

**Horizon Europe Programme**

**Specific Application Form**

**HORIZON-INFRA-2025-01-SERV**

**Project proposal – Technical description (Part B)**

**Version 1.0**

**12 May 2025**

**Structure of the Proposal**

The proposal contains two parts:

• **Part A** of the proposal **is generated by the IT system. It is based on the information entered by the participants through the submission system in the Funding & Tenders Portal.** The participants can update the information in the submission system at any time before final submission.

• **Part B** of the proposal is the narrative part that includes three sections that each correspond to an evaluation criterion. Part B needs to be uploaded as a PDF document following the templates downloaded by the applicants in the submission system for the specific call or topic. The templates for a specific call may slightly differ from the example provided in this document.

The electronic submission system is an online wizard that guides you step-by-step through the preparation of your proposal. The submission process consists of 6 steps:

- Step 1: Logging in the Portal

- Step 2: Select the call, topic and type of action in the Portal

- Step 3: Create a draft proposal: Title, acronym, summary, main organisation and contact details

- Step 4: Manage your parties and contact details: add your partner organisations and contact details.

- Step 5: Edit and complete web forms for proposal part A and upload proposal part B

- Step 6: Submit the proposal

|  |
| --- |
| **HISTORY OF CHANGES** |
| **Version** | **Publication date** | **Changes** |
| 1.0 | 12.05.2025 | * Initial version
 |

# **Proposal template Part B: technical description**

***(for full proposals: single stage submission procedure and 2nd stage of a two-stage submission procedure)***

This template is to be used in a single-stage submission procedure or at the 2nd stage of a two-stage submission procedure.

The structure of this template must be followed when preparing your proposal. It has been designed to ensure that the important aspects of your planned work are presented in a way that will enable the experts to make an effective assessment against the evaluation criteria. Sections 1, 2 and 3 each correspond to an evaluation criterion.

Please be aware that proposals will be evaluated as they were submitted, rather than on their potential if certain changes were to be made. This means that only proposals that successfully address all the required aspects will have a chance of being funded. There will be no possibility for significant changes to content, budget and consortium composition during grant preparation.

 **Page limit**: The title, list of participants and sections 1, 2 and 3, together, should not be longer than 100 pages. All tables, figures, references and any other element pertaining to these sections must be included as an integral part of these sections and are thus counted against this page limit. The number of pages included in each section of this template is only **indicative**.

The page limit will be applied automatically. **Please remove all instruction pages that are watermarked.**

If you attempt to upload a proposal longer than the specified limit before the deadline, you will receive an automatic warning and will be advised to shorten and re-upload the proposal. After the deadline, excess pages (in over-long proposals/applications) will be automatically made invisible, and will not be taken into consideration by the experts. The proposal is a self-contained document. Experts will be instructed to ignore hyperlinks to information that is specifically designed to expand the proposal, thus circumventing the page limit.

Please, do not consider the page limit as a target! It is in your interest to keep your text as concise as possible, since experts rarely view unnecessarily long proposals in a positive light.

 The following formatting conditions apply.

The reference font for the body text of proposals is Times New Roman (Windows platforms), Times/Times New Roman (Apple platforms) or Nimbus Roman No. 9 L (Linux distributions).

The use of a different font for the body text is not advised and is subject to the cumulative conditions that the font is legible and that its use does not significantly shorten the representation of the proposal in number of pages compared to using the reference font (for example with a view to bypass the page limit).

The minimum font size allowed is 11 points. Standard character spacing and a minimum of single line spacing is to be used. This applies to the body text, including text in tables.

Text elements other than the body text, such as headers, foot/end notes, captions, formula's, may deviate, but must be legible.

The page size is A4, and all margins (top, bottom, left, right) should be at least 15 mm (not including any footers or headers).

This document is tagged. Do not delete the tags; they are needed for our internal processing of information, mostly for statistical gathering. In that light, please do not move, delete, re-order, alter tags in any way, as they might create problems in our internal processing tools. Tags do not affect or influence the outcome of your application.

|  |
| --- |
| **DEFINITIONS *(Included here for convenience. Final presentation will be different).*** |
| **Critical risk** | A critical risk is a plausible event or issue that could have a high adverse impact on the ability of the project to achieve its objectives. Level of likelihood to occur (Low/medium/high): The likelihood is the estimated probability that the risk will materialise even after taking account of the mitigating measures put in place.Level of severity (Low/medium/high): The relative seriousness of the risk and the significance of its effect. |
| **Deliverable** | A report that is sent to the Commission or Agency providing information to ensure effective monitoring of the project. There are different types of deliverables (e.g. a report on specific activities or results, data management plans, ethics or security requirements).  |
| **Impacts** | Wider long term effects on society (including the environment), the economy and science, enabled by the outcomes of R&I investments (long term). It refers to the specific contribution of the project to the work programme expected impacts described in the destination. Impacts generally occur some time after the end of the project. Example: *The deployment of the advanced forecasting system enables each airport to increase maximum passenger capacity by 15% and passenger average throughput by 10%, leading to a 28% reduction in infrastructure expansion costs.* |
| **Milestone** | Control points in the project that help to chart progress. Milestones may correspond to the achievement of a key result, allowing the next phase of the work to begin. They may also be needed at intermediary points so that, if problems have arisen, corrective measures can be taken. A milestone may be a critical decision point in the project where, for example, the consortium must decide which of several technologies to adopt for further development. The achievement of a milestone should be verifiable. |
| **Objectives** | The goals of the work performed within the project, in terms of its research and innovation content. This will be translated into the project’s results. These may range from tackling specific research questions, demonstrating the feasibility of an innovation, sharing knowledge among stakeholders on specific issues. The nature of the objectives will depend on the type of action, and the scope of the topic. |
| **Outcomes** | The expected effects, over the medium term, of projects supported under a given topic. The results of a project should contribute to these outcomes, fostered in particular by the dissemination and exploitation measures. This may include the uptake, diffusion, deployment, and/or use of the project’s results by direct target groups. Outcomes generally occur during or shortly after the end of the project.Example: *9 European airports adopt the advanced forecasting system demonstrated during the project.* |
| **Pathway to impact**  | Logical steps towards the achievement of the expected impacts of the project over time, in particular beyond the duration of a project. A pathway begins with the projects’ results, to their dissemination, exploitation and communication, contributing to the expected outcomes in the work programme topic, and ultimately to the wider scientific, economic and societal impacts of the work programme destination.  |
| **Research output** | Results generated by the action to which access can be given in the form of scientific publications, data or other engineered outcomes and processes such as software, algorithms, protocols and electronic notebooks. |
| **Results** | What is generated during the project implementation. This may include, for example, know-how, innovative solutions, algorithms, proof of feasibility, new business models, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, trained researchers, new infrastructures, networks, etc. Most project results (inventions, scientific works, etc.) are ‘Intellectual Property’, which may, if appropriate, be protected by formal ‘Intellectual Property Rights’.Example: *Successful large-scale demonstrator: trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management.* |
| **Technology Readiness Level** | See Work Programme General Annexes B |

|  |
| --- |
| **Guidance on the use of generative AI tools for the preparation of the proposal** |
| When considering the use of generative artificial intelligence (AI) tools for the preparation of the proposal, it is imperative to exercise caution and careful consideration. The AI-generated content should be thoroughly reviewed and validated by the applicants to ensure its appropriateness and accuracy, as well as its compliance with intellectual property regulations. Applicants are fully responsible for the content of the proposal (even those parts produced by the AI tool) and must be transparent in disclosing which AI tools were used and how they were utilized. Specifically, applicants are required to:* Verify the accuracy, validity, and appropriateness of the content and any citations generated by the AI tool and correct any errors or inconsistencies.
* Provide a list of sources used to generate content and citations, including those generated by the AI tool. Double-check citations to ensure they are accurate and properly referenced.
* Be conscious of the potential for plagiarism where the AI tool may have reproduced substantial text from other sources. Check the original sources to be sure you are not plagiarizing someone else’s work.
* Acknowledge the limitations of the AI tool in the proposal preparation, including the potential for bias, errors, and gaps in knowledge.
 |

 *Fill in the title of your proposal below.*

**Title of the Proposal**

 *The consortium members are listed in part A of the proposal (application forms). A summary list should also be provided in the table below.*

[This document is tagged. Do not delete the tags; they are needed for processing.] #@APP-FORM-HERI@#

**List of participants** *[e.g. 1 page]*

|  |  |  |
| --- | --- | --- |
| **Participant No. \*** | **Participant organisation name** | **Country** |
| 1 (Coordinator) |  |  |
| 2 |  |  |
| 3 |  |  |

\* Please use the same participant numbering and name as that used in the administrative proposal forms.

**1. Excellence** #@REL-EVA-RE@#

|  |
| --- |
| ***Excellence – aspects to be taken into account.**** Clarity and pertinence of the project’s objectives, and the extent to which the proposed work is ambitious, and goes beyond the state of the art.
* Soundness of the proposed methodology, including the underlying concepts, models, assumptions, interdisciplinary approaches, appropriate consideration of the gender dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society and end users where appropriate.
* The extent to which the access activities (trans-national and/or virtual access) will offer access to the state-of-the-art infrastructures of European interest in the field, high quality services, and will enable users to conduct excellent research.
* The extent to which the project will contribute to facilitating and integrating the access procedures, to improve the services the infrastructures provide and to further develop their on-line services
 |

* *The following aspects will be taken into account only to the extent that the proposed work is within the scope of the work programme topic.*

**1.1 Objectives and ambition** #@PRJ-OBJ-PO@# *[e.g. 4 pages]*

* Briefly describe the objectives of your proposed work. Why are they pertinent to the work programme topic? Are they measurable and verifiable? Are they realistically achievable?
* Describe how your project goes beyond the state-of-the-art, and the extent the proposed work is ambitious. In particular, how the activities for the provision of trans-national and/or Virtual access will offer access to state-of-the-art infrastructures, high quality services, and will enable users to conduct excellent research to address societal challenges. Indicate any exceptional ground-breaking R&I, novel concepts and approaches, new products, services or business and organisational models. Where relevant, illustrate the advance by referring to products and services already available on the market. Refer to any patent or publication search carried out.
* Describe how the participating Research Infrastructures will be integrated to provide, at European and, where relevant, global level, an overarching Research Infrastructure service, contributing to structuring the European Research Area, and, where relevant, global cooperation on Research Infrastructures.
* Describe where the proposed work is positioned in terms of R&I maturity (i.e. where it is situated in the spectrum from ‘idea to application’, or from ‘lab to market’). Where applicable, provide an indication of the Technology Readiness Level, if possible distinguishing the start and by the end of the project.
* *Please bear in mind that advances beyond the state of the art must be interpreted in the light of the positioning of the project. Expectations will not be the same for RIAs at lower TRL, compared with Innovation Actions at high TRLs.*

#§PRJ-OBJ-PO§#

**1.2 Methodology** #@CON-MET-CM@# #@COM-PLE-CP@# *[e.g. 14 pages]*

* Describe and explain the overall methodology, including the concepts, models and assumptions that underpin your work. Explain how this will enable you to deliver your project’s objectives. Refer to any important challenges you may have identified in the chosen methodology and how you intend to overcome them. *[e.g. 10 pages]*
* *This section should be presented as a narrative. The detailed tasks and work packages are described below under ‘Implementation’.*
* Describe any national or international research and innovation activities whose results will feed into the project, and how that link will be established; *[e.g. 1 page]*
* Explain how expertise and methods from different disciplines will be brought together and integrated in pursuit of your objectives. If you consider that an inter-disciplinary approach is unnecessary in the context of the proposed work, please provide a justification. *[e.g. 1/2 page]*
* For topics where the work programme indicates the need for the integration of social sciences and humanities, show the role of these disciplines in the project or provide a justification if you consider that these disciplines are not relevant to your proposed project. *[e.g. 1/2 page]*
* Describe how the gender dimension (i.e. sex and/or gender analysis) is taken into account in the project’s research and innovation content *[e.g. 1 page]. If* you do not consider such a gender dimension to be relevant in your project, please provide a justification.
* *Note: This section is mandatory except for topics which have been identified in the work programme as not requiring the integration of the gender dimension into R&I content.*
* *Remember that that this question relates to the content of the planned research and innovation activities, and not to gender balance in the teams in charge of carrying out the project.*
* *Sex and gender analysis refers to biological characteristics and social/cultural factors respectively. For guidance on methods of sex / gender analysis and the issues to be taken into account, please refer to* [*https://op.europa.eu/en/publication-detail/-/publication/33b4c99f-2e66-11eb-b27b-01aa75ed71a1/language-en*](https://op.europa.eu/en/publication-detail/-/publication/33b4c99f-2e66-11eb-b27b-01aa75ed71a1/language-en)
* Describe how appropriate open science practices are implemented as an integral part of the proposed methodology. Show how the choice of practices and their implementation are adapted to the nature of your work, in a way that will increase the chances of the project delivering on its objectives *[e.g. 1 page]*. If you believe that none of these practices are appropriate for your project, please provide a justification here.
* *Open science is an approach based on open cooperative work and systematic sharing of knowledge and tools as early and widely as possible in the process. Open science practices include early and open sharing of research (for example through preregistration, registered reports, pre-prints, or crowd-sourcing); research output management; measures to ensure reproducibility of research outputs; providing open access to research outputs (such as publications, data, software, models, algorithms, and workflows); participation in open peer-review; and involving all relevant knowledge actors including citizens, civil society and end users in the co-creation of R&I agendas and contents (such as citizen science).*
* *Please note that this question does not refer to outreach actions that may be planned as part of communication, dissemination and exploitation activities. These aspects should instead be described below under ‘Impact’.*
* *Proposals selected for funding under Horizon Europe will need to develop a detailed data management plan (DMP) for making their data/research outputs findable, accessible, interoperable and reusable (FAIR) as a deliverable by month 6 and revised towards the end of a project’s lifetime. The DMP should describe how research outputs (especially research data) generated and/or collected during the project will be managed so as to ensure that they are findable, accessible, interoperable and reusable.*
* *For guidance on open science practices and research data management, please refer to the relevant section in the* [*online manual*](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/om_en.pdf) *on the Funding & Tenders Portal.*

#§CON-MET-CM§# #§COM-PLE-CP§#

**2. Impact** #@IMP-ACT-IA@#

|  |
| --- |
| ***Impact – aspects to be taken into account.**** Credibility of the pathways to achieve the expected outcomes and impacts specified in the work programme, and the likely scale and significance of the contributions due to the project.
* Suitability and quality of the measures to maximise expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.
 |

*The results of your project should make a contribution to the expected outcomes set out for the work programme topic over the medium term, and to the wider expected impacts set out in the ‘destination’ over the longer term.*

*In this section you should show how your project could contribute to the outcomes and impacts described in the work programme, the likely scale and significance of this contribution, and the measures to maximise these impacts.*

**2.1 Project’s pathways towards impact *[****e.g. 4 pages]*

* Provide a **narrative** explaining how the project’s results are expected to make a difference in terms of impact, beyond the immediate scope and duration of the project. The narrative should include the components below, tailored to your project.
1. Describe the unique contribution your project results would make towards (1) the **outcomes** specified in this topic, and (2) the **wider impacts**, in the longer term, specified in the respective destinations in the work programme.
* *Be specific, referring to the effects of your project, and not R&I in general in this field.*
* *State the target groups that would benefit. Even if target groups are mentioned in general terms in the work programme, you should be specific here, breaking target groups into particular interest groups or segments of society relevant to this project.*
* *The outcomes and impacts of your project may:*
	+ - * + *Scientific, e.g. contributing to specific scientific advances, across and within disciplines, creating new knowledge, reinforcing scientific equipment and instruments, computing systems (i.e. research infrastructures);*
				+ *Economic/technological, e.g. bringing new products, services, business processes to the market, increasing efficiency, decreasing costs, increasing profits, contributing to standards’ setting, etc.*
				+ *Societal , e.g. decreasing CO2 emissions, decreasing avoidable mortality, improving policies and decision making, raising consumer awareness.*

*Only include such outcomes and impacts where your project would make a significant and direct contribution. Avoid describing very tenuous links to wider impacts.* *However, include any potential negative environmental outcome or impact of the project including when expected results are brought at scale (such as at commercial level). Where relevant, explain how the potential harm can be managed.*

1. Give an indication of the scale and significance of the project’s contribution to the expected outcomes and impacts, should the project be successful. Provide quantified estimates where possible and meaningful.
* ‘*Scale’ refers to how widespread the outcomes and impacts are likely to be. For example, in terms of the size of the target group, or the proportion of that group, that should benefit over time; ‘Significance’ refers to the importance, or value, of those benefits. For example, number of additional healthy life years; efficiency savings in energy supply.*
* *Explain your baselines, benchmarks and assumptions used for those estimates. Wherever possible, quantify your estimation of the effects that you expect from your project. Explain assumptions that you make, referring for example to any relevant studies or statistics. Where appropriate, try to use only one methodology for calculating your estimates: not different methodologies for each partner, region or country (the extrapolation should preferably be prepared by one partner).*
* *Your estimate must relate to this project only - the effect of other initiatives should not be taken into account.*
1. Describe any requirements and potential barriers - arising from factors beyond the scope and duration of the project - that may determine whether the desired outcomes and impacts are achieved. These may include, for example, other R&I work within and beyond Horizon Europe; regulatory environment; targeted markets; user behaviour. Indicate if these factors might evolve over time. Describe any mitigating measures you propose, within or beyond your project, that could be needed should your assumptions prove to be wrong, or to address identified barriers.
* *Note that this does not include the critical risks inherent to the management of the project itself , which should be described below under ‘Implementation’.*

**2.2 Measures to maximise impact - Dissemination, exploitation and communication** #@COM-DIS-VIS-CDV@# *[e.g. 5 pages, including section 2.3]*

* Describe the planned measures to maximise the impact of your project by providing a first version of your ‘plan for the dissemination and exploitation including communication activities’. Describe the dissemination, exploitation and communication measures that are planned, and the target group(s) addressed (e.g. scientific community, end users, financial actors, public at large).
* *Please remember that this plan is an admissibility condition, unless the work programme topic explicitly states otherwise. In case your proposal is selected for funding, a more detailed ‘plan for dissemination and exploitation including communication activities’ will need to be provided as a mandatory project deliverable within 6 months after signature date. This plan shall be periodically updated in alignment with the project’s progress.*
* *Communication[[1]](#footnote-1),[[2]](#footnote-2) measures should promote the project throughout the full lifespan of the project. The aim is to inform and reach out to society and show the activities performed, and the use and the benefits the project will have for citizens. Activities must be strategically planned, with clear objectives, start at the outset and continue through the lifetime of the project. The description of the communication activities needs to state the main messages as well as the tools and channels that will be used to reach out to each of the chosen target groups.*
* *All measures should be proportionate to the scale of the project, and should contain concrete actions to be implemented both during and after the end of the project, e.g. standardisation activities. Your plan should give due consideration to the possible follow-up of your project, once it is finished. In the justification, explain why each measure chosen is best suited to reach the target group addressed. Where relevant, and for innovation actions, in particular, describe the measures for a plausible path to commercialise the innovations.*
* *If exploitation is expected primarily in non-associated third countries, justify by explaining how that exploitation is still in the Union’s interest.*
* *Describe possible feedback to policy measures generated by the project that will contribute to designing, monitoring, reviewing and rectifying (if necessary) existing policy and programmatic measures or shaping and supporting the implementation of new policy initiatives and decisions.*
* Outline your strategy for the management of intellectual property, foreseen protection measures, such as patents, design rights, copyright, trade secrets, etc., and how these would be used to support exploitation.
* *If your project is selected, you will need an appropriate consortium agreement to manage (amongst other things) the ownership and access to key knowledge (IPR, research data etc.). Where relevant, these will allow you, collectively and individually, to pursue market opportunities arising from the project.*
* *If your project is selected, you must indicate the owner(s) of the results (results ownership list) in the final periodic report.*

#§COM-DIS-VIS-CDV§#

**2.3 Summary**

Provide a summary of this section by presenting in the canvas below the key elements of your project impact pathway and of the measures to maximise its impact.

**KEY ELEMENT OF THE IMPACT SECTION**

|  |
| --- |
| **SPECIFIC NEEDS** |
| *What are the specific needs that triggered this project?*Example 1Most airports use process flow-oriented models based on static mathematical values limiting the optimal management of passenger flow and hampering the accurate use of the available resources to the actual demand of passengers.Example 2Electronic components need to get smaller and lighter to match the expectations of the end-users. At the same time there is a problem of sourcing of raw materials that has an environmental impact. |

|  |
| --- |
| **D & E & C MEASURES** |
| What dissemination, exploitation and communication measures will you apply to the results? Example 1**Exploitation:** Patenting the algorithmic model.**Dissemination towards the scientific community and airports**: Scientific publication with the results of the large-scale demonstration.**Communication towards citizens:** An event in a shopping mall to show how the outcomes of the action are relevant to our everyday lives.Example 2**Exploitation of the new product:** Patenting the new product;Licencing to major electronic companies. **Dissemination towards the scientific community and industry:** Participating at conferences; Developing a platform of material compositions for industry; Participation at EC project portfolios to disseminate the results as part of a group and maximise the visibility vis-à-vis companies. |

|  |
| --- |
| **EXPECTED RESULTS** |
| What do you expect to generate by the end of the project? Example 1**Successful large-scale demonstrator:****Successful large-scale demonstrator:** Trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management.**Algorithmic model:**Novel algorithmic model for proactive airport passenger flow management.Example 2Publication of a **scientific discovery on transparent electronics.****New product:** More sustainable electronic circuits. **Three PhD students trained.**  |

|  |
| --- |
| **TARGET GROUPS** |
| *Who will use or further up-take the results of the project? Who will benefit from the results of the project?* Example 1**9 European airports**:Schiphol, Brussels airport, etc.**The European Union aviation safety agency.****Air passengers (indirect).**Example 2**End-users**: consumers of electronic devices.**Major electronic companies**: Samsung, Apple, etc.**Scientific community** (field of transparent electronics). |

|  |
| --- |
| **OUTCOMES** |
| *What change do you expect to see after successful dissemination and exploitation of project results to the target group(s)?*Example 1**Up-take by airports:** 9 European airports adopt the advanced forecasting system demonstrated during the project.Example 2**High use of the scientific discovery published** (measured with the relative rate of citation index of project publications).A **major electronic company** (Samsung or Apple) **exploits/uses the new product** in their manufacturing. |

|  |
| --- |
| **IMPACTS** |
| *What are the expected wider scientific, economic and societal effects of the project contributing to the expected impacts outlined in the respective destination in the work programme?*Example 1**Scientific:**  New breakthrough scientific discovery on passenger forecast modelling.**Economic:** Increased airport efficiencySize: 15% increase of maximum passenger capacity in European airports, leading to a 28% reduction in infrastructure expansion costs.Example 2**Scientific:** New breakthrough scientific discovery on transparent electronics. **Economic/Technological:** A new market for touch enabled electronic devices. **Societal:** Lower climate impact of electronics manufacturing (including through material sourcing and waste management). |

#§IMP-ACT-IA§#

1. **Quality and efficiency of the implementation** #@QUA-LIT-QL@# #@WRK-PLA-WP@#

|  |
| --- |
| ***Quality and efficiency of the implementation – aspects to be taken into account**** *Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall*
* *Capacity and role of each participant, and extent to which the consortium as a whole brings together the necessary expertise.*
 |

**3.1 Work plan and resources** *[e.g. 30 to 69 pages – including tables]*

Please provide the following:

* brief presentation of the overall structure of the work plan;
* timing of the different work packages and their components (Gantt chart or similar);
* graphical presentation of the components showing how they inter-relate (Pert chart or similar).
* detailed work description, i.e.:
	+ a list of work packages (table 3.1a);
	+ a description of each work package (table 3.1b);
	+ a list of deliverables (table 3.1c);
* *Give full details. Base your account on the logical structure of the project and the stages in which it is to be carried out.* *Each work package should be a substantial part of the work plan, and the* *number of work packages should be proportionate to the scale and complexity of the project.*
* *Structure each work package by breaking it down into tasks. If tasks are not appropriate, work packages can be organised according to other criteria (e.g., according to the type of work or thematically). For each task or element of the work package, describe all activities to be carried out and quantify them (e.g., number of protocols, tests, measurements, combinations, study subjects, conferences, publications, etc.). Provide enough detail to clarify who will do this work and why it is needed for the project, (e.g., the level of qualification and number of person-months for personnel, as well as the requested equipment, consumables, meetings, etc.), to justify the proposed resources and so that progress can be monitored, including by the Commission.*
* *Resources assigned to work packages should be in line with their objectives and deliverables. You are advised to include a distinct work package on ‘project management’, specific work packages for access provision activities (trans-national and/or virtual access), and to give due visibility in the work plan to ‘data management’ ‘dissemination and exploitation’ and ‘communication activities’, either with distinct tasks or distinct work packages.*
* *You will be required to update the ‘plan for the dissemination and exploitation of results including communication activities’, and a ‘data management plan’, (this does not apply to topics where a plan was not required.) This should include a record of activities related to dissemination and exploitation that have been undertaken and those still planned.*
* *Please make sure the information in this section matches the costs as stated in the budget table in section 3 of the application forms, and the number of person months, shown in the detailed work package descriptions.*
* a list of milestones (table 3.1d);
* a list of critical risks, relating to project implementation, that the stated project's objectives may not be achieved. Detail any risk mitigation measures. You will be able to update the list of critical risks and mitigation measures as the project progresses (table 3.1e);
* a table showing number of person months required (table 3.1f);
* a table showing description and justification of subcontracting costs for each participant (table 3.1g);
* a table showing justifications for ‘purchase costs’ (table 3.1h) for participants where those costs exceed 15% of the personnel costs (according to the budget table in proposal part A);
* if applicable, a table showing justifications for ‘other costs categories’ (table 3.1i).
* if applicable, a table showing in-kind contributions from third parties (table 3.1j)
* a summary of the trans-national and/or virtual access to be provided (table 3.1k).

**3.2 Capacity of participants and consortium as a whole** #@CON-SOR-CS@# #@PRJ-MGT-PM@# *[e.g. 3 pages]*

 *The individual participants of the consortium are described in a separate section under Part A. There is no need to repeat that information here.*

* Describe the consortium. How does it match the project’s objectives, and bring together the necessary disciplinary and inter-disciplinary knowledge. Show how this includes expertise in social sciences and humanities, open science practices, and gender aspects of R&I, as appropriate. Include in the description affiliated entities and associated partners, if any.
* Show how the partners will have access to critical infrastructure needed to carry out the project activities.
* Describe how the members complement one another (and cover the value chain, where appropriate)
* In what way does each of them contribute to the project? Show that each has a valid role, and adequate resources in the project to fulfil that role.
* If applicable, describe the industrial/commercial involvement in the project to ensure exploitation of the results and explain why this is consistent with and will help to achieve the specific measures which are proposed for exploitation of the results of the project (see section 2.2).
* **Other countries and international organisations**: If one or more of the participants requesting EU funding is based in a country or is an international organisation that is not automatically eligible for such funding (entities from Member States of the EU, from Associated Countries and from one of the countries in the exhaustive list included in the Work Programme General Annexes B are automatically eligible for EU funding), explain why the participation of the entity in question is essential to successfully carry out the project.

#§CON-SOR-CS§# #§PRJ-MGT-PM§#

**Tables for section 3.1**

 *Use plain text for the tables in section 3.1. If the proposal is invited to start Grant Agreement preparation, these tables will have to be encoded in the grant management IT tool, where no graphics or special formats are supported.*

**Table 3.1a: List of work packages**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Work package No** | **Work Package Title** | **Lead Participant No** | **Lead Participant Short Name** | **Person-Months** | **Start Month** | **End month** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

**Table 3.1b: Work package description**

**For each work package:**

|  |  |
| --- | --- |
| **Work package number**  | 8 |
| **Work package title[[3]](#footnote-3)** | Hadron AI & Quantum Technologies (HAQT) |

 *Participants involved in each WP and their efforts are shown in table 3.1f. Lead participant and starting and end date of each WP are shown in table 3.1a.).*

|  |
| --- |
| **Objectives**Hadron physics seeks to unravel the mechanisms of the strong interaction across energy scales, focusing on how quarks and gluons bind to form hadrons, and on uncovering the origins of nucleon spin and mass. Addressing these questions requires precise data from leading accelerator facilities like CERN, DESY, ELSA, GSI/FAIR, MAMI, EIC, and Jefferson Lab, where advanced detectors are in use. However, the petabyte-scale, high-dimensional datasets produced surpass the capabilities of traditional analysis methods, and increasingly complex detectors call for more sophisticated computational and experimental techniques.WP8 aims to leverage artificial intelligence (AI), machine learning (ML), and quantum computing (QC) to advance research in nuclear and hadron physics, while building infrastructure, fostering collaborations, and training the next generation of scientists. Key innovations include:* ML-Tune: a ML digital twin for accelerator optimization.
* SMART-ReAD:  an AI-driven ultra-fast detector readout.
* AIT4HP: an open-access AI toolkit for theory–experiment.
* HEQUVA: a hybrid quantum–analogue simulation platform.

These advanced technologies will be applied across the full pipeline of nuclear and particle physics experiments, from accelerator management and data acquisition to data processing, physics observable extraction, and theoretical interpretation, enhancing efficiency and maximizing the scientific return on the substantial investments in European research infrastructures.**Description of work**The initiative is organized into four interlinked tasks, each addressing a specific area of innovation:Task 1: ML-Guided Accelerator Operation and Optimization (ML-Tune)This task applies advanced machine learning techniques to automate, optimize, and accelerate the operation of large-scale accelerator facilities, using the FAIR Super-FRS as the primary test case. The goals are to reduce setup and tuning times while delivering equal or better quality and transmission, ultimately increasing experimental efficiency and reproducibility.Key activities include:* Developing a high-fidelity ion-optical model of the Super-FRS based on detailed field maps and magnet calibration data, enabling multi-fidelity optimization by combining fast simulations with online measurements.
* Implementing ML-based tools—including classification models, reinforcement learning, Bayesian optimization, and physics-informed simulations—using the open-source Geoff framework (developed by GSI/CERN).
* Experimental validation during FRS tests and Super-FRS commissioning, scaling to full operation (Super-FRS).
* Establishing a transferable ML framework applicable to other accelerator facilities and experimental setups, enhancing decision-making in complex experimental environments.

The project aligns directly with the goals of Transnational Access infrastructures by enhancing the accessibility and usability of large-scale research facilities through intelligent automation. The Geoff framework will be used to support Virtual Access, enabling supervised remote configuration and real-time monitoring of ML-driven optimization processes. By integrating Role-Based Access Control (RBAC) systems, as implemented at CERN, the framework ensures secure, restricted, and auditable remote operations in compliance with site-specific safety and security regulations. The tools, workflows, and interfaces developed under this task will be disseminated as open-source resources, providing a model for Virtual Access strategies at other accelerator facilities and supporting broader community engagement.Name of the infrastructure: FAIR FRS, Super-FRS and SIS18 Accelerator Facilities (including digital twin & ML optimization environment)Location: GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, GermanyWebsite: https://www.gsi.deAnnual operating costs: €XX,XXX (to be specified, since other groups will have GSI/FAIR as ref facility, the Steering Committee will provide a unified estimate)Description: The FAIR Super-FRS and SIS18 accelerators are world-class facilities for high-intensity heavy-ion and exotic nuclei beams. Access is offered via a digital twin and ML-based optimization tools (Geoff framework), enabling users to remotely tune beams and conduct experiment planning. The infrastructure supports research in nuclear structure, hadron physics, and accelerator physics, with unique capabilities in automated high-fidelity beam optimization.Services currently offered: Remote access to ML-driven optimization, experimental validation support, and virtual monitoring dashboards. The facility has hosted international users from 50 countries per year, demonstrating strong demand for remote ML-enabled access.Task 2: Embedded AI for Detector Front-End Processing (SMART-ReAD)This task develops AI-driven electronics platforms for real-time signal processing directly at or near the detector front-end, reducing data transfer and computational requirements compared to traditional workflows. Key signal features (position, energy, and timing) will be efficiently extracted using neural networks and decision trees implemented on FPGAs, and the custom analogue ML-ASIC (ANNA).Key activities include:* Combining Resistive Silicon Detectors (RSDs) with the ANNA ASIC to build a low-power tracker demonstrator suitable for accelerator tests.
* Extending the platform to other detector types such as high-Z semiconductors (Ge, CdTe/CZT) and scintillators, enabling embedded particle identification through pulse-shape analysis.
* Prototyping, validating, and deploying the system in physics infrastructures to improve real-time event processing for large-scale experiments.
* Exploring broader applications in medical imaging, hadron therapy, and industrial contexts, demonstrating the versatility and impact of embedded AI for high-throughput signal processing.

This task supports Transnational Access by providing remote access to the demonstrator setup for testing, calibration, and data collection. Users can run experiments, monitor detector responses, and interact with embedded AI workflows under secure, supervised conditions. This access extends to smaller institutions and researchers with limited local infrastructure, enabling hands-on experience with state-of-the-art AI-enabled detectors. The results, including hardware designs, firmware, AI models, and analysis workflows, will be shared openly to facilitate reproducibility, collaborative development, and future integration into other European accelerator and detector facilities.Name of the infrastructure: AI-Enabled Detector Testbeds (including RSD-ANNA trackers and FPGA/ASIC platforms)Location: CERN (CH)Website: home.cernAnnual operating costs: €XX,XXX (To be specified; since other groups will have CERN as ref facility, the Steering Committee will provide a unified estimate)Description: A testbed for embedded AI electronics, including custom ASICs and FPGA platforms for real-time particle tracking and signal processing. Unique in Europe for its combination of low-power AI processing and integration with multiple detector types (semiconductors, scintillators). Supports nuclear, hadron, medical imaging, and industrial research.Services currently offered: Remote operation of detectors, AI model training, calibration, and real-time event processing. Open to users from multiple institutions; provides training in hardware, firmware, and analysis workflows.Task 3: AI-Driven Data Analysis and Hadron Physics Toolkit (AIT4HP**)**This task develops a modular open-access AI toolkit to advance the analysis of large high-dimensional datasets in hadron physics, bridging experimental and theoretical expertise. AIT4HP provides tools for the full data lifecycle, from event reconstruction and particle identification to detector-effect unfolding, Monte Carlo generation, and theoretical interpretation. Applications include hadron spectroscopy (determination of resonance properties, and final-state interactions) and nucleon structure studies (extraction of GPDs, CFFs, and multidimensional parton distributions).Key activities include:* Developing AI workflows for detector-effect unfolding and particle ID, starting with datasets from CLAS12 (JLab), COMPASS (CERN), and ePIC (EIC) pseudodata.
* Implementing AI-driven event selection to improve signal purity for high-interest exclusive reactions.
* Standardizing workflows to extract physics observables (cross sections, asymmetries, structure functions, scattering amplitudes) for reproducibility and cross-experiment interoperability.
* Integrating AI with theoretical frameworks (EFTs, dispersion relations) to interpret the extracted observables, exploring lattice QCD and quantum many-body modeling, and linking medium-energy datasets to high-energy collider measurements.
* Offering training, workshops, tutorials, and virtual platforms for early-career researchers, promoting sustainable adoption of AI tools.

AIT4HP will support Virtual Transnational Access for ensuring that the AI toolkit and workflows are accessible to the broader hadron physics community regardless of geographic or institutional limitations. Through a dedicated virtual platform, researchers from across Europe and associated countries will be able to remotely access standardized datasets, pre-trained AI models, and modular workflows for event reconstruction, detector unfolding, particle identification, and physics observable extraction. This access will be complemented by cloud-based computational resources hosted by consortium institutions, allowing users to run and adapt AI workflows without the need for significant local infrastructure.The platform will also integrate interactive training environments and demonstrator datasets from flagship experiments such as CLAS12 (JLab), COMPASS (CERN), and ePIC (EIC). It will enable researchers, particularly from smaller institutions, from new groups entering the field, and young scientists, to experiment with AI-driven analysis in realistic physics scenarios. Users will have the opportunity to upload their own datasets for processing within the same environment, benefiting from optimized workflows and community-driven benchmarking.To ensure effective uptake, the virtual access framework will be tightly connected to the training and dissemination work package, with workshops, tutorials, and user guides designed to help both early-career and experienced researchers exploit the toolkit’s full potential. All software, workflows, and documentation will be openly disseminated, fostering reproducibility and cross-facility interoperability.Name of the infrastructure: Cloud-Based AI/ML Hadron Physics PlatformLocation: Distributed consortium computing centers (JLab CLAS12, CERN COMPASS, EIC ePIC pseudodata, hosted in EU partner institutions)Website: TBD (project-specific platform)Annual operating costs: €30,000 (cost of personnel for managing the virtual facility)Description: Modular, open-access AI toolkit for event reconstruction, particle ID, detector-effect unfolding, and physics observable extraction. Enables new workflows bridging experimental and theoretical research in hadron physics. Provides access to large high-dimensional datasets from flagship experiments. Supports training of early-career researchers.Services currently offered: Remote cloud access to datasets, pre-trained AI models, standardized analysis workflows, tutorials, and virtual workshops. Enables users from institutions with limited local infrastructure to perform cutting-edge hadron physics research.Task 4: Quantum Computing and Analogue Quantum Simulation for Hadron and Nuclear Physics (HEQUVA)This task explores quantum computing (QC) and analogue quantum simulation to address key unsolved problems in hadron and nuclear physics, while establishing infrastructure, fostering collaborations, and training researchers. The focus is on developing quantum algorithms and simulators for real-time dynamics, finite-density systems, and non-equilibrium phenomena. Key activities include:* Identifying and refining QC algorithms to study fragmentation functions, transverse momentum distributions, finite-density hadronic matter, non-equilibrium heavy-ion systems, and nuclear structure phenomena.
* Testing and benchmarking algorithms on 50-qubit IGFAE-CESGA, DESY-Zeuthen systems, and other platforms.
* Establishing an analogue quantum simulation lab at IGFAE-CESGA, including trapped-ion computers and the QMIO system.
* Exploring applications in materials science, drug discovery, energy, and industry.
* Providing networked training events and tutorials integrated into major conferences, giving hadron physicists hands-on QC experience.

Virtual Transnational Access is a central component of this task, enabling remote access to cloud-based quantum computing platforms and analogue simulators. This will allow hadron physicists without prior QC expertise to learn to use the platforms, develop demonstration codes, and rapidly gain practical skills. It will also provide researchers from smaller institutions with the computational access and expertise needed to design and implement algorithms, ensuring that talent from across Europe and associated countries can contribute. All algorithms, simulation protocols, and training materials developed in this task will be openly disseminated to ensure reproducibility and broad community benefit.Name of the infrastructure: IGFAE-CESGA Quantum Computing & Analogue Simulation LabLocation: Galician Institute of High Energy Physics (IGFAE), University of Santiago de Compostela, SpainWebsite: www.igfae.usc-es,  https://www.cesga.esAnnual operating costs: €12,000Description: Access to quantum computing hardware (50-qubit IGFAE-CESGA, DESY-Zeuthen platforms) and analogue quantum simulators (trapped ions and QMIO). State-of-the-art infrastructure for simulating nuclear and hadron physics phenomena, including non-equilibrium dynamics, finite-density systems, and many-body quantum interactions. Opens new research areas in quantum computing applied to hadron/nuclear physics.Services currently offered: Remote access to quantum simulators and cloud QC platforms, guidance by expert staff, training workshops, and interactive tutorials. Infrastructure supports international collaborations, and users from multiple countries have already participated in pilot programs.**Unified Transnational Access & Virtual Access Framework**By design, each task’s Transnational Access (TNA) and Virtual Access (VA) components are interoperable and mutually reinforcing: Task 1 provides remote accelerator optimization frameworks, Task 2 delivers online access to AI-enabled detector demonstrators, Task 3 opens a collaborative platform for AI-based hadron physics analysis, and Task 4 offers cloud-based quantum computing and simulation resources. Together, they form a coherent European access ecosystem, ensuring that researchers, regardless of location or institutional resources, can engage with cutting-edge tools, data, and infrastructure in hadron and nuclear physics.**Modality of Access**HAQT provides virtual and trans-national access to all platforms and tools developed in WP8:* Virtual access: researchers can remotely access AIT4HP, cloud-based quantum computing platforms, and analogue quantum simulators through secure web-based interfaces. Users can upload datasets, run AI workflows, develop and test quantum algorithms, and interact with detector or accelerator demonstrators.
* Trans-national access: selected users or user groups can physically visit host facilities, e.g., FAIR Super-FRS (Germany), CERN (Swizzerland), IGFAE-CESGA (Spain), JLab CLAS12 (USA) to conduct experiments or training sessions.

Expected outputs include processed datasets, physics observables, optimized AI workflows, quantum algorithms, and technical reports, enabling reproducible and high-impact research.**Support Offered**HAQT provides comprehensive support to all users:* Scientific support: mentorship from leading experts in hadron physics, AI/ML, and quantum computing. Access to curated datasets, pre-trained AI models, and cloud resources.
* Technical support: assistance in setting up workflows, running simulations, and troubleshooting hardware or software.
* Logistic support for trans-national users: guidance on facility access, safety, and experiment setup.

This support builds on existing infrastructures and routines at host facilities, ensuring a high-quality scientific environment that stimulates collaborative and innovative research.**Outreach to New Users*** HAQT will attract new users via a dedicated project web page, workshops, and tutorials.
* Special emphasis will be given to researchers from smaller institutions, SMEs, and emerging scientific areas, providing access to high-end computational and experimental resources otherwise unavailable locally.
* EU funding ensures broader European participation, creating new opportunities for users to engage with cutting-edge AI and quantum technologies.
* User engagement and participation metrics will be tracked to monitor growth in virtual and trans-national access.

**Review Procedure*** Virtual and trans-national access activities will be assessed annually by the leadership of the HORIZON2025-INFRA project.
* Reviews will evaluate performance, usability, scientific output, and community impact.
* Assessment reports, and documenting outcomes will be submitted as deliverables to the European Commission.

**Impact**By combining AI, ML, embedded electronics, and quantum computing, HAQT will:* Enable enhanced, high-fidelity data analysis and detector operation.
* Reduce experimental setup times and improve beam quality.
* Integrate modern computational tools with state-of-the-art theoretical modeling to extract fundamental physics knowledge.
* Build sustainable infrastructure, train early-career researchers, and foster global collaborations.

Aligned with upcoming major experiments running in EU and overseas facilities (COMPASS, CLAS12, ePIC) and European leadership in nuclear and hadron physics, the initiative ensures long-term scientific, technological, and societal impact. |

**Table 3.1c: List of Deliverables[[4]](#footnote-4)**

Only include deliverables that you consider essential for effective project monitoring.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Number** | **Deliverable name** | **Short description** | **Work package number**  | **Short name of lead participant**  | **Type** | **Dissemination level** | **Delivery date****(in months)** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

|  |
| --- |
| **KEY** Deliverable numbers in order of delivery dates. Please use the numbering convention <WP number>.<number of deliverable within that WP>. For example, deliverable 4.2 would be the second deliverable from work package 4.**Type:** Use one of the following codes: R: Document, report (excluding the periodic and final reports) DEM: Demonstrator, pilot, prototype, plan designs DEC: Websites, patents filing, press & media actions, videos, etc.DATA: Data sets, microdata, etc.DMP: Data management planETHICS: Deliverables related to ethics issues. SECURITY: Deliverables related to security issuesOTHER: Software, technical diagram, algorithms, models, etc.**Dissemination level:** Use one of the following codes: PU – Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project’s page)SEN – Sensitive, limited under the conditions of the Grant Agreement Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444Classified C-UE/EU-C – EU CONFIDENTIAL under the Commission Decision No2015/444Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444**Delivery date**Measured in months from the project start date (month 1) |

**Table 3.1d: List of milestones**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Milestone number** | **Milestone name** | **Related work package(s)** | **Due date (in month)** | **Means of verification** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |
| --- |
| **KEY****Due date**Measured in months from the project start date (month 1)**Means of verification** Show how you will confirm that the milestone has been attained. Refer to indicators if appropriate. For example: a laboratory prototype that is ‘up and running’; software released and validated by a user group; field survey complete and data quality validated. |

**Table 3.1e: Critical risks for implementation** #@RSK-MGT-RM@#

|  |  |  |
| --- | --- | --- |
| **Description of risk (indicate level of (i) likelihood, and (ii) severity: Low/Medium/High)** | **Work package(s) involved** | **Proposed risk-mitigation measures** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

|  |
| --- |
| **Definition critical risk:** A critical risk is a plausible event or issue that could have a high adverse impact on the ability of the project to achieve its objectives. **Level of likelihood to occur: Low/medium/high**The likelihood is the estimated probability that the risk will materialise even after taking account of the mitigating measures put in place.**Level of severity: Low/medium/high**The relative seriousness of the risk and the significance of its effect. |

#§RSK-MGT-RM§#

**Table 3.1f: Summary of staff effort**

*Please indicate the number of person/months over the whole duration of the planned work, for each work package, for each participant. Identify the work-package leader for each WP by showing the relevant person-month figure in bold.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **WPn** | **WPn+1** | **WPn+2** | **Total Person-****Months per Participant** |
| **Participant Number/Short Name**  |  |  |  |  |
| **Participant Number/****Short Name**  |  |  |  |  |
| **Participant Number/****Short Name**  |  |  |  |  |
| **Total Person Months** |  |  |  |  |

**Table 3.1g: ‘Subcontracting costs’ items**

For each participant describe and justify the tasks to be subcontracted (please note that core tasks of the project should not be sub-contracted).

|  |
| --- |
| **Participant Number/Short Name** |
|  | **Cost (€)** | **Description of tasks and justification** |
| **Subcontracting**  |  |  |

**Table 3.1h: ‘Purchase costs’ items (travel and subsistence, equipment and other goods, works and services)**

Please complete the table below for each participant if the purchase costs (i.e. the sum of the costs for ’travel and subsistence’, ‘equipment’, and ‘other goods, works and services’) exceeds 15% of the personnel costs for that participant (according to the budget table in proposal part A). The record must list cost items in order of costs and starting with the largest cost item, up to the level that the remaining costs are below 15% of personnel costs.

|  |
| --- |
| **Participant Number/Short Name** |
|  | **Cost (€)** | **Justification** |
| **Travel and subsistence**  |  |  |
| **Equipment**  |  |  |
| **Other goods, works and services** |  |  |
| **Remaining purchase costs (<15% of pers. Costs)** |  |  |
| **Total** |  |  |

**Table 3.1i: ‘Other costs categories’ items (e.g. internally invoiced goods and services)**

Please complete the table below for each participant that would like to declare costs under other costs categories (e. g. internally invoiced goods and services), irrespective of the percentage of personnel costs.

|  |
| --- |
| **Participant Number/Short Name** |
|  | **Cost (€)** | **Justification** |
| **Internally invoiced goods and services** |  |  |
| **…** |  |  |

**Table 3.1j: ‘In-kind contributions’ provided by third parties**

Please complete the table below for each participant that will make use of in-kind contributions (non-financial resources made available free of charge by third parties). In kind contributions provided by third parties free of charge are declared by the participants as eligible direct costs in the corresponding cost category (e.g. personnel costs or purchase costs for equipment).

If the contributions are research infrastructure services, please specify the estimated number of units of access to be provided under the project (even if this can vary depending from the users’ requests), whether the cost of the services will be calculated on the basis of a unit cost, as actual costs or as a combination of the two, and the related total costs that will be charged by the participants which use them to provide access

|  |
| --- |
| **Participant Number/Short Name** |
| **Third party name** | **Category** | **Cost (€)** | **Justification** |
|  | **Select between**Seconded personnelTravel and subsistenceEquipmentOther goods, works and servicesInternally invoiced goods and services  |  |  |
|  |  |  |  |

**Table 3.1k: Summary of trans-national/virtual access provision**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Access provider short name[[5]](#footnote-5)*** | ***Short name of infrastructure*** | ***Installation*** | ***Installation Country code[[6]](#footnote-6)*** | ***Type of access[[7]](#footnote-7)*** | ***Unit of access*** | ***Estimated quantity of access to be provided*** | ***Unit cost (UC) (€)[[8]](#footnote-8)*** | ***Access costs[[9]](#footnote-9)*** | ***Estimated number of users*** | ***Estimated number of applications\**** |
| ***Nr[[10]](#footnote-10)*** | ***Short name*** | ***On the basis of UC*** | ***As actual costs*** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

*\* Column to be mandatorily filled in for trans-national access only. Not to be filled in for virtual access.*

*Please calculate your access costs as follows:*

***Access costs for trans-national access provision*** *can be supported on the basis of unit costs calculated according to the methodology indicated in the relevant sections of the ‘*[*Decision authorising the use of unit costs for the costs of providing trans-national and virtual access in Research Infrastructures actions under the Horizon Europe Programme*](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/unit-cost-decision-research-infrastructures_horizon-euratom_en.pdf)*’, through the reimbursement of the actual eligible costs specifically incurred for providing access to the research teams selected for support under the project, or through a combination of the two previous modalities. Only one method of reimbursement may be used for one installation. For facilitation purposes, the unit cost for an installation may be calculated by using the first part of the Excel table available on the topic page. Where reimbursement is based on actual costs, these costs may be estimated by using the second part of the same Excel table. Where reimbursement is based on a combination of a unit cost and actual costs, both parts of the table may be used. In this case, the Excel table will also show which costs are to be reimbursed under which method.*

***Access costs for virtual access provision*** *can be supported on the basis of unit costs calculated according to the methodology indicated in the relevant sections of the ‘*[*Decision authorising the use of unit costs for the costs of providing trans-national and virtual access in Research Infrastructures actions under the Horizon Europe Programme*](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/unit-cost-decision-research-infrastructures_horizon-euratom_en.pdf)*’, through the reimbursement of the actual eligible costs specifically incurred for providing under the grant the expected quantity of access indicated in this table, or through a combination of the two previous modalities. Only one method of reimbursement may be used for one installation. For facilitation purposes, the unit cost for an installation may be calculated by using the first part of the Excel table available on the topic page. Where reimbursement is based on actual costs, these costs may be estimated by using the second part of the same Excel table. Where reimbursement is based on a combination of a unit cost and actual costs, both parts of the table may be used. In this case, the Excel table will also show which costs are to be reimbursed under which method.*

#§QUA-LIT-QL§# #§WRK-PLA-WP§#

**ANNEXES TO PROPOSAL PART B**

Some calls may ask to upload annexes to proposal part B. The annexes must be uploaded as separate documents in the submission system. The most common annexes to be uploaded in Horizon Europe are (standard templates are published in the Funding & Tenders portal):

* **CLINICAL TRIALS:** Annex with information on clinical trials.
* **FINANCIAL SUPPORT TO THIRD PARTIES:** Annex with information on financial support to third parties.
* **CALLS FLAGGED AS SECURITY SENSITIVE:** Annex with information on security aspects.
* **ETHICS:** ethics self-assessment should be included in proposal part A. However, in calls where several serious ethics issues are expected, the character limited in this section of proposal part A may not be sufficient for participants to give all necessary information. In those cases, participants may include additional information in an annex to proposal part B.
1. ###  *See the Funding and Tenders Portal FAQ on how to address* [*communication activities*](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq/930)

 [↑](#footnote-ref-1)
2. For further guidance on communicating EU research and innovation for project participants, please refer to the [Online Manual](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/om_en.pdf) on the Funding & Tenders Portal [↑](#footnote-ref-2)
3. The title of work packages focusing on access provision must be preceded by the indication of the type of access activity (TA for transnational access, VA for virtual access, TA/VA for both) and the number of work package for that activity; TA1, TA2, …., VA1, VA2,. [↑](#footnote-ref-3)
4. You must include a data management plan (DMP) and a ‘plan for dissemination and exploitation including communication activities as distinct deliverables within the first 6 months of the project. The DMP will evolve during the lifetime of the project in order to present the status of the project's reflections on data management. A template for such a plan is available in the [Online Manual](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/om_en.pdf) on the Funding & Tenders Portal. [↑](#footnote-ref-4)
5. Short name of the beneficiary, affiliated entity or associated partner. It can be the infrastructure owner or, if the owner of the infrastructure is another third party contributing resources, the beneficiary/affiliated entity to whom the infrastructure owner provide resources in Annex I and who coordinates access to the service of this research infrastructure. [↑](#footnote-ref-5)
6. Give the ISO two-letter code of the country where the installation is located, or ‘IO’ if the access provider (the beneficiary or linked third party) is an international organization, an ERIC, or a similar legal entity. When the installation is mobile (e.g. a research vessel) give the country of its usual location (e.g. the home port). [↑](#footnote-ref-6)
7. “TA-uc” for trans-national access with access costs declared on the basis of unit costs, TA-ac for trans-national access with access costs declared as actual costs, or “TA-cb” for trans-national access with access costs declared as a combination of actual costs and costs on the basis of unit costs. “VA-uc” for virtual access with access costs declared on the basis of unit costs, VA-ac for virtual access with access costs declared as actual costs, or “VA-cb” for virtual access with access costs declared as a combination of actual costs and costs on the basis of unit costs. Associate partners, as they cannot charge costs, must indicate actual cost (TA-ac or VA-ac) and put 0 in the actual cost column. [↑](#footnote-ref-7)
8. To be filled in only for installations providing trans-national access or virtual access declaring access costs either on the basis of unit costs (TA-uc or VA-uc) or as a combination of actual costs and costs on the basis of unit costs (TA-cb or VA-uc). The unit cost must be calculated through the specific excel table provided in the submission system. Leave blank in case of or trans-national access with access costs declared as actual costs (TA-ac), or virtual access with access costs declared as actual costs (VA-ac). [↑](#footnote-ref-8)
9. Cost of the access provided under the project. For trans-national access and virtual access fill in one of the two columns or both according to the way access costs are declared. The trans-national and virtual access cost on the basis of unit costs must be computed by multiplying the unit cost by the quantity of access to be provided. [↑](#footnote-ref-9)
10. Number the installations of the same infrastructure consecutively. An *installation* is a part or a service of an *infrastructure* that could be used independently from the rest. [↑](#footnote-ref-10)