ARTES 4.0 Technology & Product Developments

Full Proposal

Part 2

Business Plan

Proposal title

Proposal Reference: reference number

Notes for the use of this template (to be removed from Full Proposal)

Material presented in this plain style must not be removed nor modified, unless stated otherwise by an explanatory note.

Parts highlighted in yellow may or may not need to be filled in, depending on the scope of the proposal (please refer to the related explanatory notes to determine if they apply or not).

Text in red font must be modified and/or completed by the Tenderer for the proposed activity (this supplementary information should be presented in plain typeface, i.e. not red, in the final version of the Full Proposal).

Text in blue italics is used for explanatory notes and guidance to help you to develop the Full Proposal content. They should be removed from the final document before submission.

A single Part 2 shall be included covering all Development Phases for which support is being requested under the ARTES 4.0 Technology & Product Developments Call for Proposals.

The Business Plan should be based on that provided in your Outline Proposal, which contains the Financial Forecast Workbook (Excel® spreadsheet), updated as appropriate to include the most recent information.

The Financial Forecast Workbook forms an integral part of the Business Plan (Part 2 of the Full Proposal) and shall be attached as Annex 1 to this document. It is available at: <https://artes.esa.int/documents>

Use of this Full Proposal Template is **mandatory**. The Tenderer shall not change the structure of this Full Proposal Template (i.e. the table of contents must remain unchanged) and adhere to its guidelines and requirements. However, the format and lay-out can be modified, e.g. to be in-line with the Tenderer’s corporate identity.

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*The Business Plan is intended to analyse the strategic context and commercial potential of the output of the proposed activity and to demonstrate that the Contractor’s initiative is conceived to lead to a commercial exploitation.*

*It shall be provided from both Tenderer’s and Industrial participants perspectives.*

*The Business Plan shall provide the commercial rationale for the proposed development activities with the key commercial aspects, including the potential satcom target market, the target customers, the competitive environment and own positioning, as well as the market strategy.*

*The extent of information provided in this section shall be in line with the maturity of the proposed development phase(s) (e.g. for the initial Development Phases such as Definition and Technology, only preliminary information on the business case is required).*

*Please note that the Business Plan presented in this document shall be related to the* ***target final product(s)*** *to be sold on the market. The target product(s) may include other elements or features not covered by the proposed activities.*

*The supporting spreadsheet (“Financial Forecast Workbook”) can be downloaded from* [*https://artes.esa.int/documents*](https://artes.esa.int/documents)*.*

*Assuming favourable feedback on your outline proposal by the Agency, the business plan provided in the outline proposal should be carried forward to form part of your associated Full Proposal (with updated information, as appropriate).*

# Market Analysis

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

Table 1‑1 Market Positioning

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Product** | |
|  |  | **Existing / Incremental** | **New** |
| **Market** | **Existing / Incremental** | X | X |
| **New** | X | X |

*Our product is:*

*Space Segment hardware/software.*

*or*

*Ground Segment hardware/software.*

*or*

*System/Service (integrated end-to-end satcom solution comprising both Space and Ground Segment products.*

Our product is addressing the sector of …… (e.g. provide a few examples), which has the following characteristics: …. (e.g. geographical reach, trends, sales model).

The Total Available Market (TAM) of the targeted product is the following:

*TAM (the total worldwide market available for your product) shall be presented, including quantitative figures. If the product is new (not existing), market of a similar product may be used.*

The Serviceable Available Market (SAM) of the targeted product is the following:

*The SAM (the market you can really address with your product and your channels, it comprises all your potential customer segments) shall be presented including quantitative figures and assumptions.*

*If you already have a market share of this market, you shall present it including quantitative figures and factual information (for instance, sales existing products in this market, or of previous generation, for the different customer segments).*

Our projection in terms of the Serviceable Obtainable Market (SOM or target market) we aim to capture in the short term for each of the identified customer segments is shown in our financial forecast workbook.

The assumptions behind these sales projections are …

*Present the percentage of the Serviceable Available Market that your company could realistically reach in the short term and the underlying assumptions that led to the projected sales volumes over time, taking into account competition, trends, demand forecast, sales channels and other elements that could have influence. This value is usually estimated taking into account specific customers (or group of customers) within the targeted customer segment(s).*

# Competitive Landscape

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

Table 2‑1 Summary of the Competition

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Competitor** | **Nature of Competition** | **Description of Competitor’s Product** | **Market Share** | **References** |
| ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… |

*Columns 1 & 2: Show the competitors already present in your market (SAM) or serving it partially. Indicate the nature of the competition, highlighting their value proposition in relation to the market you are trying to serve. Include the strengths/weaknesses of the competitors’ products compared to the targeted product. For example, an existing or potential supplier of the same type of product with the same characteristics and a lower price, a new entrant to the market with an innovative value proposition, a market incumbent.*

*Column 3: Describe the competitor product. Quantify the nature of the competition as far as possible (e.g. performance, competitiveness in terms of pricing, etc.).*

*Column 4: Quantify their market share.*

*Column 5: provide references to substantiate your assessment of the competition (e.g. web links, references to market analyses, data sheets, etc.).*

Our key competitive differentiations are summarised in the following table.

*Identify your competitive advantage and your strategy for competing in the target market (e.g. using a SWOT analysis).*

Table 2‑2 SWOT Analysis

|  |  |
| --- | --- |
| STRENGTHS  - List of strengths | WEAKNESSES  - List of weaknesses |
| OPPORTUNITIES - List of opportunities | THREATS - List of threats |

*Strengths are characteristics that give you an advantage over your competitors.*

*Weaknesses are characteristics that place you at a disadvantage with respect to the competition.*

*Opportunities are (usually external) elements that you could exploit to improve your business prospects.*

*Threats are elements (e.g. external influences) that could threaten your business prospects.*

*Add supplementary material as necessary to fully describe the competitive environment.*

On the basis of the SWOT analysis, our strategic options to achieve the commercial goals are ………

# Business Model Canvas

*A single page Business Model Canvas is available at* [*https://artes.esa.int/documents*](https://artes.esa.int/documents) *and may be used as a tool to help generate and structure the overall Business Plan.*

## Customer Segments and Value Proposition

The table below identifies the key customers/customer segments identified as Serviceable Obtainable Market (SOM or target market), targeted by the proposed product(s), and the specific characteristics of our product(s) that will address the customer problems/needs.

Table 3‑1 Customer Segments/Needs and Key Product Characteristics/Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **Customer/Customer Segment** | **Customer Problems/Needs** | **Product Characteristics Addressing this Problem/Need** | **Key product requirement** |
| ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… |

*Each customer segment targeted should be clearly identified. Add any supplementary text you feel is necessary to clarify the nature of your intended customers and to explain their main needs.*

*Add any supplementary text that you feel is necessary to explain your value proposition fully. For example, you could explain how the proposed development fits into your overall product development strategy to meet the needs of the customers in the longer term.*

*Indicate whether or not the adoption of the product is going to change the way the customers are traditionally running their business, for instance, if the product is bringing a disruptive innovation.*

*The proposed development activities shall increase the competitiveness of the target product(s). Such activities may include all developments necessary to achieve such a goal (e.g. new features, tools, processes, techniques and technologies).*

*Please note that the Business Plan presented in this document shall be related to the target product(s) to be sold on the market. The target product(s) may include other elements or features not covered by the proposed development activities.*

## Value Chain

*This section is optional if you propose to develop a Space Segment product fitting in the white cell in Table 1-1 (existing/incremental product targeting an existing/incremental market). Otherwise this section is mandatory*.

The following diagram describes the value chain, its composition and the role of the stakeholders in the commercial exploitation phase of the product.

Figure 3‑2 Value Chain



**EXAMPLE**

*Provide a diagram which illustrates the value chain and the interactions among customers, users, the project team and other key stakeholders (e.g. regulators) in the commercial exploitation phase of the product you intend to realise. Include a discussion of the changes, if any, introduced in the value chain by the proposed new product and/or service.*

## Revenue Streams

In the commercial exploitation stage, our product(s) will be sold to our customers as described in the financial forecast workbook.

*Show here the product/s pricing scheme as reported in the financial forecast workbook: Refer to the relevant table that records your assumptions regarding the product revenue stream.*

The underlying assumptions that led to the projected product unit sales price and unit cost are the following: ……

*This shall include, for instance:*

* *A description of how cost reduction will be achieved.*
* *Evidence that the projected unit sales price is competitive (what are your customers willing to pay? what do your customers currently pay?).*
* *How* *much does each revenue stream contribute to the overall revenues?*

*For the Definition and Technology Phases an estimation (target) shall be provided in line with the maturity of the product. Provide estimated ROM prices including all features, even if they are developed outside of the proposed development activities.*

## Cost Structure

The key elements of cost for realising the value proposition are the following: ……

*You should list the most important costs that characterise your business opportunity in terms of:*

* *Key resources costs (e.g. hubs, satellite bandwidth, sales personnel, financing).*
* *Costs of key activities needed to pursue your business opportunity (e.g. R&D, sales, marketing, creating and delivering value, maintaining customer relationships).*
* *Costs of all previous, current and future developments that were, are or will be necessary to prepare the product for commercial exploitation (for instance, delta qualification required for other product variants not covered by the EQM, material, parts and process evaluations / qualifications, etc.). This may include operations cost.*

The following assumptions have been made when deriving the cost figures: ……

*Refer to the relevant table(s) in the financial forecast workbook that record your assumptions regarding the costs associated with the commercial exploitation phase.*

*Optionally, you may also provide a copy of the relevant table(s) in this section.*

## Channels

*This section is optional if you propose to develop a Space Segment product fitting in the white cell in Table 1-1 (existing/incremental product targeting an existing/incremental market). Otherwise this section is mandatory*.

In the commercial exploitation stage, our product(s) will be sold to the customers via these channels: ……

*Indicate whether or not the sales channels are already established. If not, explain how they will be created. If customers are new for your company (i.e. your company has not sold products to them in the past), please explain your approach to reaching these customers.*

## Customer Relations

*This section is optional if you propose to develop a Space Segment product fitting in the white cell in Table 1-1 (existing/incremental product targeting an existing/incremental market). Otherwise this section is mandatory*.

Our relationships with the key customers already exist/must be created/have to be improved.

*Provide factual information, for instance, existing contracts with figures. If the product targets only one specific customer, a letter of interest from this customer has to be attached to the outline proposal, confirming the adequacy of the value proposition. Indicate whether or not customer representatives will be involved in the proposed project and, if so, the kind of formal agreement that you intend to set up with them.*

## Key Activities to Establish the Business

*This section is optional if you propose to develop a Space Segment product fitting in the white cell in Table 1-1 (existing/incremental product targeting an existing/incremental market). Otherwise this section is mandatory*.

*You should describe crucial activities you must carry out to make your business model work. (e.g. key activities necessary to realise the value proposition, for establishing the distribution channels, to have in place the key resources, to establish the customer relations, to secure agreements with the key partners).*

*Note that key technical development activities shall be described in the implementation proposal.*

## Key Resources

*This section is optional if you propose to develop a Space Segment product fitting in the white cell in Table 1-1 (existing/incremental product targeting an existing/incremental market). Otherwise this section is mandatory*.

*You should describe crucial resources (physical, intellectual, human, financial) that you must have to make your business model work (e.g. key resources necessary to realise the value proposition, for having channels in place, to establish the customer relations, to secure agreements with the key partners, to make your revenue stream work).*

## Key Partners

*This section is optional if you propose to develop a Space Segment product fitting in the white cell in Table 1-1 (existing/incremental product targeting an existing/incremental market). Otherwise this section is mandatory*.

*You should identify the stakeholders (suppliers, partners, users, etc.) that are crucial to the success of your business model.*

The key partners in the commercial exploitation of the product are listed in the table below.

Table 3‑3 Key Partners

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Partner Type** *(e.g. satellite manufacturer, operator, service provider, supplier, user, customer)* | **Partner Name** *(company name, country, web link)* | **Involvement in the Project** *(e.g. none, subcontractor, supplier, integrator)* | **Type of Agreement** *(e.g. NDA, partnership agreement, contract)* | **Existing Agreement** |
| ……… | ……… | ……… | ……… | Yes |
| ……… | ……… | ……… | ……… | No (planned) |
| ……… | ……… | ……… | ……… | ……… |

The following table provides an overview of the relevant background and experience of the key partners and their roles in the development and commercial exploitation of the product.

Table 3‑4 Key Partner Background, Experience and Roles

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Partner** | **Background and Experience** | **Role in the project implementation** | **Role in the commercial exploitation** | **Key obstacle for partnership (e.g. IPR constraints)** |
| ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… |
| ……… | ……… | ……… | ……… | ……… |

# Financial Indicators

*Refer to the relevant tables and figures in the financial forecast workbook that quantify the expected return on investment.*

The financial forecast is detailed in the attached financial forecast workbook. It shows the impact of ESA financial support on the return on investment.

*Provide a copy of the relevant tables/figures in this section, replacing the placeholders below.*

A copy of the relevant information is provided below:

The Internal Rate of Return (IRR), the Net Present Value (NPV) and the break-even point are ….

1. Financial Forecast Workbook
2. Terminology

|  |  |
| --- | --- |
| Breadboard (BB): | An initial development model for a space product, electrically and functionally representative of the complete end item, or of one or more key elements of the end item. It is used to prototype the intended design and to mitigate technical risks. Verification is typically performed in a laboratory environment. |
| CAPEX: | Capital Expenditure or CAPEX is investment in the long-term, consisting of assets that are bought by the company and go on the balance sheet. The value of those assets is typically depreciated over the years. |
| Customer Segment: | A group of customers identified on the basis of their needs, behaviours, or other traits that they share. |
| Customer: | An individual or an organisation that meets three criteria: 1. they have a problem they want to solve; 2. they have money/budget to spend to solve the problem; 3. they are willing and authorised to execute the buying decision. |
| Definition Phase: | Consists of the set of activities to support the initial development and design of the product along with any systems engineering that may be required to define the product and identify the optimal solution for the target market |
| Demonstration Phase: | Consists of the activities needed to validate the operational effectiveness and capabilities of the final product in its final configuration and within the user utilisation environment, prior to commercialisation. |
| EGSE: | Electrical ground support equipment. |
| Engineering Model (EM): | Flight representative model in terms of form, fit and function used for functional and failure effect verification. The engineering model is usually not equipped with high reliability parts or full redundancy. The engineering model is also used for final validation of test facilities, ground support equipment and associated procedures. See ECSS‑S‑ST‑00‑01C. |
| Engineering Qualification Model (EQM): | Model which fully reflects the design of the flight model except for the parts standard, used for functional performance and EMC verification and possibly for qualification. Military grade or lower-level parts can be used instead of high reliability parts, provided they are procured from the same manufacturer with the same packaging. Functional performance qualification includes verification of procedures for failure detection, isolation and recovery and for redundancy management. The engineering qualification model may also be used for environmental testing if the customer accepts the risk, in which case the qualification model rules apply. See ECSS‑S‑ST‑00‑01C. |
| Flight Model (FM): | End product that is intended for flight. The flight model is subjected to formal functional and environmental acceptance testing. See ECSS-S-ST-00-01C. |
| Ground Segment: | Consists of all the ground-based elements of a satellite communication system. |
| Ground Support Equipment (GSE): | Non flight product (hardware/software) used on ground to assemble, integrate, test, transport, access, handle, maintain, measure, calibrate, verify, protect or service a flight product (hardware/software). See ECSS‑S‑ST‑00‑01C. |
| Market: | A broad landscape of buyers looking to solve different types of problems. A market can comprise many different types of customer segments. |
| MGSE: | Mechanical ground support equipment. |
| Model: | Physical or abstract representation used for calculations, predictions or further assessment. Model can also be used to identify particular instances of the product e.g. flight model. See ECSS‑S‑ST‑00‑01C. |
| OPEX: | Operational costs, or OPEX, are the costs associated with the day-to-day running of the company or the used up expenses. |
| Product: | A product is any hardware, software, system or sub-system, or service item that is ready for commercial exploitation. |
| Product Development Plan: | Is the development logic to develop a product ready for commercial exploitation using the Development Phases as required (Definition, Technology, Product, and Demonstration), but including as a minimum a Product Phase or a Demonstration phase. |
| Product Phase | Consists of non-recurring development activities to prepare for the commercial production of the product |
| Proto Flight Model (PFM): | Flight model on which a partial or complete proto flight qualification test campaign is performed before flight. See ECSS‑S‑ST‑00‑01C. |
| Qualification: (space products) | That part of verification which demonstrates that the product meets specified qualification margins. This can apply to personnel, products, manufacturing and assembly processes. See ECSS‑S‑ST‑00‑01C. |
| Qualification Model (QM): | Model which fully reflects all aspects of the flight model design, used for complete functional and environmental qualification testing. A qualification model is only necessary for newly-designed hardware or when a delta qualification is performed for adaptation to the project. The qualification model is not intended to be used for flight, since it is over-tested. See ECSS‑S‑ST‑00‑01C. |
| Scaled Engineering Model (Scaled EM): | Engineering model that is not fully representative of the end product, but is sufficiently representative to permit the verification of critical functions of the product in a relevant environment. Critical functions are those functions of the product that deserve control and special attention in order to mitigate technical risks. |
| Space Segment: | Part of a space system, placed in space, to fulfil the space mission objectives. Space segment activities relate to any product to be used on a spacecraft. |
| Technology Phase: | Consists of the activities performed to mitigate the technical risks of the product development up to and including the manufacturing and test of a representative model of the product (e.g. an Engineering Model), but excluding qualification or industrialisation.  The Technology Phase may exceptionally include early in-orbit experimentation to verify the functioning of the technology in an end-to-end system context when it is not possible to test the technology in a ground-based environment. |
| Validation: | Process which demonstrates that the product is able to accomplish its intended use in the intended operational environment. The user shall have a key role in this process. Validation addresses whether a product will satisfy the needs of its users. Validation proves it is the right product. |
| Value Proposition: | This is a statement of the value that a company or solution offers to its customers and/or partners. It is expressed from the perspective of the value to the target customer and addresses the main benefit(s) derived by the use of the product. |
| Verification: | Process which demonstrates through the provision of objective evidence that the product is designed and produced according to its specifications and the agreed deviations and waivers, and is free of defects. Users are not involved in the verification. Verification addresses whether a product satisfies the requirements placed upon it. Verification proves the product is right. |

1. Letter of Interest from Our Customer

*if you are targeting a single customer only attach a letter of interest from that customer here*