EXCELLENCE IN HUMAN-CENTERED LOGISTICS 4.0

Grant Agreement Number: 101159664

X-HuLog4.0

EXCELLENCE IN HUMAN-CENTERED LOGISTICS 4.0

D5.1 – FRAMEWORK FOR EFFICIENT PROPOSAL PREPARATION FOR SCIENTIFIC STAFF AND ADMINISTRATIVE STAFF

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Deliverable Submission Date	30.06.2026
Dissemination Level	PU
Lead Beneficiary	NTNU

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1. Introduction

X-HuLog4.0 addresses the scope of the WIDERA 2023-ACCESS 02-01: TWINNING under the priority "spreading excellence and widening participation." The project establishes cooperation with internationally leading research institutions – NTNU, TUDa, and USAAR – and allows defining strategies for building capabilities and establishing networks that help Vilnius Gediminas Technical University (VILNIUS TECH) to advance its R&I capabilities in human-centered logistics systems of the future (X-HuLog4.0).

The project entitled X-HuLog4.0 – Excellence in human-centered logistics 4.0 aims to fully realize and further develop the existing scientific potential of the widening partners VILNIUS TECH, which aims at scientific excellence in human-centered logistics systems of the future. While the focus is on widening partners, the project also enables the other partners to deepen their knowledge in this field and contribute to the advancement and adoption of X-HuLog4.0 results across Europe.

To this purpose, through its Work Packages (WP), X-HuLog4.0 intends to:

- increase the research and educational capabilities in Human-centered Logistics at VILNIUS TECH at the supporting partners;
- establish a long-term knowledge transfer between the contributing parties with a special focus on young-stage researchers;
- encourage the connection among researchers of the partner universities and other leading research institutes and promote networking;
- enable VILNIUS TECH to act as a knowledge centre providing modern methodologies, logistic tools, and solutions in the area of human-centered logistics to transfer knowledge to the widening and associated countries;
- increase the industry and society's awareness on human-centered logistics and the value of a close collaboration with academia;
- foster scientific developments through increases in the number of publications, patents, participation in research programs, and new products or services development.

In particular, the objective of WP5 is to strengthen the project management and proposal development skills among scientific and administrative staff at VILNIUS TECH. By passing and sharing the acquired knowledge from NTNU, the capacity and skills of the VINLNIUS TECH staff will be improved, giving them the necessary tools and knowledge to develop and implement research projects by fully utilising the experience and best practices of the internationally leading partners.

NTNU will lead this WP due to its recent very good success in Horizon Europe (HEU) with 112 funded projects, of which 95 are already signed (accounting for more than €59 million in funding – June 2023), positioning NTNU among the top HEU Norwegian actors.

WP5 is structured into 4 tasks:

- T5.1 Development of research management capacities in proposal preparation at VILNIUS TECH [M1-M24] [Task leader: NTNU; Partners involved: All]
- T5.2 Development of administrative skills in proposal preparation at VILNIUS TECH [M1-M24] [Task leader: NTNU; Partners involved: All]
- T5.3 Development of research management capacities and administrative skills in project management at VILNIUS TECH [M18-M36] [Task leader: NTNU; Partners involved: All]
- T5.4 Development of IPR management skills at VILNIUS TECH [M1-M36] [Task leader: NTNU; Partners involved: All]

Among the tasks foreseen in WP5, in T5.1 and T5.2, NTNU designed and delivered training to strengthen research and administrative capacities at VILNIUS TECH in proposal preparation and project management. NTNU has already organized two hybrid seminars together with its EU Research Support Office at the Faculty of Engineering. The activities include development of frameworks for call analysis, proposal writing, and budgeting, as well as training on project execution, reporting, risk management, and dissemination.

The following document represents the deliverable D5.1, which presents the framework partners can use to support their proposals preparation, at the research and administrative level, as well as the projects implementation, with regard to research management capacities and administrative skills, for efficient proposal preparation and project management.

This document is not binding, and it contains guidelines and best practices based on the experience of the partners. This first version was created from the two seminars organized by NTNU and adapted to the X-HuLog4.0 project. The activities in T5.3 will result in a program of workshops, online modules, and mentoring, producing reusable training materials and scalable courses for the needs of primarily VILNIUS TECH and the other partners.

The structure of this document is as follows:

- Chapter 1 presents the introduction to the document.
- Chapter 2 describes the objectives of the document.
- Chapter 3 describes the Horizon Europe Framework.
- Chapter 4 describes how to plan the application process.

2. Objectives of the document

This document provides a structured narrative report summarizing the content delivered during the workshop entitled 'Hands-on Management of the Horizon Europe Application Phase'. The training was delivered by the EU Research Support Office at NTNU – Faculty of Engineering and aimed at strengthening competencies related to Horizon Europe proposal development, from early-stage call analysis to final submission. The workshop provided both conceptual understanding and practical guidance for researchers and administrative staff involved in European research funding.

This document applies to all participants on the X-HuLog4.0 project.

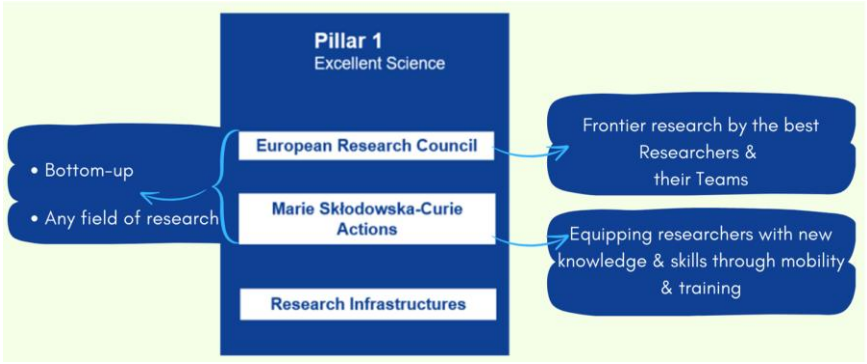
3. Understanding the Horizon Europe Framework

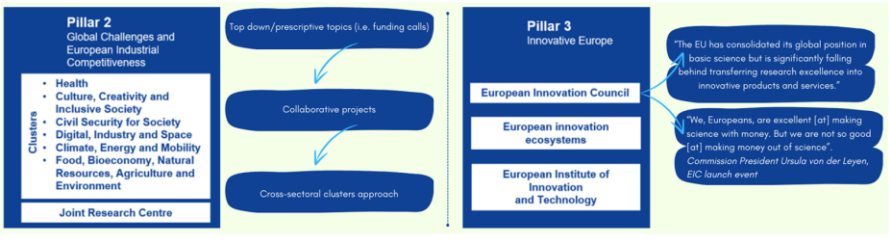
The first step is to understand the architecture of the Horizon Europe programme, and its hierarchical structure, moving from broad policy frameworks to specific funding opportunities. Users of this framework are guided through the concepts of clusters, destinations, calls, and topics, with particular attention given to how these elements interact.

Each EU proposal must be positioned not only within a specific topic but also in relation to broader European priorities, as defined at the destination level. This perspective helps applicants understand that a successful proposal is not only technically sound but also strategically aligned with the EU's long-term objectives.

It is important to further contextualize Horizon Europe within the broader European policy landscape by referencing strategic documents and official resources. Here, the Horizon Europe Strategic Plan is introduced, and it is shown how such documents provide essential guidance for interpreting calls.

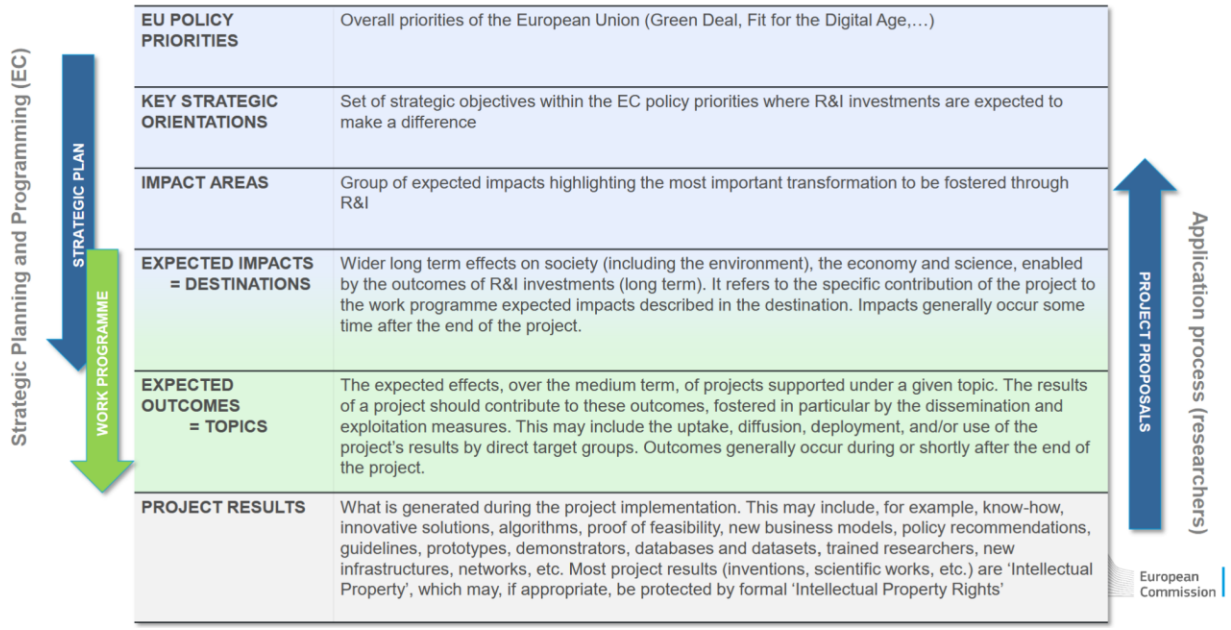
TO BE NOTED: at the time this framework is released, the new programme FP10 is still under definition – It is expected to have a very similar structure.





Proposals are expected to address specific societal challenges and policy goals and therefore must demonstrate a clear link to these frameworks. This approach reinforces the importance of grounding research ideas within the priorities articulated by the European Commission.

Building on the structural overview, applicants should understand the relationships among destinations, calls, and topics in greater depth. Destinations define long-term ambitions and impacts, while topics translate these ambitions into concrete research challenges. A strong proposal must clearly articulate how it contributes to the destination's objectives while fully addressing the expectations described in the topic. Alignment across these levels is critical, as evaluators assess proposals not only on their internal coherence but also on their contribution to the wider programme goals.



Relevant Links:

- Horizon Europe strategic plan 2025-2027 - Publications Office of the EU
- Strategic plan - Research and innovation - European Commission

4. Understanding and planning the application process

Here, applicants are guided through the entire application process, from the announcement of calls to the submission of proposals and the evaluation phase. Particular attention is given to timelines, including when calls open, how long applicants have to prepare submissions, and how evaluation processes unfold. It is important to emphasize the early preparation and backward planning, noting that successful proposals are the result of well-structured and timely coordination.

TYPE OF ACTIONS

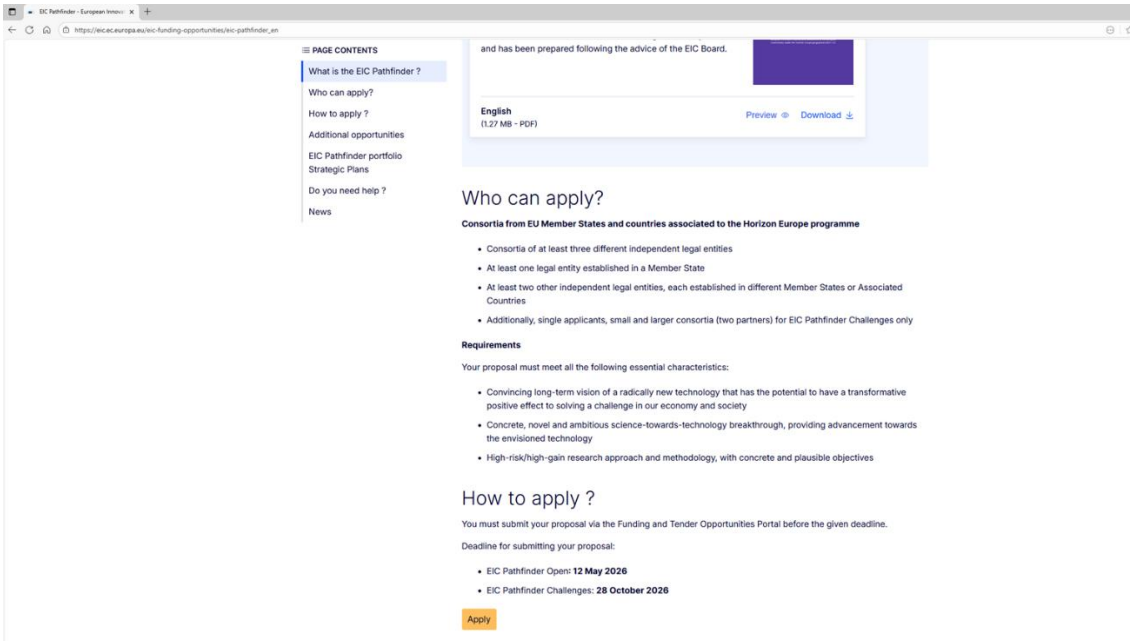
Research and innovation actions (RIA) — Activities that aim primarily to establish new knowledge or to explore the feasibility of a new or improved technology, product, process, service or solution. This may include basic and applied research, technology development and integration, testing, demonstration and validation of a small-scale prototype in a laboratory or simulated environment.

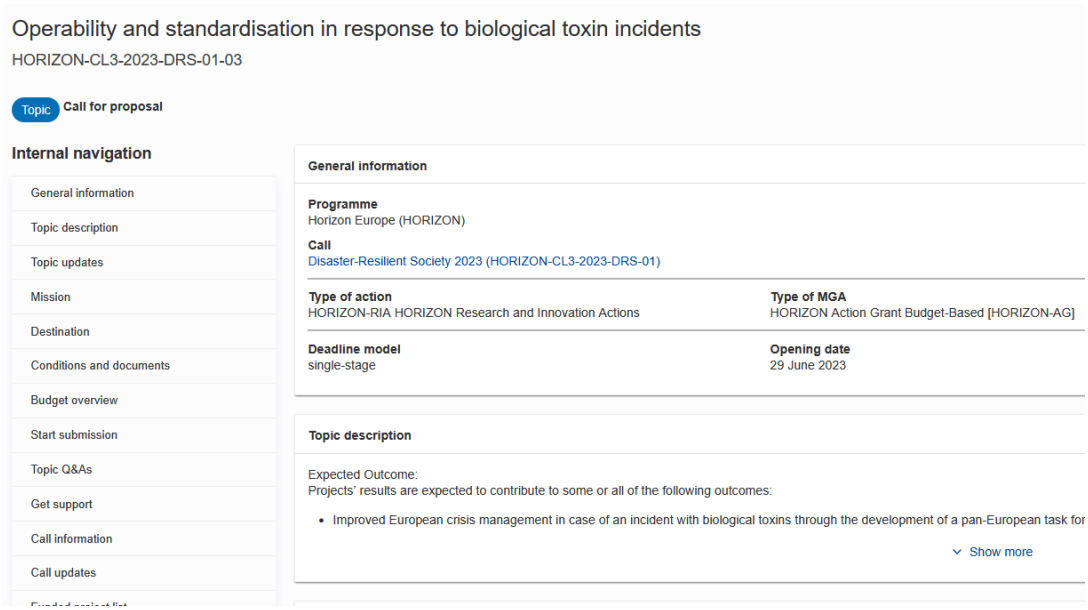
Innovation actions (IA) — Activities that aim directly to produce plans and arrangements or designs for new, altered or improved products, processes or services. These activities may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

Coordination and support actions (CSA) — Activities that contribute to the objectives of Horizon Europe. This excludes research and innovation (R&I) activities, except those carried out under the 'Widening participation and spreading excellence' component of the programme (part of 'Widening participation and strengthening the European Research Area'). Also eligible are bottom-up coordination actions which promote cooperation between legal entities from Member States and Associated Countries to strengthen the European Research Area, and which receive no EU co-funding for research activities.

4.1 Call Analysis as a Core Competence

A major effort must be made to develop the ability to analyze call topics in detail. Below are some real examples of topic texts guided through their interpretation. It can be seen how to identify key elements such as expected outcomes, scope, policy references, and technological requirements, including technology readiness levels. The central message is that all elements mentioned in the topic must be explicitly addressed in the proposal. Moreover, expectations expressed in the call text should be treated as essential requirements rather than optional suggestions, as failing to address them weakens the competitiveness of the proposal.





HORIZON-CL5-2023-D3-01-02: PV integration in buildings and in infrastructure

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Technology Readiness Level	Activities are expected to achieve TRL 7 by the end of the project – see General Annex B.

Context for the proposal

Expected Outcome: Photovoltaic products are considered to be building-integrated, if they have been designed following the basic requirements for construction works in order to form and/or replace a construction product. If the integrated PV product is dismounted, it would have to be replaced by an appropriate conventional construction product. Building and infrastructure integrated PV can be a cost-effective, technologically proven solution to decarbonise buildings and infrastructure.

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What the proposal needs to deliver on

Horizon Europe - Work Programme 2023-2025
Climate, Energy and Mobility

Consequently, project results are expected to contribute to all of the following expected outcomes:

- Demonstrate economic and sustainable integration of PV products in the built environment and in infrastructure.
- Establish enhanced structural collaborative innovation between PV companies and the (building) construction sector.
- Contribute to the Renovation Wave, the Mission on climate-neutral and smart Cities and the New European Bauhaus initiative.

Not objectives or expected impacts, but you should include this throughout the proposal

The proposal must spesifically adress

Scope: PV integration in buildings and in infrastructure unlocks a huge potential for renewable electricity generation. Integrated PV require individual solutions in order to meet multi-functional and aesthetic requirements such as yield-friendly colouring or modular transparency, antifouling property, structural flexibility, module lightness and flexibility, suited voltage levels, the use of and combination with (building) materials other than glass, and an overall high aesthetical value that addresses the requirements of architects and designers.

Proposals are expected to:

- Demonstrate resilience against partial shading, flexibility in the interconnection of PV modules having different sizes and electrical characteristics specific optical and thermal control solutions, long service life/easy replacement, safety and simplicity of maintenance, software control for quick detection of faults, module substructures and fixing systems to enhance aesthetics and functionality of the integration and electricity yield.
- Decrease costs and enhance lifetime, quality, reliability and sustainability with new approaches for both PV module and BOS with the development of industrialized production of customized products and of prefabricated modular solutions, which incorporate an integrated life cycle approach.
- Develop energy integration and social behaviour concepts to maximize the energy matching between PV production and local buildings consumption, supported by new tools and business models to ensure their economic effectiveness.
- Demonstrate integration of PV design and manufacturing within the construction value chain with appropriate consideration to standards for buildings and infrastructure, as well as contribution to new and improved standards.
- Form alliances between all stakeholders (PV and building/construction sectors, distribution system operators, investors, owners, architects, installers) to tackle a number of educational and regulatory barriers that still hinder the development of integrated PV in buildings and in infrastructure. The goal is to promote new concepts/schemes and business models for an active role of integrated PV in renovation and construction.

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Equal to eligibility criteria

Policy goal

Horizon Europe - Work Programme 2023-2025
Climate, Energy and Mobility

Demonstrations are expected to be carried out in more than one different construction typologies (residential buildings, tertiary building [hospitals, schools, public administration buildings, etc.]), or civil infrastructures (roadways, noise barriers, parking lots, bridges, etc.) and in more than one location in Europe.

A plan for the exploitation and dissemination of results should include a strong business case and sound exploitation strategy, as outlined in the introduction to this Destination. The exploitation plan should include preliminary plans for scalability, commercialisation, and deployment (feasibility study, business plan) indicating the possible funding sources to be potentially used (in particular the Innovation Fund).

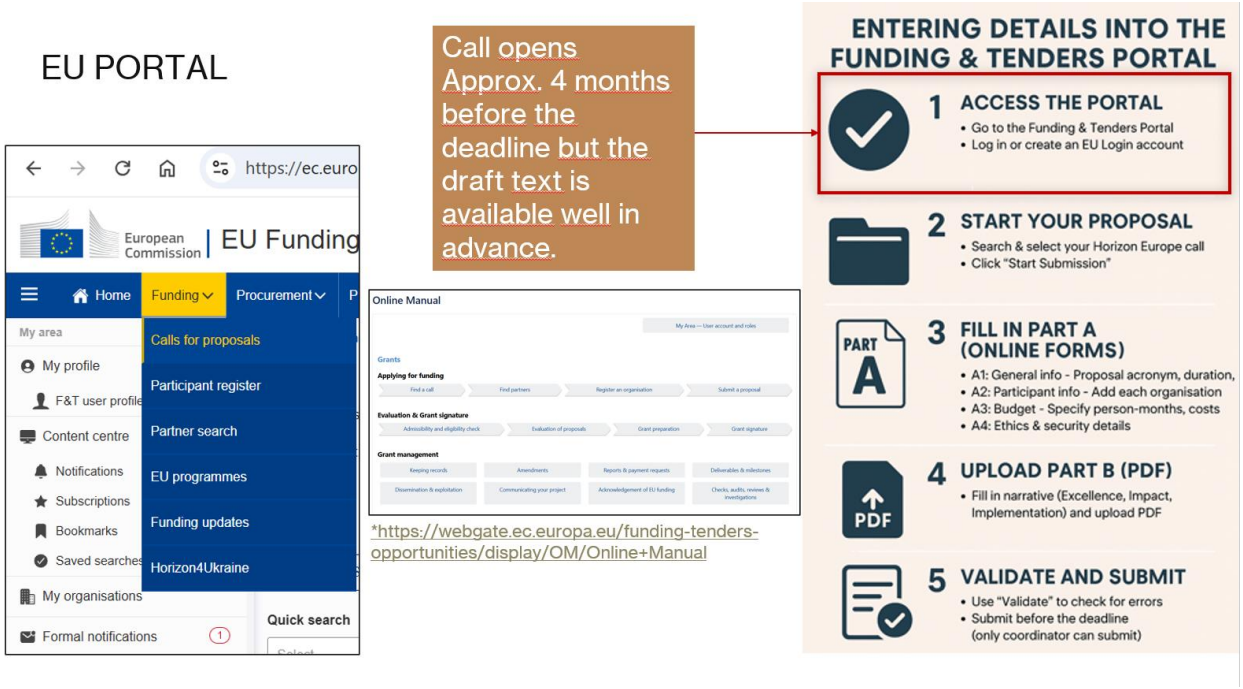
Projects are expected to contribute to the New European Bauhaus (NEB) initiative[160] by interacting with the NEB Community, NEBLab and other relevant actions of the NEB initiative through sharing information, best practice, and, where relevant, results.

4.2 Use of the EU Funding & Tenders Portal

Applicants must be familiar with the EU Funding & Tenders Portal as the main platform for accessing funding opportunities and submitting proposals. Below are some examples of how to navigate the portal, locate relevant calls, access proposal templates, and consult supporting documentation. It is very important to acknowledge the availability of draft call texts in advance of official publication, encouraging applicants to use this information to start preparing proposals early. Such draft call texts can be found online or by contacting the national EU representative.

Relevant Link:

https://webgate.ec.europa.eu/funding-tenders-opportunities/spaces/OM/pages/1867795/Online+Manual



4.3 Proposal structure: Part A and Part B

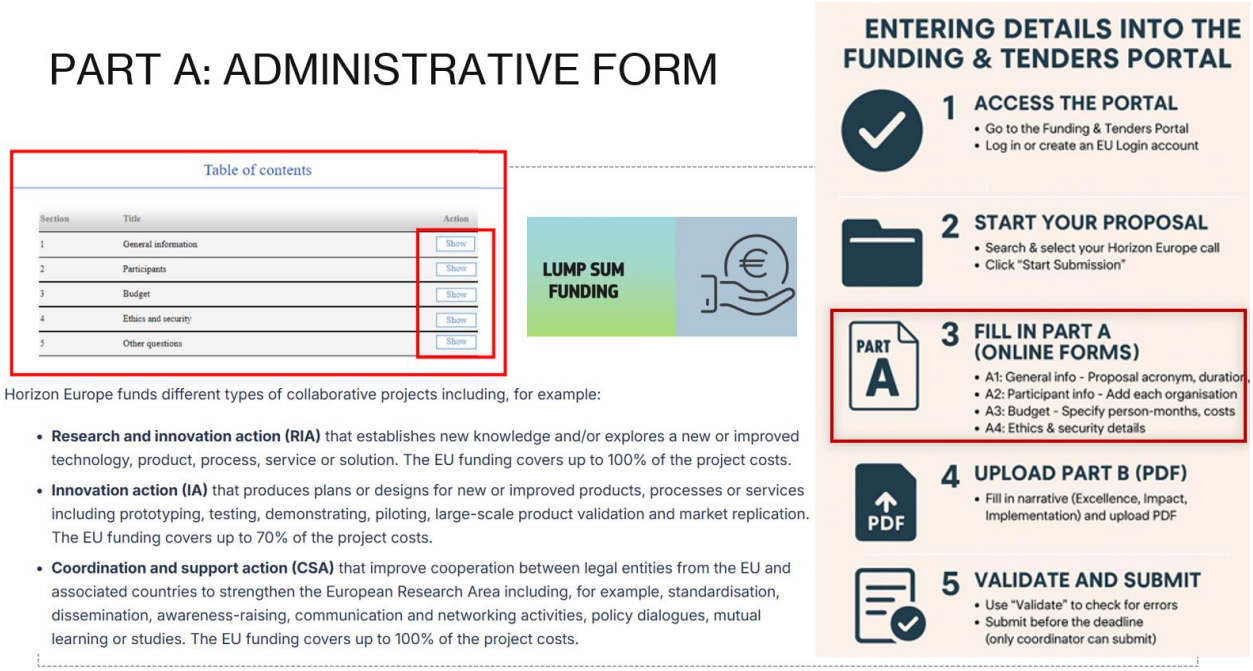
The structure of the proposal is an important aspect to consider when approaching an EU call, starting with the administrative component, Part A, and then the narrative component, Part B.

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.

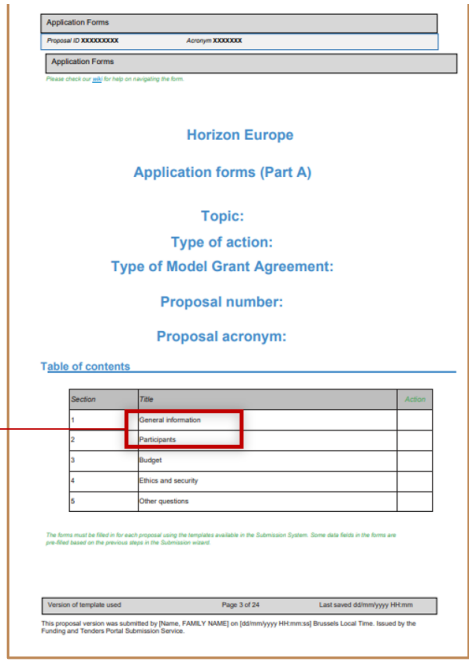
Administrative Aspects: Part A

Part A requires detailed information about the consortium, including participating organisations, key personnel, and administrative data. Ethical considerations are also included here, with particular emphasis on compliance with regulations, preparation of supporting documentation, and completion of the ethics self-assessment. The explanation underlined that administrative accuracy is essential, as inconsistencies or omissions can negatively affect the evaluation process.

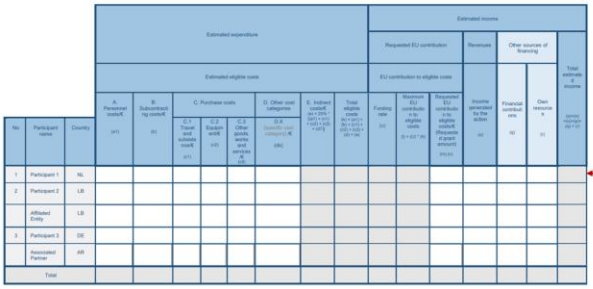


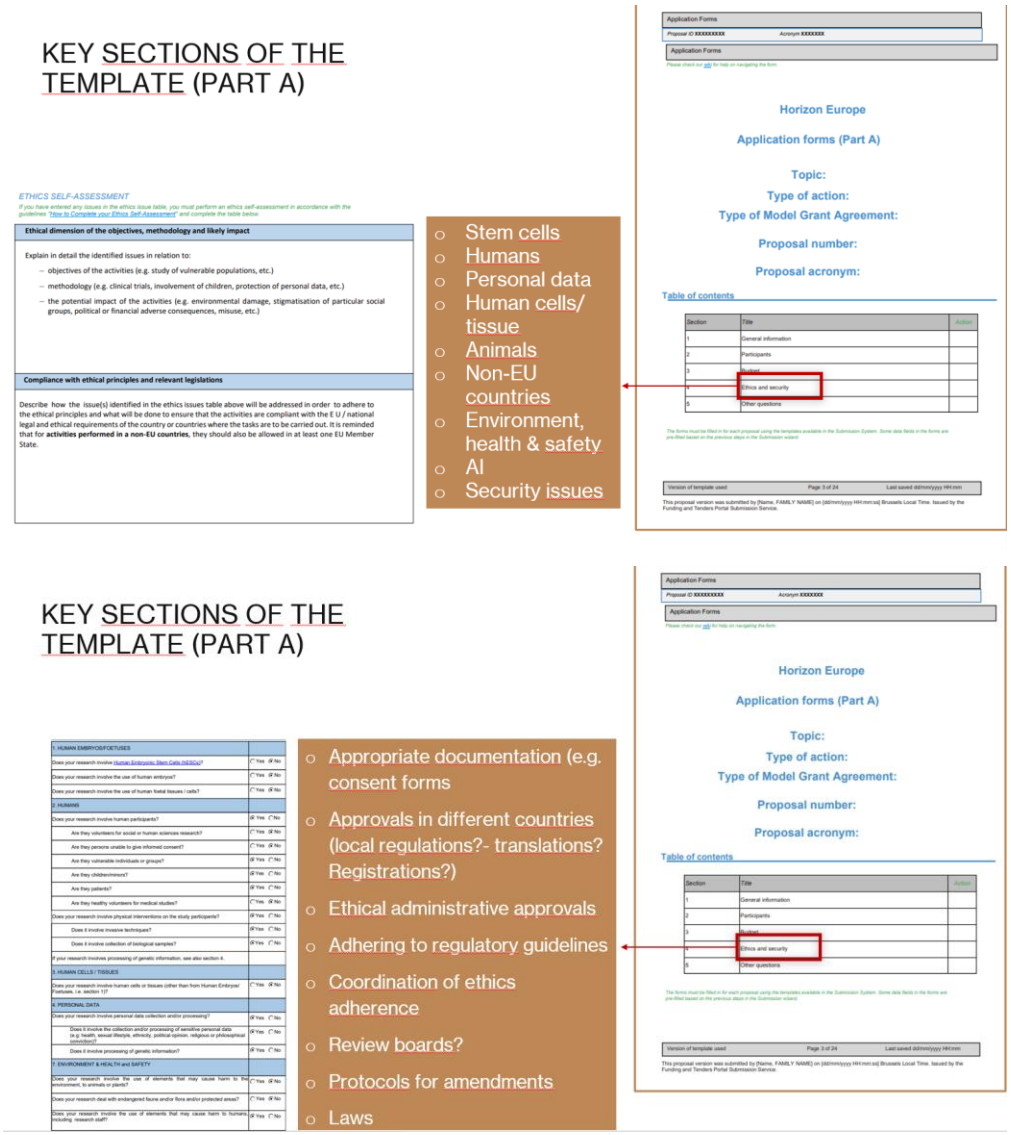
KEY SECTIONS OF THE TEMPLATE (PART A)

- Proposal details
- Abstract
- Details of participating orgaisations
- Details of researchers involved in the proposal
- What capacity are participating organisations involved?
- GEP



KEY SECTIONS OF THE TEMPLATE (PART A)

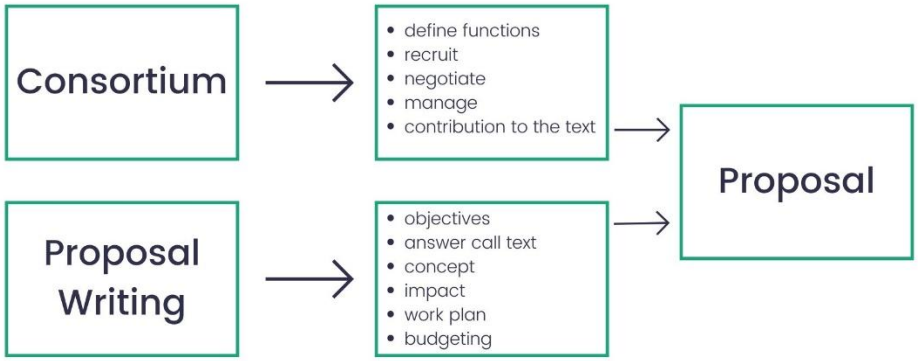


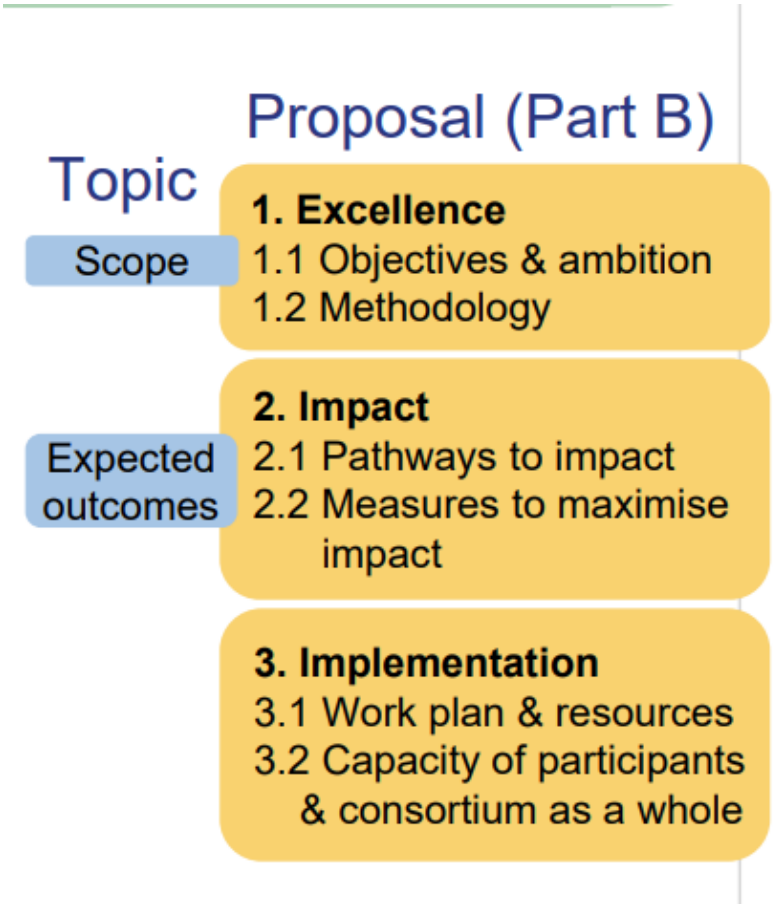


Technical Proposal Development: Part B

Part B is the core of the proposal where the scientific and technical content is presented. Below is guidance on the structure of this section, which is organised around the evaluation criteria of excellence, impact, and implementation. It is very important to define clear, measurable objectives, supported by a robust, well-justified methodology. It also highlighted the need to integrate cross-cutting aspects such as gender dimension, Open Science, and interdisciplinarity, which are increasingly important in Horizon Europe evaluations.

It is important that applicants familiarize themselves with the proposal template before they begin writing an EU funding application, as it can differ between competitions. For example, proposals for the EIC Pathfinder and EIC Transition have a different structure.


Consortium
define functions
recruit
negotiate
manage
contribution to the text
Proposal
Proposal Writing
objectives
answer call text
concept
impact
work plan
budgeting


Proposal (Part B)
Topic
Scope
1. Excellence
1.1 Objectives & ambition
1.2 Methodology
Expected outcomes
2. Impact
2.1 Pathways to impact
2.2 Measures to maximise impact
3. Implementation
3.1 Work plan & resources
3.2 Capacity of participants & consortium as a whole

Excellence Section

Excellence is the first of three sections in a Horizon Europe proposal. It requires applicants to define what their project aims to achieve. The Excellence Section is marked against the following evaluation criteria:

- Clarity and pertinence of the project's objectives, 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 Excellence Section in Horizon Europe consists of two sub-sections: **Objectives and Ambition, and Methodology**

The **Objectives and Ambition** section should clarify the project's objectives and their relevance to the project. When presenting the objectives, applicants should:

- **Refer to the specific topic's scope, focus, and terminology** – This is information the evaluators will have to hand and will help them understand the relevance of the project to the call.
- **Be clear and concise** – Applicants should avoid long background text at the beginning of the application and jump straight into project's objectives. Start with a clear message to the effect of: "The main objectives of this project are …".
- **Include specific conceptual objectives** – These objectives should be clear, measurable, realistic, and achievable within the duration of the project. If possible, applicants should also include key performance indicators (KPIs) to track their progress.

Questions to consider when formulating objectives:

- What is your vision for the project? What do you want to achieve concretely?
- What is the problem/challenge to be addressed by the call for proposals?
- What are the primary, superordinate or subordinate goals of the project? Does this also address the topic goals? What must be achieved in the project to serve the scope, achieve the expected outcome and (later) address the expected impact (destination / strategic plan)?
- Which target groups need to be addressed to realise this impact?
- What do the target groups need to realise the impact?
- What is missing? What results do you need to deliver in the project?
- Why will you be able to solve the problems, while other projects apparently failed or did not fully achieve the final goal?

Moreover, applicants will need to explain the extent to which the proposed work is ambitious and goes beyond the state of the art. Applicants should do so in the context of the problem applicants wish to solve. To achieve this, refer to products and services already available on the market and any patent or publication searches that applicants have carried out. This will help the evaluator understand the project's innovative potential.

Questions to consider when formulating the ambition of the project:

- How is your project's solution compared to the current state of science and/or technology, existing solutions, products/services, or business models?
- What is the added value or advantage of your solution?
- Why will your solution be used? Why is your target group explicitly waiting for this solution?
- Where will current knowledge/methodology be particularly enhanced? Are you developing new methods?
- What is particularly challenging: technological or societal challenges?
- Are unique resources being used?
- Where has something like this already been implemented? What is this project doing differently and what is unique about this approach?
- Where is the (economic) innovation potential?
- What does the market look like, including the need for a new scientific solution for the scientific community?
- Have you conducted a patent search?
- Who else can benefit from your solution, such as policy makers, certain social groups, research, or standards and regulatory authorities?

The **Methodology section** should outline the methodology that underpins the work and how it will enable applicants to deliver the project's objectives. Applicants should clarify the project's overall concept, including the models and assumptions that underpin the work. They should also refer to the existing knowledge on which the concept is based to demonstrate the approach's innovativeness. The maturity level of the project through the Technology Readiness Levels (TRL) framework needs to be defined. Applicants should state the current TRL and where applicants will be by the end of the project.

In this section, applicants should elaborate on and explain the scientific and technological basis of the project, and they should also refer to any important challenges identified in the chosen methodology and how applicants intend to overcome them.

The methodology section should clearly describe the conceptual and operational foundations of the proposed work. It should begin by outlining the central concept underpinning the proposal, explaining the core idea that drives the project and how it is intended to address the identified problem or opportunity. Building on this, the applicants should explicitly present the key hypotheses and assumptions that guide the project, together with a clear rationale explaining why this approach is expected to be effective and scientifically sound.

The section should then describe in detail the methodological approach that will be used to achieve the project objectives. This includes explaining the specific techniques, models, tools, and processes that will be employed to address existing gaps, respond to identified needs, and deliver the expected outcomes. Applicants should also clarify what distinguishes their approach from existing solutions, highlighting its innovative features and explaining why it is particularly well-suited to solving the problem at hand.

In addition, the methodology should demonstrate a critical understanding of potential challenges and limitations. Applicants are expected to identify the most significant scientific, technical, or operational challenges associated with their approach and to provide a clear strategy for addressing or mitigating these challenges throughout the project.

Finally, the section should briefly indicate who is expected to benefit from the project outcomes, linking the methodological choices to their anticipated impact and relevance to stakeholders, end users, or broader societal needs.

Interdisciplinarity requires applicants to describe how expertise and methods from different disciplines will be brought together in the project. Applicants should explain why this is necessary for achieving the project's objectives.

An interdisciplinary approach is typically expected, as most topics require the collaboration of several areas of knowledge and expertise. If applicants consider it unnecessary for the project, applicants should use this section to explain why.

Some topics require integrating social science and humanities (SSH) research. Where this is the case, use the SSH section to explain their role in the project. Alternatively, applicants should provide a justification if applicants do not consider them relevant.

Questions to consider when formulating the methodology:

- What is the central concept behind the proposal?
- What are the hypotheses/assumptions underlying the project, and what is the rationale for this approach?
- What approach will be used to achieve the objectives, fill the gaps, satisfy the needs, or solve the problems?
- What distinguishes your approach, and why is it best to solve the problems with this approach?
- What significant challenges have been identified in your method, and how do you plan to address them?
- Who will benefit from the outcomes?

Moreover, in this section, applicants should describe how they have taken the gender dimension into account in the project's research and innovation content. For example, concepts, methods, and approaches may need to be designed differently to account for sex and gender differences.

This question relates to the content of the planned project, and not to the gender balance of the consortium. It is mandatory except for topics that have been identified in the work programme as not requiring the integration of the gender dimension.

Questions to consider when addressing the gender dimension:

- Is biological sex relevant to the project?
- Has the gender aspect been considered in project planning, objectives, research approaches, and experiments?
- Does the solution take into consideration differences between men and women (from a biological and/or cultural point of view)?
- Is it known (or not) that men and women may have different reactions within a specific context or culture? Will these differences and diversities influence the project results, and how?
- Could the research results be different for women than men? How will the project deal with these differences?

Finally, applicants should explain how applicants have integrated open science practices into the methodology. This may include early and open sharing of research, research output management, and participation in open peer-review.

Applicants will need to provide a thorough justification if applicants believe that none of these practices are appropriate for the project, as Open Science is a policy priority for the EU. Applicants can find more information on this policy here.

Applicants should include a data management plan (DMP) if the project involves the collection or generation of data and/or other research outputs (except for publications). The DMP should explain how the data/research outputs will be managed in line with the FAIR (Findable, Accessible, Interoperable, Reusable) principles. Applicants also need to explain how data will be stored and the associated storage costs.

The Data Management Plan will be developed collaboratively by the project coordinator, work package leaders, and a dedicated data manager, with contributions from IT specialists, legal and ethics experts, and industry partners. This ensures that data handling procedures are scientifically sound, technically

feasible, legally compliant, and aligned with FAIR principles. To what extent the DMP is detailed depends on the type of project and the requirements of the call.

Questions to considering when describing open sciences practices:

- What measures are you taking regarding early Open Access to research results, knowledge, and methods/tools - especially among relevant stakeholders or beneficiaries of the project's results?
- What measures are planned for the management of the project results?
- What measures will be taken to ensure the reproducibility of the results?
- Which available open-access options do you apply for publications, data, software, models, algorithms, and workflows?
- Is participation in an open peer review of the project results foreseen?
- How are all relevant stakeholders, including citizens, society, and consumers, involved in the project? Co-creation of Research & Innovation agendas and content (e.g. Citizen Science).

Impact Section

In EU projects (such as Horizon Europe), the **Impact section** justifies why the research is being funded. It requires a preliminary business/action plan detailing how the project's outcomes will yield concrete scientific, economic, and societal value beyond the immediate research results.

The Horizon Europe Impact section focuses on specific, actionable pathways and is divided into three core sub-sections:

1. Project's Pathways Towards Impact

- **Expected Outcomes:** Connect the project's immediate results to the specific, mid-term outcomes expected in the Work Programme topic description.
- **Key Impact Pathways (KIPs):** Detail the project's broader, long-term contributions. This is categorized into three storylines:
    - *Scientific:* High-quality knowledge creation, strengthening human capital, and open-source diffusion.
    - *Societal:* Addressing EU policy priorities, global challenges, and enhancing societal uptake.
    - *Economic:* Generating innovation, growth, and job creation.
- **Barriers and Obstacles:** Detail any market, regulatory, or societal barriers that could prevent the uptake of the results, and explain how the project will address them.

2. Measures to Maximize Impact

Applicants must describe how applicants will actively promote and utilize the project's results using three core strategies:

- **Dissemination:** Sharing the technical results and research data with the scientific community to enable further research and peer adoption.
- **Exploitation:** The active utilization of the project results for commercial, societal, or policymaking purposes.
- **Communication:** Targeted campaigns designed to promote the project and its findings to multiple audiences, including the general public and stakeholders outside the immediate project scope.

3. Summary Canvas

A concise, mandatory impact summary section. Recent evaluations focus heavily on showing how project results can realistically lead to uptake by clearly identified target groups in line with the Work Programme, rather than theoretically generating every possible type of impact.

Implementation Section

The Implementation section of an EU project proposal outlines exactly how the work plan will be executed. It transforms an innovative idea into reality by detailing the management structure, Work Packages, deliverables, resources, timeline (Gantt chart), and risk mitigation strategies to prove the consortium's capacity to deliver.

Writing a strong, competitive proposal requires careful attention to several core components:

1. Work Plan (Work Packages and Tasks)

Break the project down into logical Work Packages (WPs).

- **Structure:** Include a WP for management and another for dissemination/exploitation.
- **Flow:** Show clear interdependencies between WPs and assign an experienced leader to each.
- **Tasks:** Divide each WP into granular, actionable tasks.

2. Consortium as a Whole

Demonstrate that the consortium has all the necessary skills and resources to execute the project successfully.

- Detail the specific expertise of each partner and why they are essential.
- Justify the roles and the allocation of person-months across the partners.

3. Management Structure and Procedures

Outline the governance and decision-making processes.

- Define internal communication channels, conflict resolution mechanisms, and the roles of steering committees.
- Clarify how technical, financial, and administrative management will be handled.

4. Risk Management

Anticipate potential roadblocks before they happen.

- Create a risk matrix categorizing risks (e.g., scientific, technical, operational, managerial).
- Define the likelihood, impact, and a concrete mitigation strategy or contingency plan for each risk.

5. Resources and Budget

Provide a realistic overview of how the budget will be utilized.

- Ensure the person-months allocated to tasks perfectly align with the budget requested.
- Detail major costs, such as equipment, travel, and subcontracting.

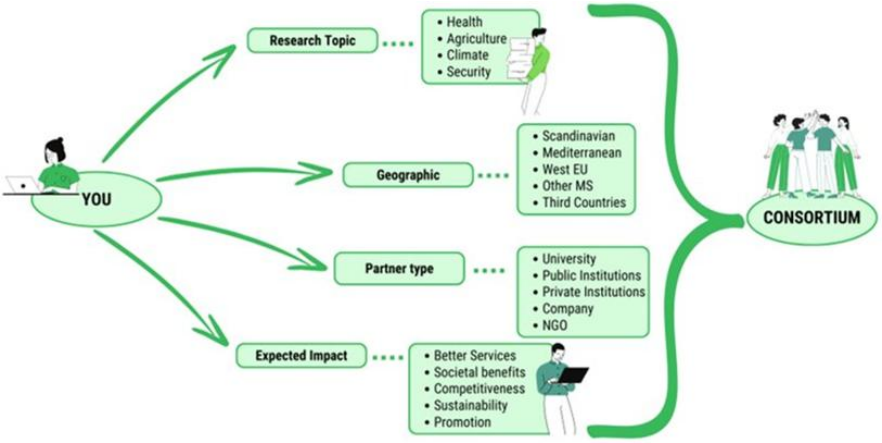
6. Tables and Charts

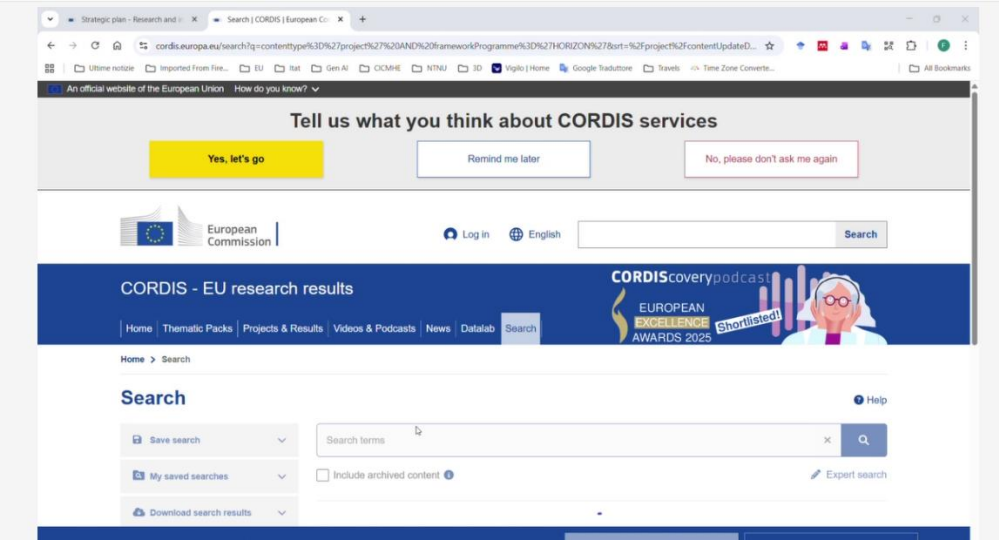
Use standardized templates (often provided via the EU Funding & Tenders Portal) to summarize the plan:

- **Gantt Chart:** A visual timeline showing the duration of all WPs and tasks.
- **List of Deliverables:** Categorized as either reports, websites, prototypes, demonstrators, or ethics.
- **List of Milestones:** Key check-points that mark a significant output or a decision point in the project.

4.4 Building and Managing the Consortium

Applicants can use different approaches to identify and select partners, including platforms such as CORDIS and existing professional networks. The importance of assembling a balanced and complementary consortium must be emphasized, ensuring that all required competencies are covered and that eligibility criteria are met.





Budgeting and Resource Allocation

Closely related to consortium development is preparing the project budget. Budgeting is not only a financial exercise but also a reflection of the project's structure and feasibility. Particular attention must be given to ensuring consistency between planned activities and allocated resources, estimating costs, allocating resources across work packages, and ensuring compliance with funding rules.

Please pay attention to the two main funding models: Actual Cost Budgets and Lump Sum Budgets. The EU keeps updated info about lump sum budgets on their website:

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon/lump-sum

Managing the Proposal Writing Process

Applicants are encouraged to establish a small core team to coordinate the drafting process and ensure structured contributions from all partners. Frequent communication, clear deadlines, and strict version control are key elements for a successful submission. These practices are essential to maintain coherence and quality throughout the proposal.

Below is an example of an internal planning process at NTNU:

EXAMPLE OF INTERNAL PLANNING AND TOOLS

Date before deadline	Actions	Responsible
Between now and 11th of Feb	• Register the proposal in the F&T portal giving access to the NTNU people	Research Support Office
18th of February or earlier	• Send invitations to potential consortium partners, requesting a response as soon as possible and no later than 22nd • Indicate proposed dates and times for an online consortium meeting (if any) • Send Form A to partners and request their input	Research Support Office
Week of 27th February	• Initial development of the NTNU side of the budget – Identify requirements • Send details to partners and request their input on a pre-defined budget amount	Research Support Office/EU Financial Officers? EU Financial Officers? Research Support Office
Week of 27th February	• Consortium Meeting to firm up project idea with consideration for all 3 sections of the proposal • Agree partners' contributions to the various WPs and possibly other sections of the proposal	Research Support Office and Fabio
13th of March	• Deadline for Budget input • Deadline for Form A input	EU Financial Officers Research Support Office
17th of March	• Finalise the F&T portal	Research Support Office
ASAP after the Consortium meeting (if any)	• Circulation to partners of the first draft of Sections 1 (Excellence) and 2 (Impact) to enable them to draft their own WPs (Section 3)	Fabio, Research Support Office in cc.
27th March	Budget draft distributed to beneficiaries for comments. Deadline for comments: 30th March	EU Financial Officers
13th of March	• Submission deadline for all partners – WPs	Research Support Office Fabio
27th of March	• Semi final chapter 1 (Excellence) drafted by coordinator, with input from WP-leaders	Fabio
	• Semi final chapter 2 (Impact) • Semi final chapter 3 including tables in section 3.1 (implementation)	Research Support Office
28th of March	• Circulation to partners of the Semi-final	Fabio Research Support Office in cc
11th of April One week to go	- Final feedback to proposal	Partners
18th to 21st of March	• -	Hakan, Miriam, Ingunn, Kristoffer, Johanna and Per Inge
11th of April	Finalise budget table in the portal	EU Research Support Office
11st to 14th of April (Less than a week to go)	• Final touches Final update of tables in Part B section 3.1, in accordance with final budget Any remining gaps and uncompleted tasks	Research Support Office and Fabio
17th of April	• Final check for all chapters and tables Final check of the portal and the budget figures	Research Support Office
18th April 2023	• Proposal submission on EC Portal • Ensure proposal is complete and everything is at is should	Research Support Office
20th April 2023	• Submission deadline Download and circulate the full copy of the proposal as soon as it is ready	Research Support Office

Fundamental tips:

- Define the WP leaders as soon as possible
- Define the main objectives and deliverables for each WP in line with the overall objectives of the project.
- Delegate WP leaders to gather information from participants interested in their WP.
- Use a common template and allocate limited text to each section
- You can also suggest how to structure the WP and deliverables
- Collect all with the tentative budget
- Make everything more uniform and aligned with section 1.
- Partners need periodic reminders!
- Identify a core team of 2-3 partners that will be contributing to the proposal from A-Z.
- Draft a concept note with WP structures
- Request a WP description from the WP leaders
- Set up a weekly meeting for the core team and a second-weekly meeting for the WP leaders.
- Always keep two versions of the proposal: one locked only for the core team and another one for the whole consortium.
- Trust your partners , but be super strict with deadlines.

Designing Work Packages and Deliverables

Applicants should know how to break down the project into logically coherent components, each associated with specific tasks, outputs, and milestones. It is important that deliverables are clearly linked to objectives and should reflect tangible project outputs. Consistency between work plans, timelines, and resource allocation was identified as a key success factor.

- Provide sufficient details on each work package to justify the resources allocated to it in the budget. This will also allow monitoring of progress.
- The number of work packages should be proportionate to the scale and complexity of the project.
- Dedicated work packages to 'management', 'communication, dissemination and exploitation' is appropriate.

Each Work Package should be broken down into distinct tasks necessary to achieve its objective.

- Deliverables are your project´s outputs; the list of deliverables should match the Work Packages and the achievements promised in the objectives.
- Each deliverable should have its own due date; do not include multiple deliverables of the same type in a single row with multiple due dates!
- Copy and paste the same table format for all the WPs
- List the objectives 1, 2, 3, and so on, connect the deliverables and the milestones
- 2-4 deliverables per WP is normal; some WPs need more or fewer deliverables
- Choose the right dissemination level. In case of changing the dissemination level, an amendment process during the project should be initiated.
- The project should include a WP for management. This WP has mandatory deliverables such as DMP. For a 4-year project, 3 DMPs are required (Initial, update, interim, and final). For 3 years, the 2 DMP deliverables are sufficient. The first DMP deliverable has a due date of M6.
- The table in the Template has no lane/column for the deliverable's responsible partner. Applicants can mention this somewhere to make the grant preparation smoother.

Check the calculation of the efforts well and cross-check with the staff effort mentioned in the WP table.

CROSS-CHECKING AND ACCURACY

WP number	**1**	Lead beneficiary		**NTNU**		Start month		1	End month		48
WP title	**Project Management and Coordination**										
Participant Number	1	2	3	4	5	6	7	8	9	10	11
Participant Short name	**NTNU**	AAU	REHVA	POLITO	LUT	CIT	TalTech	ReMoni	ANEO	EURIX	PORT PC
PMs	**20**	3	3	3	3	3	3	2	1	3	3

3.1.6. Summary of the staff efforts

Resources to be committed as the staff effort and other direct cost are specified in **Table 11**.

Table 11. Summary of staff effort

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	Total PM per Participant
NTNU	20	10	14	14	20	8	10	6	102

Internal quality control is important, and applicants are encouraged to review proposals systematically to ensure consistency across sections, accuracy in resource allocation, and coherence in the overall narrative. This step is essential to avoid contradictions and strengthen the credibility of the proposal, keeping in mind the evaluation criteria used in Horizon Europe. A strong proposal must demonstrate scientific excellence, clearly articulated impact, and a feasible implementation plan. The success is determined not only by technical quality but also by the ability to demonstrate real-world relevance and policy alignment. Common weaknesses, such as vague objectives or insufficient methodological detail, were discussed to help participants better understand evaluators' expectations.

Common Pitfalls in Proposal Preparation

Common mistakes that often undermine proposal quality include weak alignment with the call, poorly defined objectives, unrealistic budgets, and insufficient attention to impact or ethical aspects. Applicants must increase their awareness of potential weaknesses and provide practical strategies to avoid them.

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