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ESA HydRON

(High thRoughput Optical Network)

Demonstration System

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Request for Interest Call guidelines in Cooperating on

HydRON-DS Phase B2/C/D/E



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| **Title: Request for Interest Call guideines in Cooperating on HydRON-DS Phase B2/C/D/E** | |
| Issue 1 | Revision 1 |
| Author Monica Politano | Date 21 June 2022 |
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# Introduction

## Document Scope

As part of the ESA HydRON Demonstration System project, this document provides the guidelines of the “Request for Interest Call in Cooperating on HydRON-DS Phase B2/C/D/E” that will be issued by the European Space Agency (hereafter referred to as the Agency).

## Applicable Documents

|  |  |
| --- | --- |
|  | HydRON-DS Phase A/B1 Mission Assumptions and Technical Requirements (MATER) – ESA-TIA-T-RS-0029 Issue 2 Rev 0 |

## Reference Documents

N/A, further documentation might be made available during the Bilaterals.

## Abbreviations

|  |  |
| --- | --- |
| CMIN | Council at Ministerial level |
| CU | Confidentiality Undertaking |
| GEO | Geostationary Orbit |
| HydRON | High thRoughput Optical Network |
| HydRON-DS | HydRON Demonstration System |
| ITT | Invitation to Tender |
| LEO | Low Earth Orbit |
| MATER | Mission Assumptions and Technical Requirements |
| MVS | Minimum Viable Service |
| NoI | Notification of Interest |
| OTN | Optical Transport Network |
| RFI | Request for Interest |
| SLA | Service Level Agreement |
| SRR | System Requirements Review |

# Background and Landscape

HydRON (High thRoughput Optical Network) is a project within the ScyLight programme, and was first presented at the Ministerial Council in November 2019. The HydRON Project is

implemented as part of the “Optical Communication – ScyLight ARTES Strategic Programme

Line”. The Agency’s initiative, as represented in the HydRON vision below, is to enable the development and validation of the “Fibre in the Sky” or "Internet beyond Cloud(s)" technology integrated in terrestrial networks at terabit-per-second capacity and led by European and Canadian industries. The project will support the next generation of institutional and commercial missions, requiring advanced communication capabilities which are currently unavailable.

This vision is being developed and coordinated by D/TIA (Telecommunications and Integrated Applications Directorate), in collaboration with other ESA Directorates like the D/EOP (Earth Observation) and the D/OPS (Operations) Directorates.

The HydRON project targets the implementation of the HydRON Demonstration System (i.e., HydRON-DS). Two parallel phase A/B1 studies are presently running (led by TAS-I and ADS-D respectively). The next phase B2/C/D/E contract is planned for implementation after the CM 2022 (ITT expected by the Q3-Q4 of 2023).

The HydRON-DS has three main objectives:

* Objective 1: technology verification and end-to-end system demonstration
* Objective 2: validation of operational concepts in support of Service Demonstration
* Objective 3: provision of Service Demonstration in support of future Service (e.g., a Minimum Viable Service (MVS))

## HydRON-DS Mission in the frame of the whole HydRON Vision

A change of paradigm in satellite communications is considered mandatory in order to complement the continuous performance evolution of terrestrial high-capacity networks.

Market demands are evolving as more data-intensive services are set to be widely deployed, requiring new technologies, business models and cooperation. Satellite communications industry will need to meet these evolving requirements to maximize opportunities and become active player across several market verticals considered in the deployment of 5G and beyond networks.

Graphical user interface

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Figure 1: HydRON Vision enables the convergence of terrestrial high-capacity networks and space systems.

HydRON Vision is an Optical Transport Network (OTN) concept, based on the combination of multi-layered satellite architectures and the use of on-board switching in combination with extremely high throughput Optical Ground Space Links (OGSL, including Optical Feeder Links (OFL)) and Optical Inter-Satellite Links (OISL). HydRON network needs to converge with terrestrial high-capacity networks. Use of innovate concepts for autonomous networks management and control (e.g., adoption of software defined networking (SDN) and network slicing/network function virtualization (NS/NFV) solutions) are of particular importance to guarantee the convergence of HyDRON with terrestrial OTN.

The proposed HydRON-DS mission aims at deploying a Demonstration System (DS) composed of the minimum number of elements necessary to demonstrate high-throughput space OTN capabilities, to provide high-capacity data transport service and flexible network services to both space and ground assets.

The HydRON Vision envisages a level of performance of at least 3 orders of magnitude larger capacity compared to what is available today (Terabit/sec instead of Gigabit/sec). The HydRON-DS targets to demonstrate ~100’s Gigabit/sec with technology scalable to Terabit/sec.

The HydRON-DS will be composed of:

* a Space Segment deployed in multiple orbits, e.g., GEO and LEO
* a Ground Segment composed by multiple optical ground stations distributed worldwide. For example, locations in Italy, Spain, Portugal, Greece are being considered for a European optical ground network.
* HydRON-DS Control Centre responsible for orchestrating all HydRON assets and ensuring inter-operability with high-capacity terrestrial networks.

# COOPERATION Opportunity Description

## The opportunity: contribution to the next phase definition

The present Call aims at collecting the expression of interest on possible ways to cooperate on the next HydRON-DS Phase B2/C/D/E.

The present RFI is addressed to Operators, Service Providers and Industry (typically Primes, but also early consortia). Respondents to the Call are invited to express their interest in participating to HydRON-DS identifying their role. The cooperation might cover both the Space and the Ground Segments.

With respect to the Space Segment, if the Respondent is a large spacecraft integrator and not a service provider nor a hosting satellite operator of the spacecraft, it needs to elaborate and plan how to involve in the consortium for Phase B2/C/D/E the operator/service provider (and information about potential users). If the Respondent is a potential a satellite operator or service provider interested in hosting the HydRON-DS P/L it needs to elaborate and plan how to cooperate with an HydRON P/L manufacturer.

For the Space Segment Respondents are also invited to express their interest in either only hosting the HydRON-DS P/L, or hosting the HydRON-DS P/L and being connected to it.

Although the orbital scenarios of the HydRON-DS space segment are only preliminary at this stage, it is expected to have at least a node in GEO (a larger node with full set of capabilities) and a node in LEO (a likely simpler node allowing users to connect to the HydRON-DS system). Therefore, Respondents to this Call are invited to express their interest in embarking one or both types of HydRON P/Ls.

### ESA Role

The Agency acknowledges that a full optical infrastructure seamlessly connecting space and terrestrial networks does not exist presently, and that the benchmarking of such a full optical solution wrt the traditional RF infrastructure is still to be demonstrated, taking into account the current technology readiness level of the crucial building blocks and the perspective service cost. A sustainable European supply chain shall be established, ensuring compatibility of alternative products and suppliers, therefore, ESA is found to play a central role in this phase of the DS deployment roadmap, as system architect and strategy driver.

The Agency has elaborated a reference set of mission requirements that shall be used at a starting point [AD1 - MATER]. Respondents to this Call can have access to the HydRON-DS data package, icnlduing the MATER and potential further documents made available, after submitting their NoI (Step-1 of this RFI process).

### Call access and ESA funding eligibility criteria for next phase

The present Call is totally open. Respondents might be located in ESA Member or Associate or Cooperating States, or not.

For Phase B2/C/D/E ESA, funding is foreseen only for entities located in ESA Member or Cooperating States supporting the HydRON-DS Project. The funding levels will be defined in the ITT for Phase B2/C/D/E.

Respondents will be expected to lead the implementation of the HydRON-DS Infrastructure (space and ground segments) and co-fund their development, deployment and operational costs:

* *100%, if they are* not located in and ESA Member or cooperating State
* *For the part exceeding ESA funding,* if they are located in ESA Members or Cooperating States

In view of Phase B2/C/D/E, Respondents shall take into account that they will be expected to either own the infrastructure and operate the service for the lifetime of the deployed assets, or commit to include in the consortium an entity that would eventually cover that part.

For the cases in which ESA funding apply, Respondents shall inform the relevant National Delegations to prepare the support for the next Phase B2/C/D/E ITT.

## Scope of this Call

The Agency has conducted a system study on the whole HydRON vision concept and from this has derived a possible deployment roadmap. The HydRON-DS Project represents the starting phase of this deployment and targets the definition, development and end-to-end operation of an effective and affordable Demonstration System.

**This Request for Interest in Cooperating on HydRON-DS Phase B2/C/D/E aims at gathering the view of potential Candidates on how to shape the upcoming next phase, with a special focus on the use case and role in the consortium.**

**Responding to the present Call will allow Respondents to gather a deeper insight of the Project, contribute to advance the infrastructure concept and inspire the definition of possible cooperation patterns for prospective HydRON-DS Operators / Service Providers / Industry Primes.**

The outcomes of the present Call will be used to prepare the Phase B2/C/D/E ITT. Responding to this Call will not be a pre-requisite to later on access the ITT. The Agency will not be bound to the feedback collected via the present RFI.

This call process shall include a dialogue phase (bilateral discussions) with Respondents to better understand their inputs and to confirm their suitability in addressing HYDRON-DS objectives. The Phase B2/C/D/E ITT will follow later and the selected ITT Bidding consortium will be then responsible for developing, implementing, launching and operating the HYDRON-DS (the need for a proper SLA will be defined in the ITT).

# Outline of the Process

The present Request for Interest (RFI) will follow the steps described in the following:

* Step-0: Release of RFI (announcement via the telecom ARTES 4.0 programme website)
* Step-1: Submission of the Notification of Interest (NoI) by interested Respondents (HydRON-DS data package released to Respondents, including the MATER document)
* Step-2: Dialogue phase (Bilaterals)
* Step-3: RFI submission by interested Respondents
* Step-4: Clarification phase (Bilaterals)

The Phase B2/C/D/E ITT will follow (expected in 2023).

The Agency reserves the right to stop or modify as necessary this process at any time. Principles of equal treatment and non-discrimination will be strictly followed.

## RFI timeline in the HydRON-DS Mission context

The following table provides an indicative timeline of the present Call in the context of the whole HydRON-DS procurement implementation, provided though only as a reference:

|  |  |
| --- | --- |
| *Phase A/B1 KO* | *Q4 2021* |
| **Request for Interest**   * Step-1: Notification of Interest (NoI) * Step-2: Dialogue phase * Step-3: RFI submission * Step-4: Clarification phase | **Q2-Q4 2022** |
| *CM 2022* | *Q4 2022* |
| *ITT stage Phase B2/C/D/E1 ITT Release (not detailed here) - ref only* | **Q3-Q4 2023**  **(goal Q1 2023)** |
| *Phase B2/C/D/E1 award and KO. - ref only* | *Q1 2024*  *(goal Q2 2023)* |
| *HydRON-DS first element of the Space Segment launch - ref only* | *2025/2026*  *(goal Q4 2024)* |
| *HydRON-DS full Space (and TBC Ground) Segment deployment and commissioning. - ref only* | *2027*  *(goal tbd)* |
| *HydRON-DS start of operations - ref only* | *2028*  *(goal tbd)* |

**Table 1: HydRON-DS indicative schedule**

## Respondents’ Background and Expertise

Respondents to this RFI are encouraged to figure out as early as possible how to shape a strong and credible team capable to propose the next phase and later compete for the Phase B2/C/D/E ITT.

The RFI will not be competitive nor exclusive with respect to the subsequent tendering process.

The dialogue step might be useful to better understand and steer the team composition requirements.

In particular, the team will be expected to cover all of the following (expertise or representatives of):

1. Commercialisation, operations and provision of terrestrial or satellite-based telecommunication services.
2. Design, development and deployment of satellite telecommunications and navigation systems including the associated ground-based and space-based infrastructure and the user segment.
3. One or more of the HydRON Users categories.

## Process

The Submission process of an idea (via the telecom ARTES 4.0 programme website) will be initiated by submitting the NoI (plus the mandatory annexes). Further modifications of the idea and necessary exchange of documents (including the RFI) will be performed via a document exchange tool (i.e., SharePoint) until the end of the RFI Call and, as needed, with ESA support.

### Step-1: Notification of Interest

After the issue of a Request for Interest (RFI), interested Respondents will be invited to submit their Notification of Interest (NoI).

**The NoI shall fulfil all the requirements set in the NoI template detailed in “Annex B - Notification of Interest (NoI)”, including the Confidentiality Undertaking (CU) provided in “Annex D – Confidentiality Undertaking”. The NoI (including the CU) has to be submitted within the due date via the telecom ARTES 4.0 programme website, according to the specified “Idea” format and template. Respondents submitting a NoI will have access to the HydRON-DS data package (including the MATER and any other possible document that might be made available) via a document exchange tool (i.e., SharePoint).**

The Candidate may already include in the NoI the potential subcontractors to demonstrate the background and expertise defined in section 4.2.

### Step-2: Dialogue Phase (Bilaterals)

The aim of this step is to ensure that sufficient information is available for the Respondents to prepare a timely submission of the RFI response.

It is recognised that some further interactions with the Respondents may be required, ESA therefore offers support to all Respondents with a confirmed interest (by means of the Notification of Interest defined in Step-1) in providing further clarifications aimed at supporting the shaping of the response to the RFI (Step-3).

Questions shall be collected via the document exchange tool (i.e., SharePoint) and responded on an individual basis as soon as possible. Bilateral discussions are expected, so on-request dialogue sessions will be organised individually with each Interested Party during this phase. However, the results of such dialogue sessions shall never be interpreted as changing the terms and conditions of the present RFI.

### Step-3: RFI Submission

**The Responses to this Call will need to be submitted with the content as defined in the template provided in Annex C - RFI Response Content, by the defined deadline (Table 2). The RFI will be submitted to ESA via the document exchange tool (i.e., SharePoint).**

In the RFI the Respondent shall provide a preliminary discussion of the role in the consortium, potential business and service model(s), partnership proposition, draft system concept(s) to deliver the requested services as well as the Phase B2/C/D/E proposed study logic and preliminary work-breakdown structure.

Particularly, the Respondent is invited to outline the approach and strategy for commercialisation of services to third parties and justify the assumptions.

**There is no down selection process of any proposals, however, the RFI responses will be used to help preparing the ITT for the next phase and possibly steering the HYDRON-DS requirements and the statement of work.**

### Step-4: Clarification Phase (Bilaterals)

A final Clarification phase, consisting of further Bilaterals with the entities that have submitted an RFI, will complete the process for the current call for Ideas to help ESA prepare the HydRON-DS Phase B2/C/D/E ITT in 2023. This is to ensure understanding of the Respondents’ propositions. Such a clarification round shall never be interpreted as a commitment of the Agency to down select the proposal or place a contract.

## Indicative Timeline

The timeline indicated below is indicative and the Agency reserves the right to modify, extend or shorten such timeline.

|  |  |  |
| --- | --- | --- |
| **Step** | **Event** | **Date (completed by)** |
| 1 | Notification of Interest submission deadline | 29 Jun 2022 |
| 2 | Bilateral Dialogue Phase | 29 Jun - 29 Jul 2022 |
| 3 | RFI submission | 16 Sep 2022 |
| 4 | Clarifications | 19 Sep 2022 – 30Sep 2022 |
|  | *(HydRON-DS Phase B2CDE ITT)* | *TBD (Q3-Q4 2023, goal Q1 2023)* |

Table 2: RFI process indicative schedule.

# RFI Guidelines

## General Guidelines

The RFI response and all correspondence relating to it shall be in English.

**The Agency will treat commercially sensitive or proprietary information confidentially and solely for the purpose of the assessment of the response.**

Expenses incurred in the preparation and dispatch of the RFI response will not be reimbursed. This includes any expenses connected with potential dialogue phase.

The RFI does not bind the Agency in any way to issue an ITT or to place a contract. The Agency reserves the right to issue amendments to the RFI.

The RFI response following “Annex C - RFI Response Content” table of content should not exceed 30 pages.

## Data protection

Respondents are requested to provide some personal data as part of their RFI as requested below. The Agency, while not being subject to national or international laws on Personal Data Protection, ensures a high level of protection of personal data and preserves thereby the dignity and privacy of the individuals concerned (Data Subjects).

The Agency is subject to a Personal Data Protection Framework composed of the below elements and will process and protect the personal data submitted in accordance herewith.

1. The Principles of Personal Data Protection, as adopted by ESA Council Resolution (ESA/C/CCLXVIII/Res. 2 (Final)) adopted on 13 June 2017;
2. The Rules of Procedure for the Data Protection Supervisory Authority, as adopted by ESA Council Resolution (ESA/C/CCLXVIII/Res. 2 (Final)) adopted on 13 June 2017;
3. The Policy on Personal Data Protection (ESA/C/CCLXVIII/Res. 2 (Final)) adopted by the Director General of ESA on 05 February 2018 and effective on 01 March 2018.

Details of this framework can be found via the link given on ESA STAR Publication (<https://esastar-publication-ext.sso.esa.int/> under “Supporting Documentation” 🡪 “Reference Documentation” 🡪 “Administrative Documents”).

Information submitted as response to the RFI as well as information obtained through any competitive or clarification dialogue will be treated by the Agency confidentially as commercially sensitive information.

## Confidentiality Undertaking *(Form to be provided in Step-1)*

Respondents are requested to provide an CU as part of their RFI, template is added in Annex D – Confidentiality Undertaking.

## Use of RFI information

The Agency may share information received from the Respondents with the relevant National Delegations. (Formal consent to such a disclosure is formally provided via the telecom ARTES 4.0 programme website).

## Content of NOI and RFI Responses

The NoI response shall be submitted via the telecom ARTES 4.0 programme website, that will be open for the submission of Ideas (the NoI submission representing a placeholder for the idea). Further modifications of the idea and necessary exchange of documents (including the RFI) will be performed via a document exchange tool (i.e., SharePoint) until the end of the RFI Call.

The NoI (Step-1) and RFI (Step-3) shall include the following:

In Step-1:

Signed Notification of Interest (NoI) including:

* Declaration of interest to respond to RFI as per “Annex B - Notification of Interest (NoI)”.
* Confidentiality Undertaking (CU) as per “Annex D – Confidentiality Undertaking”.

In Step-3:

Signed Cover Letter including:

* A summary of the RFI response.
* The name, telephone and e-mail address of the Respondent contact person to whom all communications relating to its RFI response should be addressed.
* The contact details of the persons responsible for technical and contractual matters.
* The name and function of the legal representative.
* The name of the author(s) of the RFI.

HydRON-DS RFI proposition:

* The RFI proposition should not exceed 30 pages and cover, as a minimum, the topics listed in the table of content defined in in “Annex C - RFI Response Content”.
* The RFI proposition should include a **preliminary cooperation model, addressing a high level design solution for the whole or a part of the mission (i.e. spacecraft – candidate platform, preferably as hosted P/L - , payload, ground stations and HydRON Control Centre), taking in due consideration the top HydRON-DS mission objectives recalled in “Annex A - HydRON-DS main objectives (extract from MATER)”**
* The RFI proposition shall take into account the **preliminary set of high-level requirements defined in the MATER (to be shared with respondents after the NoI submission). It is expected that the proposed HYDRON-DS solution will be compatible with these requirements, although the Proposition may also challenge as appropriate the requirements and justify any proposed deviation**.

All templates are included as annexes to this document as well as provided as an hyperlink in the telecom ARTES 4.0 programme website.

# Annex A - HydRON-DS main objectives (extract from MATER)

Based on the current preliminary Deployment model of the HydRON-DS, the implementation of a Demonstration System is considered the HydRON Vision’s key component and the main pillar to possibly achieve in the future the overall Mission Statement. In particular, the HydRON-DS has the following top-level objectives, which are further elaborated in the subsequent sections:

**Objective 1: technology verification and end-to-end system demonstration, addressing**

* One single end-to-end system demonstration that covers the in-orbit testing of all critical key technologies and end-to-end system functionalities of a space based OTN (e.g., on-board routing, WDM OISLs, Virtual Optical Gateway, optimization, control and management of all space and ground assets).
* Simultaneous space/ground demonstrations for multiple HydRON Users.
* Fostering compatibility of a wider European / Canadian supplier base.

**Objective 2: validation of Operational Concepts in support of Service Demonstration, including**

* Demonstration of networking capabilities, including implementation of representative Data / Control and Management planes and seamless inter-operability with terrestrial high-capacity networks.
* An expandable operational concept (e.g., for a larger amount of OGS, multiple OGN, additional space nodes deployed on different LEO / MEO / GEO orbits)
* Verification that a set of Key Performance Indicators (KPI) or Figures of Merit (FoM) are achieved (e.g., meet service availability according to predicted performances, BER, end-to-end latency, reconfiguration time of space and ground nodes).

**Objective 3: provision of Service Demonstration in support of Service (e.g., a Minimum Viable Service (MVS)), addressing 2 type of HydRON Users:**

* Demo Users, targeting best effort service demonstration to create business opportunities.
* And eventually, Service Users, aiming at committing performances (i.e. Service KPI), for example specified by means of a Service Level Agreement.

Besides the above objectives there are also General and Mission/Performance Objectives, including above all the demonstration of a data rate in excess of 100Gbps.

# Annex B - Notification of Interest (NoI)

Notification of Interest

***[N.B. Use this Template to prepare your Notification of Interest. Once it is complete and internally validated, please remove all captions in red colour, delete all ESA headers/footers, add your own logos, headers/footers prior to finalising your proposal for submission to ESA. The NoI shall be submitted in a searchable and indexed PDF file for easier viewing.***

**[including a COVER LETTER]**

From: **..........** *(****Candidate*** *to insert name of the Entity submitting the Notification of Interest)*

Date: **..........** *(****Candidate*** *to fill in the date of the proposal)*

*To:* ESA / ESTEC - EUROPEAN SPACE RESEARCH AND TECHNOLOGY CENTRE

Keplerlaan 1

2201 AZ NOORDWIJK ZH

The Netherlands

Attn. Ms M. Politano (TIA-PR)

Subject: **ESA-TIA-T-AO-0006**

**Request for Interest in Cooperating on HydRON-DS Phase B2/C/D/E**

Category: ESA Request for Interest (RFI) – Step 1 Notification of Interest (NoI)

Our ref.: Proposal No. **.........** *(****Candidate*** *to insert its proposal reference number)*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dear Sir or Madam,

With reference to the above Request for Interest (RFI), we are pleased to present this Notification of Interest:

1. The Candidate (potential Prime Contractor) is:

***....*** *(full name of company or institute)*

***....*** *(address of its seat)*

Telephone: ........

Nationality (according to ESA Convention’s criteria): ........

VAT Number: …….

ESA Entity Code: *1 000 xxx xxx*

SME *(indicate YES or NO)*

Large Space Integrator *(indicate YES or NO)* ( )

ESA Business Unit Code *(80000xxxxx)*

Country *(ISO Code)*

*(If not registered yet, it should be stated: “not registered yet, registration request made on … (date)”)*

1. The potential Subcontractor(s) presented with the Notification of Interest is (are):

*Please fill in the tables below*

**PROPOSED TEAM Information**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Prime**  **Contractor** | **Subcontractor 1**  **(if applicable)** | **Subcontractor N**  **(if applicable)** |
| Entity Name and Legal Nature ([[1]](#footnote-2)) |  |  |  |
| SME  (indicate YES or NO) |  |  |  |
| Large Space Integrator  (indicate YES or NO) ([[2]](#footnote-3)) |  |  |  |
| ESA Entity Code  (1 000 xxx xxx) ([[3]](#footnote-4)) if applicable |  |  |  |
| ESA Business Unit Code (80000xxxxx) ([[4]](#footnote-5)) if applicable |  |  |  |
| Country (ISO Code) |  |  |  |

1. Name of the proposed Mission name: ………..
2. Brief description of the HYDRON-DS proposition:

Note: this document should be approximately 1-2 pages long and present the partners, their roles and a summary of the intended proposition.

1. Statement of firm intention to submit a RFI response signed by an authorised representative of the Respondent.
2. The contact person of the Candidate to whom all communications relating to this letter should be addressed is the following: ***......*** *(name of contact person(s) as well as fax number, telephone number, e-mail address – it being understood that two (2) contact persons, one technical and one legal/commercial, might be advantageous). Please fill in as needed.*

a) for technical matters as follows:

|  |  |  |
| --- | --- | --- |
|  | To: | With copy to: |
| Name |  |  |
| Telephone No. |  |  |
| e-mail address |  |  |

b) for contractual and administrative matters as follows:

|  |  |  |
| --- | --- | --- |
|  | To: | With copy to: |
| Name |  |  |
| Telephone No. |  |  |
| e-mail address |  |  |

1. for Personal Data Protection matters to be addressed to the Data Protection contact point as follows:

|  |  |
| --- | --- |
|  | To: |
| Name |  |
| Telephone No. |  |
| e-mail address |  |
| Mail Address |  |

1. In regard to the required statements concerning free competition, we hereby certify that:

a) unless otherwise required by law, we will not knowingly disclose, directly or indirectly, any prices to be quoted in the Request for Interest, to any other Candidate not part of the team or competitor

b) no attempt has been made or will be made to induce any other Candidate not part to this NoI or competitor to submit or abstain from submitting an NoI, for the purpose of restricting competition; and

c) no exclusive teaming arrangement with third party(ies) has been made, which would restrict competition because the teaming partner could be considered to be a single source due to technical reasons or other considerations such as legal or geographical (e.g., an extremely limited number of potential participants as a consequence of industrial return requirements),

1. This NoI is valid during the following time period, reckoning from the closing date for NoI submission: ***......*** months
2. By submitting the NoI, I/we the undersigned herewith officially declare that the NoI fulfils the Key Acceptance Factors as listed in the RFI Cover Letter.

on this day …………………

………………………. [Name]

………………………. [Title]

Enclosed: Project Team subcontractor(s) if any

**To be filled for each subcontractor of the Project Team (if applicable)**

**Name of the Company:**

**Contract manager name: Technical manager name:**

**Mailing address: Mailing address:**

**Tel.: Tel.:**

**E-mail: E-mail:**

# Annex C - RFI Response Content

Roughly 30 pages proposal is expected, covering as a minimum the topics listed in the following.

## Respondent Consortium

*[Describe the project organisation indicating the role and responsibilities of each participant, as well as coordination among partners. Describe the competencies offered by the Consortium in relation to the RFI. Identify the countries where work will be carried out]*

## Motivation

*[Describe the expected benefits for the consortium partners with reference to the foreseen market and business opportunities]*

## Mission Overview

*[ Provide a description of the proposed approach to address HYDRON-DS Mission objectives and requirements. Provide background information for the proposed solutions and reference any previous developments which could be leveraged in HYDRON-DS. Discuss evolution towards an operational system]*

## Development Activities

*[Identify the developments required indicating initial TRL and effort / timeline required to achieve target TRL. Provide critical assessment of mission challenges, and introduce possible backup and mitigation strategies]*

## Operational and Regulatory Aspects

*[Detail the legal framework that would be applicable to the safe use of lasers outdoors and data sovereignty and extra-territory data transport to ensure compliance of HYDRON-DS with international and European safety regulations and aeronautical standards and regulations]*

## Development Plan

*[Provide a development schedule identifying the critical path and key decision points]*

## Cost Estimates

*[Provide a ROM cost for each major development activity, together with a justification and main assumptions. Identify major procurement costs. Costs to be presented for each partner.]*

# Annex D – Confidentiality Undertaking

**Confidentiality Undertaking**

To: ESA via the telecom ARTES 4.0 programme website

We herewith declare that any information and data disclosed by the Agency with respect to this RFI, whether orally or in writing shall be considered to be of proprietary nature and therefore be treated strictly confidential.

Hereby we undertake as follows:

1. Not to copy or reproduce or permit the copying or reproduction of proprietary documents or other information or material which is not publicly available (together called “the Material”) obtained from the Agency other than for use in connection with the preparation of our proposal and execution of a contract in case of contract award, and we further undertake not to use nor provide nor disclose nor permit the use, provision or disclosure orally or otherwise, either directly or indirectly of any of the Material nor any copy, summary or extract thereof to any third party other than to:
   1. Other employees of our organisation assigned to carry out work in connection with the proposal work that have a need to know.
   2. The relevant staff of the Agency concerned with the RFI.
   3. Employees of other organisations participating in the proposal preparation who have agreed to this Confidentiality Undertaking.
2. Not to use nor to disclose nor communicate either directly or indirectly to any third party any other information whether written or oral acquired during the course of the Project, except with the prior written consent of the Agency.
3. Not to use, without the prior written consent of the Agency any of the Material except for the purposes of the proposal and/or further in case a contract was awarded to us.

Necessary access data shall be sent to the email address stated below.

Company . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Address . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Phone No . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Email Address . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Name of Contact Person . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Function of Contact Person . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Date: . . . . . . . . . . . . . . . . . Signature: . . . . . . . . . . . . . . . . . . . . . .

1. Specify here the type of business entity to which the company belongs (e.g Limited Company, Société Anonyme, AG etc). [↑](#footnote-ref-2)
2. According to registration with ESA. [↑](#footnote-ref-3)
3. The ESA Entity Code corresponds to the esa-p Vendor Code, applicable to entities registered with ESA and in an ESA Member/Cooperating/Associated State. [↑](#footnote-ref-4)
4. The BU code is assigned when registering in esa-star, applicable to entities registered with ESA and in an ESA Member/Cooperating/Associated State. [↑](#footnote-ref-5)