design driver. It should also be noted that the concerns expressed above (PF1) are irrelevant for very high temperatures as demonstrated by our system-level thermal analysis provided in section 1.2 of the proposal	No
ENVIRONMENTAL RELATED		
EV1	The requirement specifies a lowest operational temperature of -100degC. We agree with this because the lower the temperature will be, the best the performance (PF1) will be (reduction of parasitics). This is clearly a major design driver. Note that some cryo-based solutions might even allow to go as low as -150degC and increase further the performance by a factor TBD	Yes
VERIFICATION RELATED		
VR1	We have state-of-the-art facilities to test the mounting structure. However, we consider the requirement in terms of shocks to be extremely challenging. It was proven on the past ESA project AMADEUS, which has similarities, that the shock level is at least 3 times inferior. If the requirement cannot be changed, then a specific protection would be needed and this has a major impact on the design and on the heat flow distribution	Yes
VR2	The verification by analysis of the thermal response of the mounting structure will be performed and it is not considered as a major design driver	No

Criterion 3 - Quality and suitability of proposed programme of work; Adequacy of engineering approach

- Selected baseline (based on criterion 2) and its detailed description (specifications, work logic, WBS and WP's)

The selected baseline should be clear and unambiguous

Transparency and consistency of the information provided are key

BASELINE

- Compliance matrix with comments

An absolute “must do” that will allow to easily trace how the proposed design/solution is fully/partially/non compliant with the requirements as they were specified in the SoW, then iterated by the bidder (criterion 2)

Also consider providing a verification matrix for each requirement

COMPLIANCE

- Credibility of the proposal (including back-up plan)

What evidence is there that it will work? “What if” a problem area cannot be tackled? Can a backup plan be established on the basis of one the alternative concepts studied/traded-off (criterion 2)

**RISKS MITIGATION
& BACK-UP's?**

- Completeness, including deliverables

DELIVERABLES

- Others (if requested in the **STC**)

Criterion 3 - Quality and suitability of proposed programme of work; Adequacy of engineering approach

Focus on the technical compliance matrix (fictional example)

REQUIREMENT REFERENCE	COMPLIANCE	REMARKS
PF1	Partially Compliant	As previously stated we commit for 95% of the performance and we are confident that we can achieve the 100%
PF2	Compliant	
PF3	Compliant	This is not required by the Agency. However, our solution will be fully compliant with this requirement
EV1	Compliant	
VR1	Non Compliant / Compliant with 50% reduction	At this stage, we cannot confirm compliance with this requirement which is extremely challenging. We consider that the shock level must be reduced by a factor 50% to be in-line with the application. In such case, we can be compliant
VR2	Compliant	

Points that will be noted during the evaluation:

- Statement on PF1 is consistent with the previous discussion. It is a PC so not ideal but could maybe be accepted (this will depend on the context/product etc.)
- Statement on PF3 is a confirmation that the additional requirement is identified and is also part of the baseline. This is positive
- Discussion on extending the temperature range compliance (EV1) has not led to additional requirements so will simply not be considered as relevant (neutral for the evaluation)
- Statement on VR1 is not fully consistent with the previous discussion. A specific protection had been mentioned and seems to not be part of the baseline. This creates doubts/inconsistencies, also because this is a major design driver. This will have a negative impact for the evaluation

Criterion 3 - Quality and suitability of proposed programme of work; Adequacy of engineering approach



Focus on the verification matrix (fictional example)

REQUIREMENT REFERENCE	COMPLIANCE AS PER TECHNICAL COMPLIANCE MATRIX	VERIFICATION METHOD (test, analysis, review of design, inspection)
PF1	Partially Compliant	Review of design
PF2	Compliant	Analysis
PF3	Compliant	Review of design
EV1	Compliant	Test
VR1	Non Compliance / Compliant with 50% reduction	Test
VR2	Compliant	Analysis (with tool SuperTherm)

Points that will be noted during the evaluation:

- PF1 and PF3 would be most likely be required to be verified by test. Besides this, a review of design would not allow to address the possible compliance for PF1. This will be judged negatively
- PF2 is probably to be verified by test (less of an issue because this is not a demanding requirement)

Note that the technical compliance and verification matrixes can also be merged into one single matrix



Summary of the “WHAT”

COMPANY/IES (general and specific)

STAFF (general and specific)

FACILITIES

REVIEW & ITERATION OBJECTIVES + REQUIREMENTS

(for the review of requirements – see slide Criterion #2)

STATE OF THE ART

PROBLEM AREAS, ALTERNATIVES & PRELIMINARY TRADE-OFFS

BASELINE

COMPLIANCE

(for the technical compliance and verification matrixes – slides Criterion #3)

RISKS MITIGATION & BACK-UP's?

DELIVERABLES

+ PAY ALSO PARTICULAR ATTENTION TO STC

How to elaborate/write a good technical proposal?

What can be done before publication of the ITT

Prepare with preliminary work and team formation

- Assess the company (previous / on-going) background / internal activities / studies that are relevant for the ITT
- If necessary, launch an internal study to assess possible trade-off and technical solutions for the intended ITT
 - *Keep in mind that you will be assessed at proposal level on the technical baseline proposed but also on its credibility. This might require some technical work that can be started early in the process*
- Identify aspects for which other entities might need to be involved
Establish role in a possible consortium (prime, subcontractor), depending on expertise, procurement policy etc.

ITT published – Step 1

Understanding the objectives and requirements

- Read all ITT documents and focus on the **SOW**
- Understand the **objectives** in the SOW → **final goal**
- Process/review the functional and technical **requirements specification** and the expected **deliverables**
- Assess which **requirements are driving the design**
- Assess the **main challenges/problem areas**
- Assess the impact of applicable standards e.g. **ECSS**
- Assess how the activity fits in a global picture e.g. how is the TRL level fitting in an overall technology development up to full qualification?

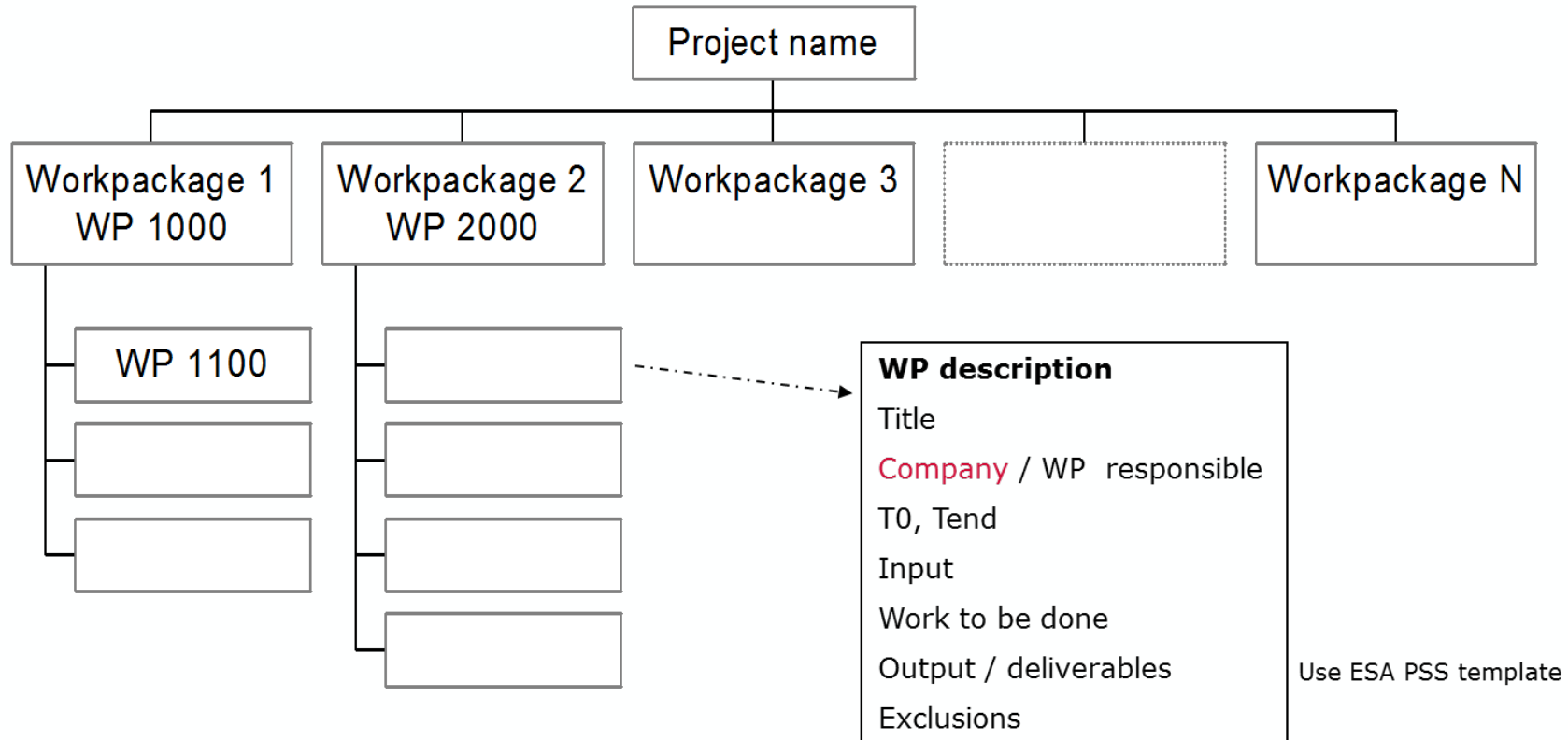
Statement of Work (SOW)



ITT published – Step 2

Establishing a first WBS and the “who does what”

- Create a first **Work Breakdown Structure** (WBS)
i.e. tasks to be done, possible distribution amongst prime and Subcontractors

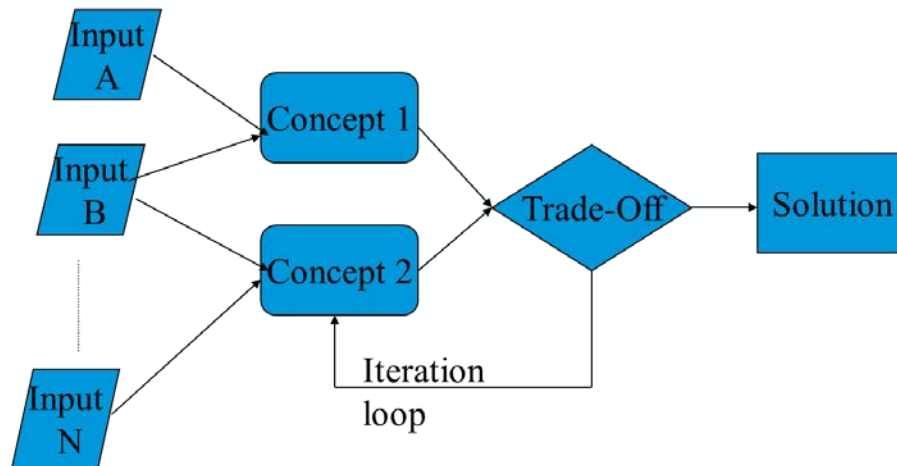


Unless considered inappropriate, it is convenient to reflect best in the proposal
the logic defined in the SOW

ITT published – Step 3

Elaborating possible solutions and selecting baseline

- Review and iterate further on the requirements
- Develop solutions in teamwork (including Subcontractors)
Brainstorming, trade-off, 1st iteration where required
- Check and trace compliance of possible solutions with technical requirements – Record in compliance matrix, verification matrix



ITT published – Step 4

Elaborating the programme of work

- Focus on specified tasks/WPs and technical requirements
- Check availability of required skills in company/team
- Check availability of facilities in company/team
- Define clear tasks/WPs for Subcontractors
Built up internal/external proposal/study team (technical part)
- Define study logic for activity
- Establish schedule for proposal
- Consolidate compliance and verification matrixes
- Once completed, verify consistency with work performed in previous steps (iterative approach)



To be avoided

- Pure repetition of the SOW (e.g. no review of objectives/requirements)
- Mixing aspects related to criteria 1, 2 and 3 (better have 3 separate sections in the proposal, also to facilitate the evaluation)
- Lengthy philosophical considerations
- Permanent complaints about budget limitations
- Inconsistent Subcontractor contributions
- Narrow single solution approach
- Copy/paste technical information from other sources without credits/reference
- Inconsistency between WBS / WPD and technical description
- Inconsistency between compliance matrix and technical description
- Inconsistency between technical proposal and management & financial aspects (e.g. work proposed does not fit man-hours in PSS,...)



Final check list

- ✓ Is objective clearly reflected?
 - ✓ Is technical discussion complete and consistent?
 - ✓ Is there a clear proposed baseline in the technical description?
 - ✓ Is there a technical compliance matrix (up to date with the baseline and programme of work)?
 - ✓ Are the work packages in line with the technical part?
 - ✓ Is it consistent with the management & financial proposal?
 - ✓ Have all STC related to the technical part been addressed?
- Check readability / understanding with persons not involved in proposal activity
 - Do not forget to mention the “obvious” (for you, not for the TEB)
 - Apply evaluation criteria (1 to 3) and make your own judgment

Doing Business with ESA

The Structure Of THE PROPOSAL continued

➤ The Management & Administrative Proposal

- **Management** Plan, policies and procedures;
- Discussion/ **compliance** to the ESA's Management requirements;
- **Organisation** and **rationale** for the bidding team;
- (Relevant) **background** and **experience** of the companies/ key personnel;
- Overall organisation of the company/ies, including the **position of the proposed team** within the organisation;
- Key personnel, their experience, functions and **time dedication**;
- **CVs**

➤ The Implementation Proposal

- **Facilities** to be used during the execution of the work;
- **Work Breakdown Structure** and **Work Package Descriptions**;
- Detailed **Meeting** and **Review** Plan;
- **Planning** information, including a **bar chart** covering the execution of the Work Packages, the major milestones, meetings and reviews and highlighting items, if any, which are on the activity's **critical path**.
- List of **deliverable** items.

➤ The Financial Proposal

- Overall **pricing** information, including price type, total price and **price breakdown** by phase (if applicable) and by company (if subcontractors are proposed);
- Cost **breakdown** information using the standard **PSS** forms (for each company, for the total of the activity and for each contractual phase, if any);
- The proposed **Milestone Payment Plan**.
- The PSS forms

EVALUATION CRITERIA <mapping on the> PROPOSAL



Remember: “Each Evaluation Criterion refers to a specific (set of) ITT requirement(s) and points to a specific part of the proposal”.

Criterion	Proposal volume
Background and experience of companies and staff, facilities	Management & Administrative
Understanding of requirements and objectives, discussion of problem areas	Technical
Quality of programme of work, engineering approach	Technical, Implementation
Management, costing and planning	Management & Administrative, Financial
Administrative conditions, contract conditions	Contractual

Doing Business with ESA

Concluding Remarks

A few things to keep in mind - I

- Review EMITS **IITTs and ITTs** regularly;
 - EMITS permits to tailor user preferences e.g. setup automatic distribution options, specify the ITT for which you want to receive notifications...
- Do not hesitate to **contact ESA** if you have questions regarding planned ITTs (IITTs): this is allowed until the actual ITT is issued;
- Pay special attention to the **special clauses C1-C4** and also to announcements made on EMITS under “**Entities**”;
 - EMITS permits also to host Tender announcements of external companies e.g. in the frame of large procurements
- **Communicate your interest**, via EMITS, to participate in the corresponding ITTs;
- **Contact potential partners** identified via EMITS;

A few things to keep in mind - II

- Try to acquire and maintain an **up-to-date knowledge** of ESA's programmes, activities, organisation and methods of operation;
- Award of ESA contracts requires
 - High quality proposals;
 - **The tenderer's full attention, understanding and responsiveness to all of the ITT requirements (not only technical but also formal, administrative, legal, Industrial Policy, etc.)**
- request a **briefing** following an unsuccessful proposal submission: this will help to improve the quality of subsequent tenders;

A few things to keep in mind - III

- Take advantage of the various training courses for SMEs organised and supported by the ESA SME Office, such as:
 - R&D proposal writing training for SMEs (3 days)
 - Product Assurance in ESA projects (2 days)
 - EEE components procurement: different cost areas and their relevance (1 day)
 - Intellectual Property Rights and licensing agreements (1 day)
 - Rate calculation training course (1 day)
 - ECSS livestreams (online)
- Find further details on the ESA SME Portal

THANK YOU!

For more information visit the ESA Industry and SME Portals:

[www.esa.int/About Us/Business with ESA/How to do](http://www.esa.int/About_Us/Business_with_ESA/How_to_do)

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