# FEASIBILITY STUDY

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# COVER LETTER

The Cover Letter is provided as separate document.

# Study SUMMARY AND RATIONALE

## Background information

Study Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tenderer and contact points: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tenderer information: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subcontractors: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use case(s) addressed:

* Please indicate which use case(s) are you addressing? [Uses cases are listed and detailed in the Cover Letter (Paragraph 3 .2)]
* Please indicate which areas/site(s)/building(s)/monument(s) are you addressing? [Proposed Areas/sites/buildings/monument(s) are listed in Cover Letter Annex 1]

## Service Description and Rationale

Description of the service / product

Innovation / unique selling point with respect to what is available in the market:

What is the relevance to the thematic call objectives? Which use case do you propose to address? How?

The proposed service / product fits within the current business activities and mid-/long-term strategy of the consortium partners as follows:

Tenderer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subcontractor 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subcontractor x: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## 5G and Space Asset(s) / Space Technology and Rationale

1. 5G asset(s) / 5G technology envisaged for integration:

Provide information on the 5G asset(s) / technologies and/or foreseen features / capabilities for integration or investigation in the Feasibility Study.

1. Space asset(s) / space technology envisaged for integration: …

[Provide either information on the concrete space asset(s) / satellites / sensors / technologies foreseen for integration, or as minimum the presentation of a shortlist of space assets / satellites / sensors/ technologies subject for investigation in the Feasibility Study.]

1. Rationale for integration of the 5G and space asset(s) / space technology: … [Provide information why the space asset(s) / satellites / sensors/ technologies is considered necessary for integration with 5G assets and and what their expected added value in the proposed applications / services above other technologies is]
2. Purpose, areas and assets proposed for the Proof of Concept:

# Customers/users and service viability

## Targeted Business Model

A first draft of the targeted Business Model is presented below including explanations.

## Customer/Users Segments

The key customers / customer segments targeted by our service / product: are:

The potential customers / users involved in the study are:

**Following selection of the Outline Proposal the Agency may facilitate the discussion with the interested municipality(ies), as needed involved in the 5G for L’ART opportunity.**

Letter(s) of interest from the customer(s)/user(s) to be involved in the Feasibility Study are attached in Appendix 1 to this proposal.

The letter(s) indicate in the own words of these customer(s)/user(s) why they are interested, how they intend to contribute to the study and to which tasks, and what their interested beyond the feasibility study is in case that the study shows satisfactory results.

## Pains and Gains

The pains (e.g. problems) and gains (e.g. benefits) are:

The following table provides a summary overview of the involved customers/users and associated high level characterisation in relation to the target service(s)/product(s).

[If the product(s) is/are targeting a few important customers, each customer should be clearly identified. The importance of the customer in the target market should be indicated (eg approxmative share of the market represented by the cusromer, in terms of revenue or geographical presence or else). Add any supplementary text you feel is necessary to clarify the nature of your intended customers and to explain their main needs. Please note that the problems must be specific and show a detailed understanding of the customer pain. Possible examples: maintenance of water flow sensors takes a lot of time: the average call out time is 2 hours and total savings due to the service would be 200kEUR/year. Additionally the risk of flooding would be reduced (2 major incidents last year)].

|  |  |  |
| --- | --- | --- |
| **Customer/Customer Segment** | **Customer Problems/Needs** | **Representativeness for the Targeted Market** |
| …… | …… | ……… |
| …… | …… | ……… |
| …… | …… | ……… |

##

## Market Analysis

The market, its size and the geographical reach are: …

The initially targeted country(ies) is(are):

The targeted position of our service / product in the market is summarised in the matrix below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MARKETS** | **New (MN)** | **……….** | **……….** | **……….** |
| **Adjacent (MA)** | **……….** | **……….** | **……….** |
| **Existing (ME)** | **……….** | **……….** | **……….** |
|  | **Existing (PE)** | **Incremental (PI)** | **New (PN)** |
| **SERVICE / PRODUCT** |

## Value Proposition

The table below identifies the specific characteristics of our service / product that will address the previously-identified customer problems/needs and defines its value proposition, i.e. value that the product or service offers to its customers.

|  |  |
| --- | --- |
| **Customer Problem/Need** | **Value proposition** |
| …… | …… |
| …… | …… |
| …… | …… |

Explain the relevance of your value proposition to address user needs in the selected use case(s) and outline the expected benefits for the user communities.

## Competitive Landscape

Our key competitors and the nature of the competition are identified in the table below.

|  |  |  |
| --- | --- | --- |
| **Competitor** | **Characteristics** | **References** |
| ……… | ……… | ……… |
| ……… | ……… | ……… |
| ……… | ……… | ……… |

##

## Viability Success Factors

The most important issues influencing the viability of the service(s) / the critical success factors towards implementing of a sustainable service are:

|  |  |
| --- | --- |
| **Issue / success factor** | **Description** |
| ……… | ……… |
| ……… | ……… |
| ……… | ……… |

## Roadmap

The major milestones (timeline, technical, commercial, others) towards the successful implementation of an operational service (roll-out in the market) are the following:

|  |  |
| --- | --- |
| **Timeline** | **Subject of Roadmap Milestone** |
| ……… | ……… |
| ……… | ……… |
| mm/yyyy | Entry into Market |

##

## Project Team

The following diagram describes the team composition and their role in the study and in the commercial exploitation phase of the product / service The following table provides an overview of the positioning of the different consortium partners and key external actors together with their position in respect to the development and commercial exploitation of the proposed project.

|  |  |  |  |
| --- | --- | --- | --- |
| **Partner** | **Background and Experience** | **Role in the feasibility study** | **Role in commercial exploitation** |
| …… | …… | …… | …… |
| …… | …… | …… | …… |
| …… | …… | …… | …… |

The future service provider will be …

**[Please describe agreements you would have made to interact, during the lifetime of the study, with the companies involved in the pilot project defining the related use case. Please provide as Appendix to the Full Proposal the evidence of the agreement with the 5G terrestrial operator(s).]**

# TECHNICAL PROPOSAL

## System / Service Architecture

A high level block diagram of the system / service showing the key attributes and key building blocks and the main interfaces is provided in Figure 3.3.

## Study Logic

[In case that different tasks are proposed for Technical Phase 1 or in case that a study logic differing from the study logic as shown above and as introduced in Section 2.2 of the Management Requirements "MR" for Feasibility Studies is proposed, this needs to be duly justified.

If you have already all information related to a specific task, this task does not have to be repeated, but relevant proof has to be provided to the Agency.

Notwithstanding the above, the execution of a proof of concept in at least one relevant areas amongst those proposed in the Cover Letter-Annex 1, is mandatory. Additional proves of concepts in other regions can be proposed as part of the study, considering the relevance to the proposed user(s)/customer(s).]

## Study Tasks

The following subsections present the content of the Work Package Descriptions in explanatory form.

For each study task the following is presented:

1. the starting point for the work to be done,
2. the planned outcome(s) / target(s) of the individual tasks,
3. the critical elements of each task that will be subject for investigation (these are aspects that are also tracked in the risk register),
4. the work methodology and approach to reach the planned outcomes / results,
5. the planned interactions between the Tenderer and its Subcontractors and the user community in each task (where applicable)

[2 pages description per task are considered to be sufficient.

The information included here should be based on your current knowledge. If there are aspects which you do not know about, please, state so.

Please, make sure that especially the sections d) “Work Methodology and, Approach” for each task are clearly aligned with the task descriptions in the Work Package Descriptions!]

**D.3.1 Task 1: Customer/User Engagement and Value Proposition Definition**

1. Starting point:

[provide concrete information such as
- which contacts have been already established with stakeholders and customers/users relevant for the study, and to which level
- what do you already know about the operational scenarios, needs and demands of the customers/users which are involved in the study
- what do you already know about the limitations / constraints of the involved customers/users
- what do you already know about the value propositions / KPIs of the involved customers/users]

1. Planned outcome(s) / target(s):

[provide information on the basic questions that you want to have answered at the end of the feasibility study, e.g. regarding
- clear understanding of the level of interest of the involved users/customers
- clear understanding of the operational scenarios and user needs
- clear definition of the value proposition and KPIs of the involved customers/users
- clear understanding of the potential willingness to pay for the targeted service
- involvement of additional important/representative users/customers (which?) beyond the ones already involved]

1. Critical elements subject for investigation:

[provide concrete information on those aspects that you consider critical, e.g.
- access to the customers/users and their availability during the study
- their procurement processes and available budgets
- the interface requirements to existing operational systems / processes
- any critical / challenging aspect which is considered important for service implementation]

1. Work methodology and approach & planned interactions with user community:

[align this section with the task description of the related Work Package Description and provide concrete information on relevant points such as
- how you will engage with the customers/users during this task (e.g. workshops, individual interviews, questionnaires, regular meetings / oral communication
- how you will validate the findings with the customers/users]

- what are the agreements made with the Use Case owner to engage with the user]

**D.3.2 Task 2: Technical Feasibility Assessment**

1. Starting point:

[provide concrete information on relevant points, e.g.
- which services do you already provide which could be used as starting point
- which elements of the service provision chain do you already have in place
- which of the consortium partners plans to become the service provider for the resulting services
- which system / system elements / building blocks do already exist and what is their maturity level (e.g. breadboard, prototype, mature building block, COTS procurement)]
- have you already done some tests / proof of concepts

1. Planned outcome(s) / target(s):

[provide information on the basic questions that you want to have answered at the end of the feasibility study, e.g. regarding
- definition of the service provision chain
- definition of the service provider
- definition of the roles / functions of the consortium partners for the operational service
- definition of the system architecture
- identification and selection of the technologies to be integrated
- understanding of the maturity of these technologies and required enhancements / developments]

1. Critical elements subject for investigation:

[provide concrete information on those aspects that you consider critical, e.g.
- critical elements of the service provision chain which are not yet existing
- identification and involvement of potential service provider
- critical elements of the system / building blocks which are not yet existing and where the feasibility needs still to be proven,

- what are the critical elements presented in the Use Case that your study will tackle
- identification of single point failure (e.g. availability of space infrastructure, planned ground services]

1. Work methodology and approach:

[align this section with the task description of the related Work Package Description and provide concrete information on relevant points, e.g.
- how will you identify the elements of the end-to-end service provision chain (data collection, data processing, information creation, information distribution, customer front end)
- if not clear from the beginning, how and when will the future service provider be determined
- what do you intend to do to define the system architecture, define the major building blocks, identify the maturity level of technologies, trade off of new technologies, justify the technologies to be integrated, etc.]

1. Planned interactions between the Tenderer and its Subcontractors and the user community:

[provide concrete information on relevant points, e.g.
- will customers/uses be consulted for this task? If yes, which users, by whom, how and for what
- e.g. communication with involved users / customers to understand where the new services / system(s) have to interface with existing operational procedures / services / systems]

**D.3.3 Task 3: Viability Assessment**

1. Starting point:

[provide concrete information on relevant points, e.g.
- information from existing market investigations
- what are the existing business model(s) if any
- what are existing revenue streams from the involved customers/users (if any)
- what are the existing pricing schemes (if any)
- what information is known regarding non-economic aspects (e.g. regulatory, political)]

1. Planned outcome(s) / target(s):

[provide information on the basic questions that you want to have answered at the end of the feasibility study, e.g.
Business plan, specifically:
- cost (CAPEX, OPEX) analysis
- pricing models
- annual projection of profitability over a 3-5 years planning horizon
- confirmation that a profitable business exists
- information on most critical non-economic aspects and how to deal with them]

1. Critical elements subject for investigation:

[provide concrete information on relevant points, e.g.
- what do you consider as most critical for your business, e.g.
 . price sensitiveness of the users
 . identification of key market segments of the envisaged service/application and relevant strategy for targeting those segments
 . competitive offering and positioning
 . identify all of the relevant background IPR provided by the consortium partners along with any foreground IPR developed within the framework of the feasibility study, and present a well-defined strategy for its protection and use, including the purchase and/or licensing of other third-party technology and patents crucial to the development and operation of the system/service
 . certification aspects
- establishment of the service provision chain]

1. Work methodology and approach:

[align this section with the task description of the related Work Package Description and provide concrete information on relevant points, e.g.
- what methodology will be used to produce the market analysis (e.g. desk top research, communication with users)
- what methodology will be used to quantify CAPEX and OPEX (e.g. bottom up aggregation of key cost element based on level of business activity and technical elements obtained from the proof of concept)
- how will the business model / business plan defined (also in coordination with the other consortium partners)]

1. Planned interactions between the Tenderer and its Subcontractors and the user community:

[provide concrete information on relevant points, e.g.
- typically it is rather unusual that business plans will be coordinated / published to future customers
- but some aspects might require the interaction, e.g. with respect to non-economic aspects]

**D.3.4 Task 4: Proof of Concept (mandatory)**

[The inclusion of a Proof of Concept (PoC) to be perfomed in at least one of the areas proposed in Annex 1-Cover Letter is mandatory. From experience of other feasibility studies it has proven to be of high value, as it significantly facilitates the discussions with and feedback from the involved customers/users on the service proposition. Additional proof(ves) of concepts in other regions can be proposed as part of the study, considering the relevance to the proposed user(s)/customer(s). The PoC(s) shall be aimed at demonstrating to the involved users/customers the added-value derived from the integration of 5G technologies and satellite assets and obtain their feedback

A Proof of Concept might be considered relevant to proof the feasibility of critical elements of the service / system which can be of technical or non-technical nature and which represent significant risks for further implementation, or to secure the further buy-in of potential users / customers.

The Proof of Concept can include analysis, simulations, mock-up, or what otherwise is deemed appropriate. However, it shall be based on a low effort approach, i.e. not require significant developments. (NB: the execution of an end-to-end validation demonstration in a pre-operational environment is subject for a Demonstration Project).

A PoC content preliminary definition (what, where, how long, involved customer(s)/user(s), etc.) needs to be provided within the proposal. This preliminary concept will be later subject to revision based on the results of study tasks 1, 2, and 3.]

1. Starting point:

[provide concrete information on relevant points, e.g.
- which technical / commercial aspects or elements have been proven / confirmed already in other activities
- which hardware / software / system elements exist already and will be subject for inclusion in the proof of concept
- if there is a need to rely on facilities of users, which facilities are available]

1. Planned outcome(s) / target(s):

[provide information on the basic questions that you want to have answered at the end of the Proof of Concept, e.g.
- what is the objective of the PoC (proof of feasibility / viability of what, engagement with which users, secure the buy in of users/customers for follow-on activities, etc.)
- which critical aspects are planned to be proven in the PoC (e.g. technical aspects, commercial aspects, operational aspects, user handling / friendliness, etc.)

1. Critical elements subject for investigation:

[provide concrete information on those aspects that you consider critical, e.g.
- what are the most important aspects for the PoC (technical, commercial, customer relationship, etc.]

1. Work methodology and approach:

[align this section with the task description of the related Work Package Description and provide concrete information on relevant points ,e.g.
- where is the PoC planned
- for how long
- what is planned to be done during the PoC
- who will be in charge of preparing / developing the PoC
- which customers/users will be involved]

1. Planned interactions between the Tenderer and its Subcontractors and the user community:

[provide concrete information on relevant points, e.g.
- when will the users/customers be involved
- how will they participate to the PoC
- how will they provide feedback]

1. Assets needed to perform the PoC:
For the Proof of concept in selected region(s), the 5G for L’ ART users will make available the assets listed in Annex 1 of the Cover Letter.

Please list here the assets you intend to use in the Proof of Concept. For each asset requested please provide a short description about how the asset requested will be used, for how long and for which purpose.

Please provide a confirmation that the conditions of the utilization of the proposed area(s)/site(s)/monument(s)/building(s) in the selected region are agreed between you and the relevant 5G for L’ ART user(s).

Please provide a confirmation that the conditions of the utilization of the needed 5G assets in the selected region are agreed between you and the relevant 5G operator(s).

**D.3.5 Task 5: Preparation for Service Implementation**

1. Starting point:

[provide concrete information on relevant points, e.g.
- do the targeted services fit into other services provided already by the consortium and for which a roadmap for market roll out is defined
- what is the vision of the consortium partners how to position the service / solution on the market (in which timeframe)
- is there a specific date where the service / solution need to be on the market (e.g. due to regulations, specific large projects offering a good market entrance, seasonal effects)]

1. Planned outcome(s) / target(s):

[provide information on the basic questions that you need to have solved in preparation of the next step (e.g. IAP Demonstration Project) provide concrete information on relevant points, e.g.
- securing involvement of customers willing to pay
- partnership agreements (IPR, know-how transfer)
- implementation timeline for market roll-out
- outline proposal for an IAP Demonstration Project]

1. Critical elements subject for investigation:

[provide concrete information on relevant points, e.g.
- partnership agreements
- securing the first customer
- timeline to market roll out
- securing co-funding for follow-on demo project]

1. Work methodology and approach:

[align this section with the task description of the related Work Package Description and provide concrete information on relevant points, e.g.
- what will be done in this task to achieve the outcome and how
- communication with partners, users, stakeholders
- who decides on the next steps
- awareness event to user / customer community]

1. Planned interactions between the Tenderer and its Subcontractors and the user community:

[provide concrete information on relevant points, e.g.
- information on outcome of feasibility study and next steps
- securing of co-funding / involvement of users/customers for next steps
- workshop, bilateral meetings, etc.]

## Technical and Non-Technical Risks

The major technical, operational and business related risks associated with the proposed activity and the associated mitigation plans are:

These risks are summarised in the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk Identifier** | **Description** | **Likelihood** | **Severity** | **Mitigation Actions** |
| ……… | ……… | low/medium/high | low/medium/high | ……… |
| ……… | ……… | low/medium/high | low/medium/high | ……… |
| ……… | ……… | low/medium/high | low/medium/high | ……… |

The risk register will be kept up to date during the execution of the feasibility study.

# Management and Administrative Proposal

## Description and Background Experience of the Company(ies)

Company information: …

[Present the company(ies) and their organisational structure including key company details such as ownership, turnover, number of employees, business lines, etc.]

Company background and experience …

[Describe the background of the companies and the relevant experience of your entity and any proposed Subcontractor(s) for the performance of the work, including the experience with respect to:

* the technologies subject for integration (space and non-space technologies),
* the application domain know-how,
* service provisioning expertise,
* business development know-how.

Please, avoid multi-pages information on everything that the company has done in the past.]

Relevant results achieved in other ESA contracts: …

[In case that any company of the bidding team has been involved in ESA contracts (including ESA programs other than ARTES) relevant for the targeted application, provide a summary description of the direct and indirect results achieved through such activities and the lessons learned.

If no such activities have been carried out before, please, state this explicitly.]

## Study Organisation and Study Management

Project team and project organisation: …

[Present the project team and the structure of the project organisation (organogram), and where it is proposed to subcontract part of the work, the structure of the industrial group.

Describe the lines of communication and reporting, including the involved users/stakeholders and ESA]

Rationale for proposed industrial organisation: …

[Present the rationale for the proposed industrial organisation, especially with view to the targeted future service provisioning.
In this respect, the involvement of a university or research organisation as study prime is considered to introduce additional challenges with respect to the further implementation of sustainable services (i.e. transfer of IPR and know-how to another entity after the study, co-funded demonstration project, operational service provision, etc.) and requires special justification.

Already in the feasibility study, the involvement of a potential service provider for the targeted services (bridging the last mile to the future customer) is considered relevant and strongly recommended. Involving such a service provider as study prime is considered a plus.]

Project management: …

[Present the management plans, policies and procedures including a description of the management control procedures that will be used to exercise control over the study and subcontractors (if any). Relevant is especially how often and how the consortium partners communicate and coordinate with each other.]

## Facilities

Access to space assets and space based services as well as to information resources: …

[Present the means of access to space assets (e.g. EO products / imagery, Satcom services, Satnav services) and information resources (such as libraries, databases, etc.), if these are required for the work proposed]

Facilities required for ‘Proof of Concept’ :…

[Describe especially all facilities which are proposed to be used for the ‘Proof of Concept’, including those facilities which are still to be developed/built and/or purchased, with a statement on whether the costs of developing/building/ purchasing the facility are to be directly or indirectly charged to the Contract. Modifications to existing facilities are also to be described. For this purpose facilities may include, as applicable, 5G assets, software, manufacturing equipment, test equipment, production and integration lines, service centres, as well as infrastructures hosted by the involved customers/users.]

## Key Personnel

[NB: Key personnel are defined as persons who, because of their individual qualifications and positions are proposed for the work and indicated as such in the tenderer's Organisation Breakdown Structure.

 As a minimum, each person assigned as Work Package Manager shall be nominated as Key Personnel, as well as a person with relevant business development expertise.

Key personnel should be proposed to one level below the study manager, both for the tenderer and any sub-contractors.
The provisions of Clause 9 of the GCC as amended in the Draft Contract shall apply to all key personnel]

The following key persons have been nominated for the feasibility study:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Organisation** | **Name of key person** | **Function inorganisation** | **Role infeasibility study** | **Involved in WPD No.- WP manager- Contributor** | **Timely involvement in WPDs:WPD + [mh]** | **Time allocationtotal [%]** |
| ……… | ……… | ……… | Study Manager | ……… | ……… | ……… |
| ……… | ……… | ……… | Business Developer | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… | ……… | ……… |

[Provide the average percentage of the total working time the key personnel will dedicate to the present activity, as well as the number of man-hours broken down per Work Package.

NB: The ‘viability analysis’ is typically considered an essential task. Therefore, adequate allocation of appropriate key personnel with relevant expertise will be thoroughly checked.]

The curricula vitae (CVs) for all key persons are presented in Appendix 2 to this proposal.

[Provide for each key person a comprehensive curriculum vitae, presenting in particular the work experience relevant for this study, a brief description of the person's present job and responsibilities, the position in the tenderer's organisation, and information on the person’s assignment and tasks in this study]

## Travel and Subsistence Plan

Travel and subsistence plan are summarised in the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Event** | **Company** | **Number of persons** | **Travel cost per person [€]** | **Subsistence cost per person [€]** | **Total cost per event [€]** |
| ……… | ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… | ……… |
| **TOTAL** |  |  |  |  | **………** |

[Present the travel and subsistence plan for each participating entity.

Take into account that the Negotiation Meeting should be attended by the Tenderer and as far as possible by all Subcontractors. Negotiation Meeting and Final Review will normally be held at the Agency’s premises (ESTEC or ECSAT).

The Progress Meeting (PM) is typically held at the contractor’s or customers’/users’ premises. The Business Case Review (BCR) is typically held at the Agency’s premises.]

# IMPLEMENTATION Proposal

## List of Items to be Delivered, to be Produced

**F.1.1 Documentation**

The documents that will be delivered during the study are summarised in the table below.

| **Name** | **Deliverable** | **Initial Submission** | **Updating** | **Final Submission** |
| --- | --- | --- | --- | --- |
| D1 | Customer Engagement and Value Proposition Definition | PM |  | BCR |
| D2 | Technical Feasibility Assessment | PM |  | BCR |
| D3 | Viability Assessment | PM |  | BCR |
| D4 | Proof of Concept | PM |  | BCR |
| D5 | Preparation for Service Implementation | FR |  | FR |
| PWP | Project Web Page | PM | BCR | FR |
| FREP | Final Report | FR |  | FR |
| FDP | Final Data Package | FR |  | FR |
| H/W | Hardware | FR |  | FR |
| S/W | Software | FR |  | FR |
| MOM | Minutes of Meetings | NM | every meeting | FR |
| MPR | Monthly Progress Report | KO + 1 month | every month | FR |
| BCS | Bar Chart Schedule | with the proposal | as necessary and at reviews | FR |
| RR | Risk Register | with the proposal | as necessary and at reviews | FR |
| Media | Media Relations | as necessary | as necessary | as necessary |
| CCD | Contract Closure Documentation | FR |  | FR |

NM: Negotiation Meeting PM: Progress Meeting

BCR: Business Case Review FR: Final Review

Each deliverable document will include a title page reporting the study name, the contract number, the title of the document, a reference identifier, the author(s) and related organisation(s), the date of issue and the revision number.

All deliverable documents will include a record of the document history, indicating in short for each document revision the corresponding date and the reason(s) for the revision.

All documentation will be delivered in electronic form, in MS Word or equivalent, with all pictures and tables embedded in the document. The documentation will be able to be printed and will allow the insertion of comments and track changes. Intermediate versions of the documents, before its final official release, shall be delivered in Track Changes.

All deliverable documents will be delivered using the Agency’s web-based project planning and collaboration tool. Documents will be delivered at least ten working days prior to the associated review.

**F.1.2 Hardware**

[Present a list of all hardware (if any) that will be procured or produced under the contract.

NB: Ownership of hardware assets with a value below 10,000 Euro shall remain with the Contractor. Ownership in respect of any hardware assets above 10,000 Euro will be left to the Contractor whenever the parties agree when completing the contract that there is a further useful utilisation by the Contractor for purposes connected with the objectives of the contract]

**F.1.3 Software**

[Present a list of the software (if any) that will be procured or produced under the contract.

NB: It is not expected that software will be a deliverable. However, mathematical models, data files, etc. might become deliverable items. This will be agreed during the negotiation meeting.]

## Work Breakdown Structure and Work Package Descriptions

**F.2.1 Work Breakdown Structure (WBS)**

The figure below presents the work breakdown structure, covering the entire scope of the proposed work.

[Replace the following diagram with an equivalent showing the proposed work breakdown structure. Entries in the figure are examples to be amended as relevant.] [Present the Work Breakdown Structure for the study including a separate Work Package on ‘Study Management’ (WPD 0). The WBS will constitute a framework for the management of the subsequent contract.

NB: For Feasibility Studies, a WBS on the first level is considered sufficient and could look like the one presented above.

However, if you see a need to track work on sub-task level (e.g. different responsibilities and budgets of subcontractors), then you may present it to that level of detail. This needs then also to be reflected in individual work package descriptions and a reflection of the cost breakdown.

If there is the creation of a new company (e.g. spin-off) planned at some stage (e.g. before/during a potential follow-on demonstration project), it is recommended to include a dedicated work package on the implementation roadmap for this new company as part of the Business Plan WPD.]

**F.2.2 Work Package Descriptions (WPD)**

A work package description (form PSS-A20) is presented herewith below for each of the work packages at the lowest level of the work breakdown structure

|  |  |
| --- | --- |
| **PROJECT: study name PHASE: n.a.** | **WP REF: 0** |
| WP Title:Study Management (example)Contractor:Organisation nameStart event: KO Planned Date: T0End Event: FRPlanned Date: T0 + 9mWP Manager: Key personnel name  | Sheet 1 of 1Issue RefIssue Date: dd/mm/yyyy |
| Inputs:- Proposal- Management Requirements for Feasibility StudiesTasks:- Coordinate activities with subcontractors- Liaise with ESA- Organise review meetings- Execute quality control of deliverables- Produce the project web page- Produce the final reportOutputs/Deliverables:- Minutes of Review Meetings- Monthly Progress Report- Project Web Page - Final Report- Planning Bar Chart- … |  |

[The purpose is to obtain a systematic description of the tasks to be performed to meet the requirements of the contract which enables a proper evaluation of the work content and its costing as well as of the proposed planning. It is therefore important that the descriptive terminology for tasks and products be consistent with that used in the Call for Proposals (especially the ‘Management Requirements for Feasibility Studies’).

The content (tasks) of the work package descriptions has to be consistent with part C.3 of the technical proposal (especially with the sub-elements d)).

The work package descriptions comply with the following requirements:

* There is a single work package manager for each work package, who is a member of the key personnel.
* Work packages start and end on milestone events and do not span the entire duration of the activity (except for the project management work package and the closely associated management functions).
* Inputs from other work packages are clearly identified.
* The work to be performed is described in sufficient detail for the Agency to be able to judge the value for money, including scope of work and man-hours.
* Each task is traceable with a corresponding work package output.
* Each work package has at least one traceable work package output (hardware, software and/or documentation item, deliverable to the Agency).
* All deliverable hardware, software and documentation items are traceable to the identified work packages.]

## Planning

**F.3.1 Proposed Schedule and Milestones**

Schedule of the study: …

[Present the schedule of the study taking into account potential dependencies with respect to availability of external parties such as users/customers (e.g. non-availability during operational peak seasons / holiday season, requirements for alignment of ‘Proof of Concept’, availability of user facilities for ‘Proof of Concept’), as well as any needs related to seasonal aspects. Present the underlying planning assumptions (e.g. start of study, holidays, completion of study).

NB: The duration of the feasibility shall not exceed 9 months. The duration of the Technical Phase 1 is foreseen to last about 6-7 months, the duration of the Technical Phase 2 is expected to last about 2-3 months.]

Review meetings and meeting participants: …

[Present the major milestones as well as the foreseen progress / review meetings including information on the meeting participants]

**F.3.2 Bar Chart**

[Present the planning in form of a bar chart. This shall be coherent with all other aspects of the proposal (i.e. WBS, WPDs, Meeting Plan, Milestone Payment Plan). Major interdependencies between bars shall be shown with a connecting line and should include a suitable description of the interface.

The following requirements shall be observed:

* + - the activities presented by the bars shall be presented on a linear timescale shown either in weeks or months;
		- the estimated durations shall be based upon normal working conditions;
		- the proper sequence of tasks, together with the appropriate interfaces with other project participants and outside restraints (including inputs and outputs of the Agency) shall be given.

In the planning all the milestones shall be identified to which payments are linked (see also paragraph F.8).

In establishing the planning, please, take account of the need of the Agency to review and/or approve intermediate deliverables and include sufficient time for the Agency to do this.]

The project schedule shows the start date, the end date and the duration of each work package and the timing of the contractual reviews and other review meetings. The planning takes into account the need of the Agency to review and / or approve intermediate deliverables and allows at least 10 working days for the Agency to do this.

Gantt Chart: …

# FINANCIAL Proposal

## Cost and Price Summary

The cost and price for the project is as defined in the following table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity** | **Country****(ISO Code)** | **Role** | **Cost in Euro[€]** | **Price in Euro[€]** |
| Tenderer | … | Prime | €… | €… |
| Subcontractor 1 | … | Subcontractor | €… | €… |
| Subcontractor x | … | Subcontractor | €… | €… |
| … | … | … | … | … |
|  | **Total:** | **€…** | **€…**(…% of total cost) |

## Cost Breakdown

The breakdown of the activity cost for the tenderer and the involved subcontractors is as defined in the following table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **[Tenderer]** | **[Subcontractor 1]** | **[Subcontractor x]** |
|  | € | € | € |
| Exchange Rate (if not €) | … | … | … |
| Total number of hours | … | … | … |
| Average Hourly Rate | … | … | … |
| Manpower Cost | … | … | … |
| Travel and subsistence expenses | … | … | … |
| External Service | … | … | … |
| Miscellaneous | … | … | … |
| Total Activity Cost | … | … | … |
| Company contribution | … | … | … |
| ESA Contract Price | … | … | … |

[When mentioning the Price of the activity, please, refer to the amount to be funded by ESA. The total cost of the activity is the complete activity cost composed of the ESA funding (firm fixed price to ESA) and the company’s contribution.

Costs related to marketing activities (PR material, participation in conferences, exhibitions, etc.) are eligible up to 3% of the total cost.]

The following external services are foreseen to be procured: …

[If external services are used, information regarding the nature of the purchased services, the company providing these services and its geographical location need to be presented.]

The manpower distribution over the various Work Packages for the tenderer and all subcontractors is defined in the following table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **WP0** | **WP1** | **WP2** | **WP3** | **WP4** | **WP5** | **Total** |
|  | [hours] | [hours] | [hours] | [hours] | [hours] | [hours] | [hours] |
| [Tenderer] |  |  |  |  |  |  |  |
| [Subcontractor 1] |  |  |  |  |  |  |  |
| [Subcontractor x] |  |  |  |  |  |  |  |
| Total Manpower |  |  |  |  |  |  |  |

## Funding Principles and Source of Company Contribution

**G.3.1 Agency Contribution**

 [NB: The Agency will contribute in principle up to 50% of the projected cost.

Work carried out by universities and research institutes which are involved as contractor or subcontractor(s) and justifying no further commercial interest in the service or product may be funded 100% by the Agency, depending on the funding level authorised by the related National Delegation(s) within their ‘Letter of Authorisation of Funding’ (AOF). In such a case, the total ESA co-funding level of 50% may be exceeded, up to a maximum ESA co-funding level of 75%.

NB: If the status of ‘Research Institute’ is not obvious, further formal evidence will be required to proof this status (e.g. copy of the constitution, certification from a relevant authority, etc.)

To the extent that activities are performed by micro, small and medium-sized enterprises (i.e. enterprises fulfilling the criteria defined in the European Commission Recommendation of 6 May 2003 (2003/361/EC) or as updated), said activities are funded up to 80% by the Agency, depending on the funding level authorised by the related National Delegation(s)]

Universities and Research Institutes requesting 100% funding level: … [name of the entity]

The letter(s) of the concerned entity(ies) confirming their non-commercial interest in the service or product is (are) presented as Annex 2 in the Cover Letter to this proposal.

[For universities and research institutes requesting 100% funding by the Agency, enclose a letter(s) signed by an authorised person confirming no further commercial interest in the service or product.

 NB: National Delegations have to indicate in their ‘Letter of Authorisation of Funding’(AoF) the percentage corresponding to the work of the universities or research institutes which is fully funded by the Agency]

**G.3.2 Company Contribution**

The source of the entity contribution (including from any private third party) to the overall estimated costs is as follows:

Tenderer (prime contractor): ….

Subcontractor 1 (subcontractor): …….

Subcontractor x (subcontractor): …….

It is confirmed that, in all cases, the entity contribution excludes overheads included in rates charged to the Agency for the contract, or any other contract with the Agency, or sub-contract awarded under an Agency contract.

[State the source of the company contribution of the tenderer and each subcontractor. The purpose of this information is to provide evidence on the capabilities of the involved company(ies) to pay their share of the cost of the proposed activity elements (procurements, facilities, manpower), to guarantee the cash flow during the study, and, as such, are able to complete the activity.

The company contribution can be funded by the tenderer and its subcontractor(s), if any, through private and/or public sector direct or indirect co-financing.

Examples of possible sources of co-funding are: existing funds in bank account coming from sales/profit, already approved/prospective bank loan, investment from external source e.g. private investment funds, other contributions.

The bidder(s) is(are) kindly invited to provide evidence of the co-funding in the form of a letter(s) of commitment from investor(s), bank guarantee(s), loan(s) or own resources (e.g. cash and other liquidity).

 NB: In case where a company has been founded recently (< 2 years), additional information on the financial situation of this company needs to be provided (profit/loss situation at end of last year, current financial situation, expected evolution of revenues for next year, evidence on financial coverage of co-funding, etc.) in order to proof that this company has the financial capabilities to co-fund the activity, and is able to manage its cash flow for the duration of the activity.].

## Statement of Profit

It is confirmed that the price offer does not include profit neither for the Tenderer nor for the subcontractor(s).

## Exchange Rates

The financial proposal is presented in Euro.

[Option 1] Exchange rates are not applicable, as all members of the Bidding Team are located in countries participating in the Euro.

[Option 2] The following exchange rate has been applied: … [country: exchange rate]

[NB: It is a binding requirement that tenders are presented in EURO. The Agency will NOT enter into negotiations which are aimed at adjusting the prices proposed in order to account for fluctuations in exchange rates for companies in countries not participating in the EURO.

Should the countries to which the Tenderer or proposed Subcontractors belong adopt the EURO following submission of the tender, the applicable conversion rates shall be those adopted then by the appropriate European Authorities.

For any Tenderer or proposed Subcontractor located in non-EURO countries, the exchange rate shall be stated in the Cost Breakdown and shall be the base exchange rate published on EMITS for the month of the base economic conditions required in the tender (see <http://emits.esa.int/emits/owa/emits.main> under "Reference Documentation" ⇒ "Administrative Documents" and referred to as “National Price and Salary Statistics – Annual Publications“ section 3 Exchange Rates)]

## Type of Price

The price type is a ‘Firm Fixed Price’.

## Quotations free of Taxes and Customs Duties

The prices have been quoted free of taxes and customs duties.

[In cases where the Tenderer considers that he will remain subject to the payment of taxes or customs duties, he shall indicate separately the applicable rates, the corresponding estimated total tax or customs duty amount, and the reason why he believes exemption from tax or customs duties cannot he obtained. Attention is drawn to Clause 29 of the GCC.

NB: The tenderer is reminded that if a Prime is entitled to a VAT exemption form from ESA (or similar procedure) it is only the Prime which will have the benefit of the VAT exemption, and not the subcontractors. All subcontractor invoices should be addressed to the Prime and must include VAT or any other taxes or duties required by the relevant national rules for the companies involved. Any VAT costs which are payable under such subcontracts shall not be included in the price charged to ESA]

## Milestone Payment Plan

The proposed milestone payment plan is detailed in the table below:

[Propose a Milestone Payment Plan (MPP), taking into consideration Article 3 of the draft Contract and Clause 28 of the GCC as well as the conditions shown in the draft contract payment plan.

All claims for payments shall be linked to the achievement of defined milestones. It should be noted that the commencement of an activity is not deemed to be a suitable milestone.

For IAP Feasibility Studies the typical payment milestones are BCR and FR. As the study is divided into two technical phases, and as it shall be possible to close the study at BCR in case of negative outcome, the acceptable payment plan is 80% at BCR, 20% at Final Review. The final payment shall not be less than 20% of the total contract price.]

|  |  |  |  |
| --- | --- | --- | --- |
| **Milestone Description** | **Schedule Date** | **Amount in Euro** | **Economic Operator** |
| MILESTONE 1 (MS1) – upon completion of BCR and upon Agency’s acceptance of all related deliverables | T0 + … months | …[80%] | (Tenderer) |
| MILESTONE 2 (MS2) – Final settlement: upon the Agency’s acceptance of all deliverable items due under the Contract and the Contractor’s fulfilment of all other contractual obligations including submission of the Contract Closure Documentation | T0 + … months | …[20%] | (Tenderer) |
|  | Total | … |  |

[Include the following table if you wish to propose an advance payment plan.

The advance payment shall take into account Article 3 of the Draft Contract and the following provisions:

* An advance payment is not granted automatically, it is required to demonstrate a significant need for cash disbursement at the beginning of the execution of the contract.
* Nevertheless, whenever an SME (as per definition in [http://eur-lex.europa.eu/ legal-content/EN/TXT/PDF/?uri=CELEX:32003H0361& from=EN](http://eur-lex.europa.eu/%20legal-content/EN/TXT/PDF/?uri=CELEX:32003H0361&%20from=EN)) is involved as Prime or Subcontractor, it shall be entitled to a 35% advance payment irrespective of any cash disbursement needs
* The Tenderer shall keep in its files, for possible review by the Agency, the corresponding SME self-certification(s) submitted by any member of its tendering team. The self-certification(s) have to be provided on letterhead of the corresponding entity as per model hereunder:

“I confirm that the company I am representing satisfies all the criteria for SME qualification as per definition given in the recommendation 2003/361/EC of the European Commission. ”
[ + date, name and signature of authorised representative]

* The amount of any proposed advance payment and the corresponding amount(s) to be offset against the relevant milestone payment(s) shall be clearly stated in Euro.]

An advance payment plan is proposed in the table below. This proposal reflects the need for cash disbursement up to the first payment milestone at BCR.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Prime (P)/****Subcontractor****(SI)** | **Company****Name** | **Entity Code** | **Amount in****Euro** | **Off-Setting against** | **Condition****(if applicable)** |
| P | (tenderer) | 1000xxxxxx | … | MS 1 | Upon signature of the Contract by both parties |
| SI | (subcontractor 1) | 1000xxxxxx | … | MS 1 | Upon signature of the Contract by both parties |
| SI | (subcontractor x) | 1000xxxxxx | … | MS 1 | Upon signature of the Contract by both parties |

[SI = Subcontractor Indirect payment meaning that the prime will receive from ESA the sum of all payments relating to one milestone and has then to pay the relevant amounts to the subcontractors.]

# CONTRACTUAL Proposal

## Compliance with the Contract Conditions

The contract conditions have been read, are understood and accepted. No sales conditions of our own are applicable.

Tenderers shall explicitly state that they have read, understood and accepted the Personal Data Processing Annex (PDPA) to the Contract. This Annex forms an integrated part of the Contract and the Tenderer’s attention is drawn to the fact that it will not be subject of separate signatures. Should the tender lead to a Contract award, the PDPA will enter into force upon signature of the Contract by both Parties

[In case, exceptionally, that the Tenderer wishes to propose modifications or amendments, the full text of such modifications or amendments shall be given and the reasons for their being requested shall be clearly explained.

NB: Any reservations to the requirements, or any proposed modifications or amendments to the contract conditions will be taken into account in the evaluation. Acceptance of a tender containing reservations, or proposed modifications or amendments is not to be construed as acceptance of them, unless and until such modifications or amendments are confirmed in a contract]

## Insurance Waiver

[Option 1] A waiver of subrogation rights from our insurer will be presented during the negotiation phase.

or

[Option 2] A waiver of subrogation rights from our insurer will not be available. The hold harmless agreement specified in Clause 18.1.6 of the General Clauses and Conditions for ESA Contracts shall apply.

[NB: Option 2 is based on the statement of the Tenderer. Option 1 requires further coordination with the relevant insurance company and might require some effort to obtain.]

## Statement Relating to Export Import Licences / Authorisations and Related Documentation

There are no export or import restriction issues and thus no need to obtain specific licences or authorisations.

or include and complete the following statements as appropriate

Export or import restrictions and/or a need of adequate licences or authorisations exist, and the status regarding such requirements is at present the following:

* … (name of tenderer / subcontractor) has obtained the following authorisation(s) in order to submit this tender: ….

and/or

* … (name of tenderer / subcontractor) will need to obtain, prior to the placing of a Contract, the following authorisation(s): ....

and/or

* … (name of tenderer / subcontractor) will need to obtain the following authorisation(s) for the implementation of the contract: ....

# Appendices

App. 1: ‘Letter(s) of Interest / Commitment’ of involved customer(s), user(s), and other external partner organisation(s) and evidence of the agreement with th 5G operator(s)

App. 2: CVs of the key persons

**Appendix 1 -**

**Letter(s) of Interest / Commitment from involved customer(s), user(s), and other external partner organisation(s) and evidence of the agreement with the 5G operator(s)**

[Please, enclose a ‘Letter of Interest / Commitment’ for each participant (customer, user, other external partner organisation) not appearing explicitly as subcontractor, containing information on their motivation for their participation (in their own words) as well as information on their contributions to the various study tasks.

Contributions to the study may include:

* + identification of current operational processes and their issues,
	+ support to definition of user scenarios/processes,
	+ support to definition of user requirements,
	+ identification of expected benefits and financial constraints,
	+ support with validation of the Proof of Concept,
	+ indication of interest in a potential follow-on Demonstration Project,
	+ support to promotion of the targeted services
	+ evidence of the agreement with the 5G operator(s)]

**Appendix 2 - CVs of key persons**

[Please, provide complete Curricula Vitae (CVs) for all key personnel using the following template, or equivalent. Competence in technical aspects, business development, market/domain expert, commercial and sales shall be explicitly presented.

|  |
| --- |
| **Name** |
| Specific Qualifications and Experience Relevant to the Project Role: | … |
| Entity: | … |
| Present Position and Responsibilities in the Entity: | … |
| Education: |  |
| Year(s) | Educational details |
| Year(s) | Educational details |
| Work Experience: |  |
| Year(s) | Entity, Project, Position, Responsibilities, Achievements |
| Year(s) | … |
| Year(s) | … |