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Webinaire sur les appels 2024 des destinations INFRA-DEV, INFRA-EOSC et INFRA-TECH

24/11/2023

Le webinaire commencera à 10h00
Merci de couper vos micros en arrivant

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1. Introduction et présentation générale

Elena Hoffert,
MESR, DGRI
Coordinatrice PCN Infrastructures

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Le point de contact national Infrastructures de recherche

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Programme

1. Introduction et présentation générale des destinations INFRA-DEV, INFRA-EOSC, INFRA-TECH
2. Appels 2024-INFRA-DEV :

   présentation générale, focus et retour d'expérience sur les *Evaluation Summary Reports* de la destination 2022-INFRA-DEV-01-01, témoignage d'un Coordinateur de projet, Q/R
3. Appels INFRA-EOSC : présentation générale, Q/R
4. Appels 2024-INFRA-TECH :

   présentation générale, focus et retour d'expérience sur les *Evaluation Summary Reports* de la destination 2022-INFRA-TECH-01-01, Q/R
5. Session de Questions / Réponses.

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2024
Ouverture : 06/12/2023
Clôture : 12/03/2024

Appels 2024	Type d'appel	Budget	Contribution EU par projet	Nb de projets financés
HORIZON-INFRA-2024-DEV-01-01	RIA	12.00	1.00 to 3.00	5
HORIZON-INFRA-2024-DEV-01-02	CSA	3.00	Around 1.50	2
HORIZON-INFRA-2024-DEV-01-03	RIA	8.00	2.00 to 4.00	2
Overall indicative budget	23.00 M€			
HORIZON-INFRA-2024-EOSC-01-01	RIA	16.00	6.00 to 8.00	2
HORIZON-INFRA-2024-EOSC-01-02	CSA	4.00	Around 4.00	1
HORIZON-INFRA-2024-EOSC-01-03	CSA	5.00	Around 5.00	1
HORIZON-INFRA-2024-EOSC-01-04	RIA	8.00	Around 8.00	1
HORIZON-INFRA-2024-EOSC-01-05	RIA	28.00	Around 7.00	4
Overall indicative budget	61.00 M€			
HORIZON-INFRA-2024-TECH-01-01	RIA	63.50	5.00 to 10.00	8
HORIZON-INFRA-2024-TECH-01-02	RIA	5.00	Around 5.00	1
HORIZON-INFRA-2024-TECH-01-03	RIA	45.00	Around 15.00	3
HORIZON-INFRA-2024-TECH-01-04	RIA	24.00	Around 12.00	2
Overall indicative budget	137.50 M€			

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2.a. Présentation générale de la destination INFRA-DEV des appels 2024

Agnès Robin,
Commission Européenne,
Head of Sector Research Infrastructures

European Commission

INFO DAYS 2023

Horizon Europe - Research Infrastructures

2024 Calls in Work Programme 2023-2024

Webinaire des appels 2024
INFRADEV, INFRATECH, INFRAEOSC
24 November 2023

Agnès Robin, Head of Sector
Research Infrastructures

THE EU RESEARCH & INNOVATION PROGRAMME 2021 - 2027

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THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027

RESEARCH INFRASTRUCTURES

INFRADEV

Agnès Robin, Head of Sector
24 November 2023

Research and Innovation

INFRADEV: Developing, consolidating and optimising the European RI landscape, maintaining global leadership

***Objective*:** support a European **strategy** for RI, enhance the role of RIs for **international** cooperation and create a world-leading, coherent, responsive, sustainable and attractive **RI landscape** in Europe,

- by reducing its fragmentation at European, national and regional level, ensuring coordination of efforts and fostering alignment of priorities among MS and AC, connecting RIs to the European Open Science Cloud (EOSC), and
- which is able to support national and regional R&I ecosystems.

***Expected impact*:** *(proposals should set out credible pathways to contribute to one/several of the following impacts)*

- Disruptive research and breakthrough science and innovation through cutting-edge, interconnected and sustainable Research Infrastructures;
- Strengthened scientific excellence and performance and efficiency of the European Research Area, increasing its attractiveness to researchers from all over the world;
- Coordinated research infrastructure capacity among countries and regions, also by exploiting possibilities given by the smart specialisation processes;
- Reinforced R&I capacities enabling systemic changes needed for a truly transformative societal and economic recovery and a strengthened resilience of critical sectors, as outlined in the Recovery Plan;
- Improved European response, in cooperation with international players, to emerging socio-economic and related scientific and technological challenges at global level.

HORIZON-INFRA-2024-DEV-01-01:
Research infrastructure concept development

TYPE OF ACTION

- Research and Innovation Action (RIA)

INDICATIVE BUDGET

- EUR 12 million
- Expected EU contribution per project: EUR 1-3 million

OTHER CONDITIONS

- Indicative number of projects expected to be funded: 5
- Eligible costs will take the form of a lump sum

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

Research infrastructure concept development

Expected Outcome (all)

- **Support to planning and decision making** for RIs at the national level (e.g. funding bodies, governments) and European level (e.g. ESFRI), through solid **science cases** incl. expected scientific breakthrough, **gap analyses** and **feasibility/design studies** for future RIs (or major upgrades);
- Better alignment of the RIs landscape with the **advancement in excellent science**, **frontier research and technology innovation**;
- Increased **performance**, **scientific capacity** and **excellence** of the European RIs landscape;
- **New services and access opportunities** available to the research community allowing **to better tackle scientific and societal challenges**;
- Reduction of **environmental (incl. climate-related) impacts** as well as **optimization of resource and energy consumption** integrated in the very early phase of development of new RIs or major upgrades of existing ones.

European Commission

Research infrastructure concept development

Scope

This topic aims at supporting the development of **new concepts** for the **next generation of RIs of European interest**, single/multi sited, distributed or virtual that none or few countries might individually be able to implement. All fields of research can be considered. Both new and major upgrades (if equivalent to new concepts) of the RIs may be considered.

Proposals will tackle all key questions concerning the technical and conceptual feasibility of new/upgraded fully fledged user facilities:

- demonstrate **relevance** in relation to ERA and **advancement with respect to the state-of-the art**; highlight the **research challenges** and indicate the **gaps** in the RIs landscape the new/upgraded RI will cover and the **synergies with other existing RIs**; indicate, if relevant, potential impact at regional level.
- demonstrate that the project will effectively
  - identify: **technologies** and the **architecture** for developing the RI; scientific **user** communities that will benefit from access to RI services; **governance** options and **strategic** approaches for **commitment** and **engagement**.
  - develop: **initial financial plans** for the implementation and operation of the RI, ideas for **long-term sustainability** (synergies with other funds/programmes), plans for **data** curation and preservation and for the provision of access to data collected in line with **FAIR** principles.

Considering just a new component of a RI is not in scope of this topic.

"When relevant" **environmental** (incl. climate related) impacts, use of **resource and energy**.

European Commission

HORIZON-INFRA-2024-DEV-01-02:
Strengthen the bilateral cooperation on research infrastructures with Africa

TYPE OF ACTION

- Coordination and Support Action (CSA)

INDICATIVE BUDGET

- EUR 3 million
- Expected EU contribution per project: around EUR 1.5 million
- Indicative number of projects expected to be funded: 2

OTHER CONDITIONS

- Consortia must include at least 2 legal entities established in **2 different African Union member states**
- Eligible costs will take the form of a lump sum

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

Strengthen the bilateral cooperation on research infrastructures with Africa

Expected Outcome

- Improve research capacities in Africa
- Foster Euro-African cooperation in science
- Aligned with EU Africa strategy

European Commission

Strengthen the bilateral cooperation on research infrastructures with Africa

Scope

- Foster EU-Africa cooperation in research infrastructures, sharing of good practices and laying the ground for structuring RI capacities at pan-African level in fields other than those addressed by a previous call in 2021 (there is an ongoing project, until Sept 2025, on developing the knowledge base for climate change)
- Proposals should build on existing cooperation activities between African and European countries and take into account the outcomes of previous and ongoing collaborations. Along these lines, proposals that contribute to ongoing international initiatives are welcome.
- At least 2 legal entities from two diferent African Union countries in the consortium.

European Commission

HORIZON-INFRA-2024-DEV-01-03:
Consolidation of the RI landscape – Individual support for evolution and long-term sustainability of pan-European research infrastructures

TYPE OF ACTION

- Research and Innovation Action (RIA)

INDICATIVE BUDGET

- EUR 8 million
- Expected EU contr. per project: EUR 2 – 4 million
- Funding rate **80%**

OTHER CONDITIONS

- at least one of the **ESFRI Landmarks** or **ERICs**
- Indicative number of projects expected to be funded: 2

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

Consolidation of the RI landscape – Individual support for evolution and long-term sustainability of pan-European research infrastructures

Expected Outcome (several):

- better **structured and strengthened** European research infrastructure **landscape**;
- **new services** available to a wider user community, including participants in other parts of Horizon Europe, allowing **to better tackle scientific and societal challenges**;
- increased capacity to address **EU policy priorities** and/or **support EU industry**;
- reinforced **global competitiveness** of the **European Research Area**;
- reduction of **environmental (including climate-related) impacts** as well as optimisation of **resource and energy consumption** integrated through the **full life cycle** of research infrastructures;
- increased **long-term sustainability** of European research infrastructures.

European Commission

Consolidation of the RI landscape – Individual support for evolution and long-term sustainability of pan-European research infrastructures

Scope:

- Consolidation of the EU RI landscape through the support to the **strengthening, long-term sustainability, reorientation or evolution of ESFRI Landmarks or other ERICs**. Specific scope could however be further defined to address **specific emerging needs** identified and agreed at EU level.
- Activities towards long-term sustainability include enlargement of the **membership** or broadening the base of participating countries, **international** cooperation, revision of **business/funding plan**, development of managerial and technical **skills** for RI staff, and structuring and strengthening of national **nodes**.
- Support can also be provided to the development of solutions helping the **recovery** from the COVID-19 pandemic consequences on service provision, such as extension of **remote and virtual access**, or on the **management** of the infrastructure itself.

European Commission

Consolidation of the RI landscape – Individual support for evolution and long-term sustainability of pan-European research infrastructures

Scope (cont.):

- Activities for reorientation or evolution should **fill gaps in the RI landscape**, enabling the RI to address new research or societal challenges and/or serve new user communities, increasing and improving service capacity and/or integrating new resources/facilities.
- Proposals should explain any **synergies and complementarities with previous or current EU grants**.
- Specific attention should be given, where relevant, to the **greening** of technologies and methodologies used by the research infrastructure, to the **interaction with industry/SMEs**, to the fostering of the **innovation potential** – including the social innovation potential – of the infrastructures, and to their **integration into local, regional and global innovation ecosystems**.

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2.b Focus sur l'appel 2024-INFRA-DEV-01-01, Research infrastructure concept development : Analyse des *Evaluation Summary Reports*

Pascal Voury,
PCN Infrastructures

EXCELLENCE

Les « + »

- Pertinence et précision des objectifs en lien avec le *Work programme*
- Synergie ou continuité avec d'autres appels EU / ESFRI *Roadmap*.
- Ambitions du projet pour « repousser les limites de la science ».
- Solidité de la méthodologie, des concepts, modèles, hypothèses, et approches interdisciplinaires sous-jacents.
- Qualité des pratiques scientifiques ouvertes pour la gestion et le partage des résultats aux utilisateurs finaux.

Les « - »

- Objectifs vagues et génériques
- Projet en compétition avec d'autres, du même ordre de grandeur ou utilisant les mêmes technologies ; pas de justification des choix techno.
- Méthodologie peu décrite ou ne démontrant pas la capacité à atteindre les objectifs annoncés.
- Lacunes sur les aspects interdisciplinaires.
- Politique FAIR vague, lacunaire ou absente.
- Définition insuffisante des communautés d'utilisateurs visées, communauté(s) trop restreinte(s).

Les questions à se poser

- Ai-je bien cerné le cadre de l'appel à projet?
- Suis-je clair et crédible sur la définition de nos objectifs et sur le lien avec le *Work programme*?
- Ai-je des outils d'évaluation des objectifs, sont-ils correctement définis et pertinents ?
- Les principes FAIR de gestion des résultats sont-ils suffisamment clairs et détaillés ?
- **Note :** pour ce *topic* spécifiquement, la dimension de genre n'est pas un critère d'évaluation.

IMPACTS

Les « + »	Les « - »	Les questions à se poser
• Description claire des résultats, contribution à l'ensemble des impacts attendus dans cet appel. Intégration dans une démarche EU existante (ESFRI ou appel précédent) • Crédibilité de la stratégie pour atteindre les résultats et impacts annoncés, avec leur ampleur et importance prévues. • Adéquation et qualité des mesures prises pour maximiser les résultats et impacts attendus. • Exploitation, dissémination et communication appropriés et détaillés ; identification précise des différents publics-cible et des moyens mis en œuvre pour chacun d'entre eux (industriels bienvenus). • Transferts vers l'industrie ou échanges.	• Description vague ou générique des résultats et des impacts. • Manque de crédibilité de la stratégie ou de sa mise en œuvre dans la durée du projet. • Confusion entre exploitation des résultats, communication (de la recherche et des résultats) et dissémination (résultats rendus publics pour tous, bien commun) ; dissémin. ou comm. générique tous azimuts (p.ex. « réseaux sociaux ») ; publics-cible mal définis. • Gestion de la propriété intellectuelle ou des aspects légaux associés aux données évasive ou pas abordée.	• Ai-je bien cerné les attentes du *Work programme* pour cet appel à projet? • Ai-je mobilisé toutes les ressources disponibles pour identifier les enjeux (par exemple *Roadmap* de l'ESFRI) ? • Suis-je suffisamment exhaustif sur les impacts scientifiques, technologiques et sociétaux? Ai-je dédié suffisamment de ressources pour la communication et la dissémination? En particulier vers les décideurs ou les organisations gouvernementales (si approprié) ? • Ai-je étudié les questions de propriété intellectuelle ; y a-t-il des aspects légaux à traiter (données sensibles) ?

Mise en œuvre : QUALITÉ et EFFICACITÉ

Les « + »

- Gouvernance solide et compétente (expertise suffisante dans tous les domaines).
- Expérience et compétences des membres du consortium prouvées, complémentaires et suffisantes.
- Décrire un *Workplan* précis, logique, cohérent et en lien avec les objectifs et les impacts attendus (*Work Packages*, sous-tâches, livrables, jalons).
- Indicateurs-clé de performance (*KPI*) et méthodes de mesure appropriés et faisant sens.
- Analyse des risques crédible, mesures de mitigation prévues.
- Prise en compte appropriée de la soutenabilité de long terme, de l'efficacité énergétique et de l'empreinte carbone, si approprié.

Les « - »

- Qualification des partenaires très hétérogène, sans explication dédiée.
- Rôles et responsabilités des membres peu ou mal définies dans le *WP*, recouvrements entre *WP* ou sous-tâches, Diagramme de Gantt superficiel ou non adapté.
- Suivi de l'avancée des différentes activités pas suffisamment documenté, peu convaincant.
- Risques pas ou mal évalués, plans de contournement des risques peu détaillés, perçus comme évasifs.
- Evaluation imprécise du budget demandé, budget ou ressources humaines non adaptés aux objectifs, ou aux tâches de chaque partenaire.

Les questions à se poser

- Notre plan de mise en œuvre est-il à la hauteur des ambitions du projet?
- Ai-je couvert toutes les expertises nécessaires?
- Mes *Work Packages* sont-ils bien définis, reliés les uns aux autres ; les compétences des participants bien décrites et utilisées? Les sous-sections, les livrables et jalons sont-ils cohérents ?
- Ai-je des procédures de suivi et de contrôle des tâches prévues? Mes indicateurs-clé de performances sont-ils crédibles?
- Les budgets sont-ils cohérents? La quantité de travail adaptée aux ressources (HM) prévues?
- Ai-je fait une évaluation exhaustive et sincère des risques propres à mon consortium ? Les stratégies d'atténuation décrites et crédibles ?

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2.c. Témoignage d'un porteur de projet INFRA-DEV

Marcos Dracos,
IPHC-IN2P3/CNRS, Université de Strasbourg

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Marcos Dracos
Directeur de Recherche
IPHC-IN2P3/CNRS/UNISTRA

Participation aux projets Européens (physique du neutrino):

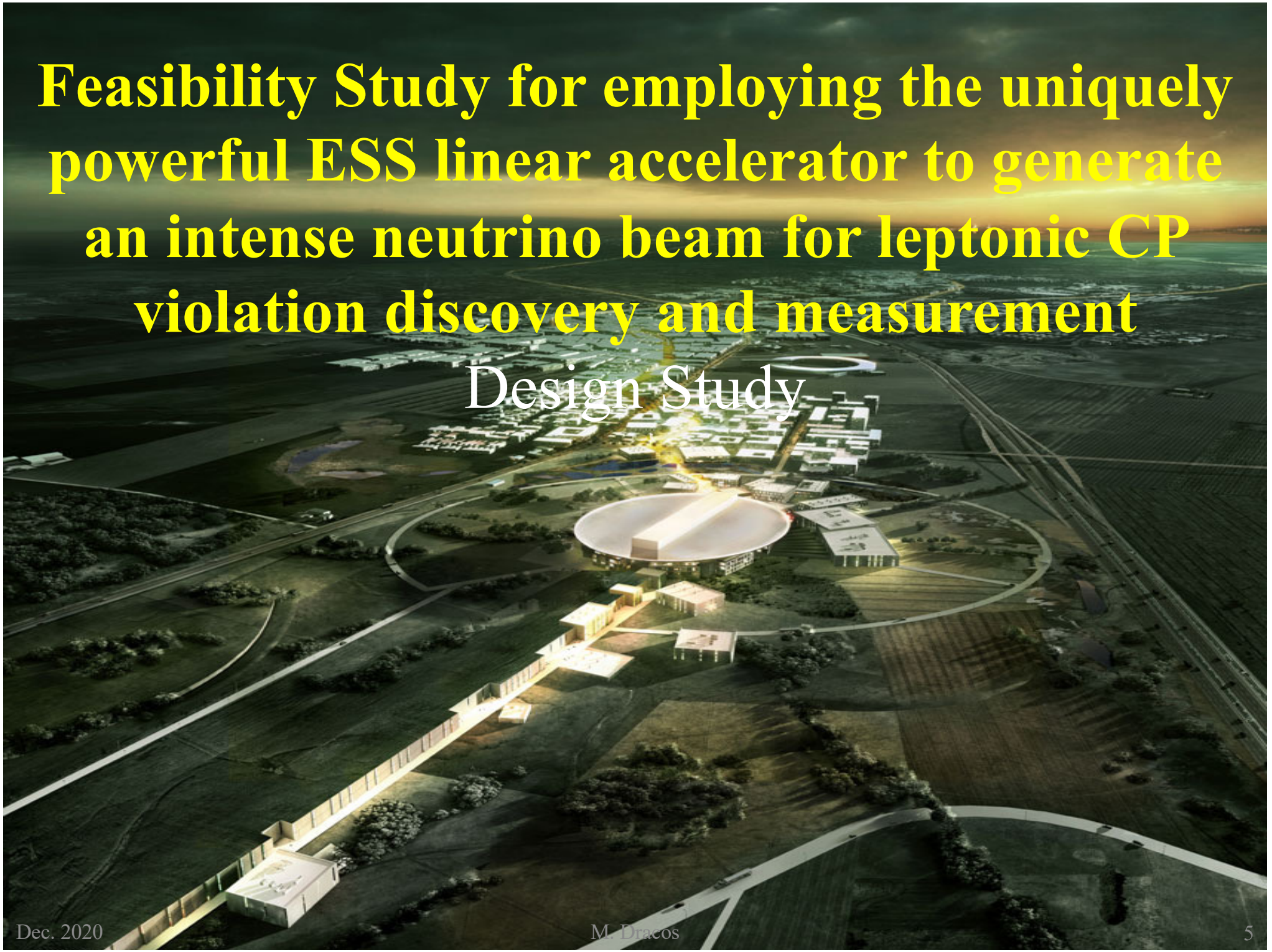
- 2005-2007: FP6, CARE/BENE (ccordinateur de WP)
- 2008-2012: FP7, INFRADEV-EUROnu (debuty)
- 2016-2020: EuroNuNet/COST (coordinateur)
- 2018-2022: H2020, INFRADEV-ESSnuSB (coordinateur)
- 2023-2026: HE, INFRADEV-ESSnuSB+ (coordinateur)

HORIZON-INFRA-2022-DEV: Design Studies

- Developing new world-class research infrastructures.
  - Facilitate and support the implementation and **long-term** sustainability of the research infrastructures identified by the European Strategy Forum on Research Infrastructures (**ESFRI**) as well as of other world-class research infrastructures.
  - These will help Europe respond to grand challenges in science, industry and society.
  - Next generation of new research infrastructures can be identified through design studies. Support will be provided to:
    - Conceptual and technical design of new research infrastructures, which are of a clear European dimension and interest, through a bottom-up approach.

The Commission considers that proposals requesting a contribution from the EU of between **EUR 1 and 3 million** would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)	Number of projects expected to be funded
		2022		
Opening: 19 Jan 2022 **Deadline(s): 20 April 2022**				
HORIZON-INFRA-2022-DEV-01-01	RIA	21.8 M€	1.00 to 3.00	7

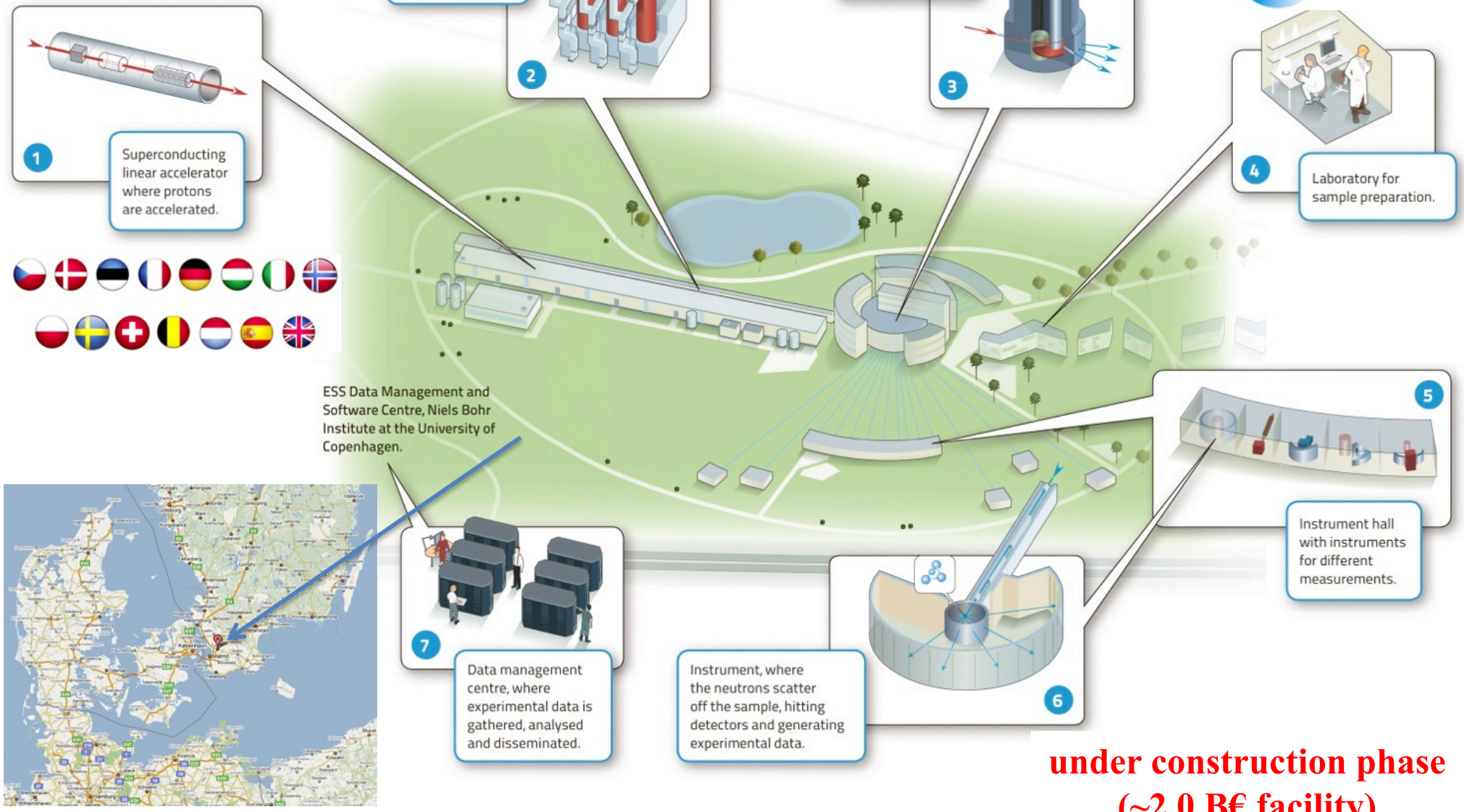


Feasibility Study for employing the uniquely powerful ESS linear accelerator to generate an intense neutrino beam for leptonic CP violation discovery and measurement

Design Study

European Spallation Source

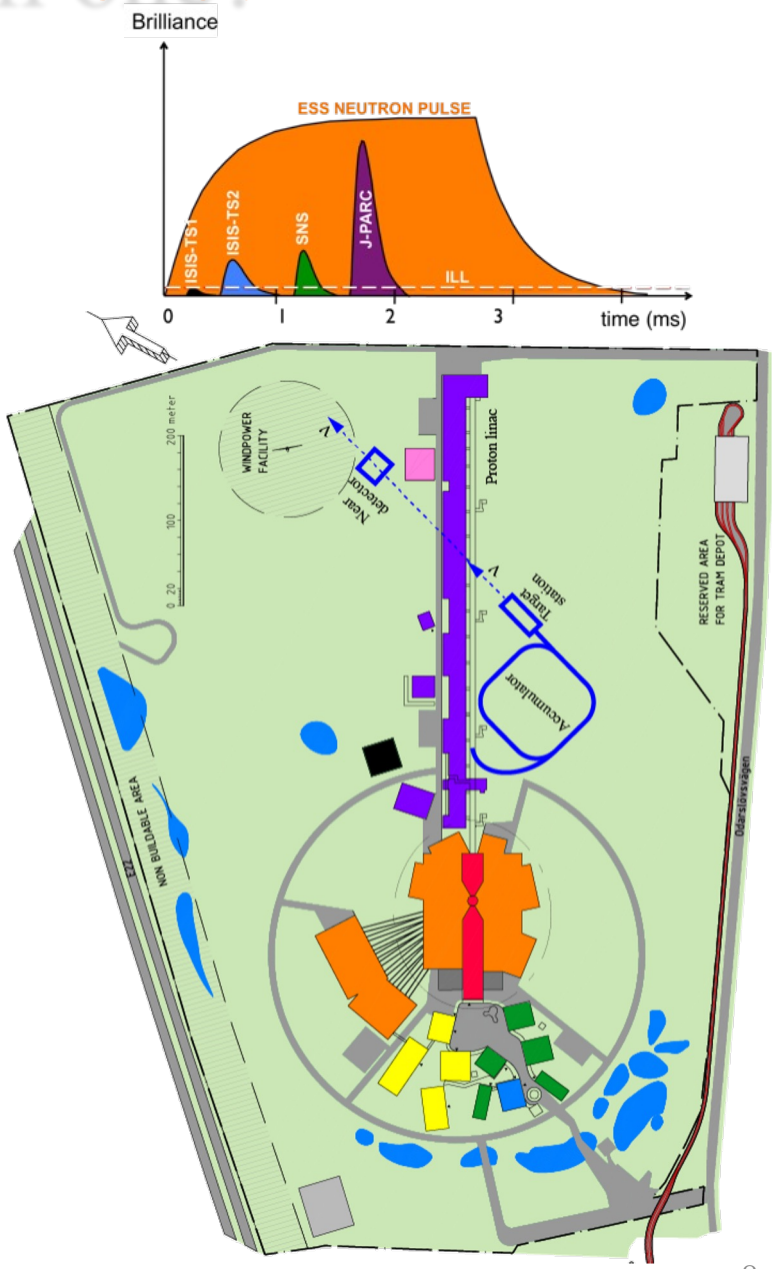
Neutron facility
(equivalent to SNS)



under construction phase
(~2.0 B€ facility)

How to add a neutrino facility on top of the neutron one?

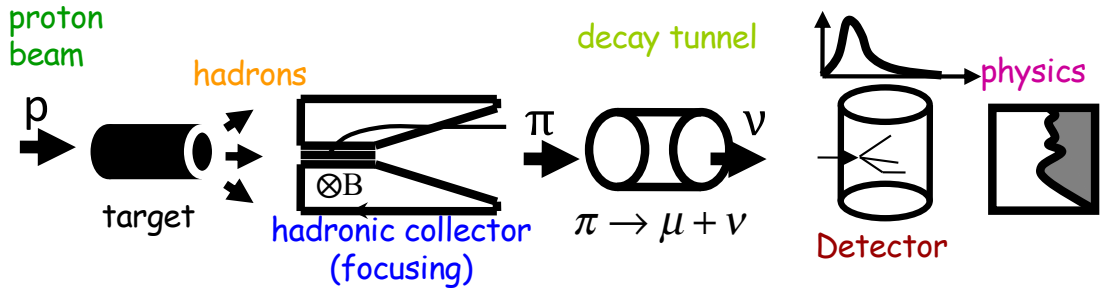
- The neutron program must not be affected and if possible synergetic modifications.
- Linac modifications: double the rate (14 Hz → 28 Hz), from 4% duty cycle to 8%.
- Accumulator (C~400 m) needed to compress to few μs the 2.86 ms proton pulses, affordable by the magnetic horn (350 kA, power consumption, Joule effect)
  - H^- source (instead of protons),
  - space charge problems to be solved.
- ~300 MeV neutrinos.
- Target station (studied in EUROν).
- Underground detector (studied in LAGUNA).
- Short pulses (~μs) will also allow DAR experiments using the neutron target.



Having access to a powerful proton beam…

What can we do with:

- 5 MW power
- 2 GeV energy
- 14 Hz repetition rate
- 10^{15} protons/pulse
- >2.7x10^{23} protons/year



conventional neutrino (super) beam

Oscillation to be studied: $\nu_\mu \longrightarrow \nu_e$

Evaluation

Excellence (0-5) **The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work programme:**	**Impact (0-5)**	**Quality and efficiency of the implementation (0-5)**
• Clarity and pertinence of the objectives. • Credibility of the proposed methodology. • Work beyond the state of the art. • Innovation potential. • Interdisciplinary approaches.	• Extent to which the outputs of the project would contribute to each of the expected impacts mentioned in the work programme under the relevant topic; • Any substantial other impacts, that would enhance innovation capacity, create new market opportunities, strengthen competitiveness and growth of companies, address issues related to climate change or the environment, or bring other important benefits for society; • Exploitation and dissemination the project results, including management of IPR.	• Quality and effectiveness of the work plan (resources assigned to work packages in line with their objectives and deliverables); • Appropriateness of the management structures and procedures (risk and innovation management); • Complementarity of the participants. Extent to which the consortium as whole brings together the necessary expertise; • Appropriateness of the allocation of tasks (all participants have a valid role and adequate resources in the project to fulfil that role).

rejected if < 3 in any of the three criteria and if total < 10

Document Structure and limitations
(technical description)

- A template is given and **must** be followed.
- The document should not be longer than **45 pages**.
- The page limit will be applied automatically;
- 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.
- Define the Work Packages as soon as possible
- Define the participants as soon as possible:
  - task sharing
  - financial contribution
- Avoid last minute participants

Document Structure

1. Excellence

1.1 Objectives and ambitions (e.g. 4 pages)

- *Describe the **specific objectives** for the project, which should be clear, measurable, realistic and achievable within the duration of the project. Objectives should be consistent with the expected exploitation and impact of the project.*
- *Describe the advance your proposal would provide **beyond the state-of-the-art**, and the extent the proposed work is ambitious.*
- *Describe the **innovation potential** which the proposal represents. Where relevant, refer to products and services already available on the market. Please refer to the results of any patent search carried out.*
- *Indicate the **work programme topic** to which your proposal relates, and explain how your proposal addresses the specific challenge and scope of that topic, as set out in the work programme.*

1.2 Methodology (e.g. 15 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.*
- *Describe any national or international research and **innovation activities** whose results will feed into the project;*
- *Explain how expertise and methods from different disciplines will be brought together and integrated in pursuit of your objectives.*
- *Describe how the **gender dimension** (i.e. sex and/or gender analysis) is taken into account in the project's research and innovation content. If you do not consider such a gender dimension to be relevant in your project, please provide a justification.*
- *Describe how appropriate **open science** practices are implemented as an integral part of the proposed methodology.*

Document Structure

2. Impact

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.

- 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.
- *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. 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.*
- *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.*

2.2 Measures to maximise impact – Dissemination, exploitation and communication (e.g. 5 pages)

- *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).*
- *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.*

2.3 Summary

Part B: Impact summary
(2 pages)

KEY ELEMENT OF THE IMPACT SECTION

SPECIFIC NEEDS	EXPECTED RESULTS	D & E & C MEASURES
What are the specific needs that triggered this project? Insert here text for your proposal	What do you expect to generate by the end of the project? Insert here text for your proposal	What dissemination, exploitation and communication measures will you apply to the results? Insert here text for your proposal

TARGET GROUPS	OUTCOMES	IMPACTS
Who will use or further up-take the results of the project? Who will benefit from the results of the project? Insert here text for your proposal	*What change do you expect to see after successful dissemination and exploitation of project results to the target group(s)?* Insert here text for your proposal	*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?* Insert here text for your proposal

Document Structure

3. Quality and efficiency of implementation

3.1 Work plan and resources (e.g. 14 pages including tables)

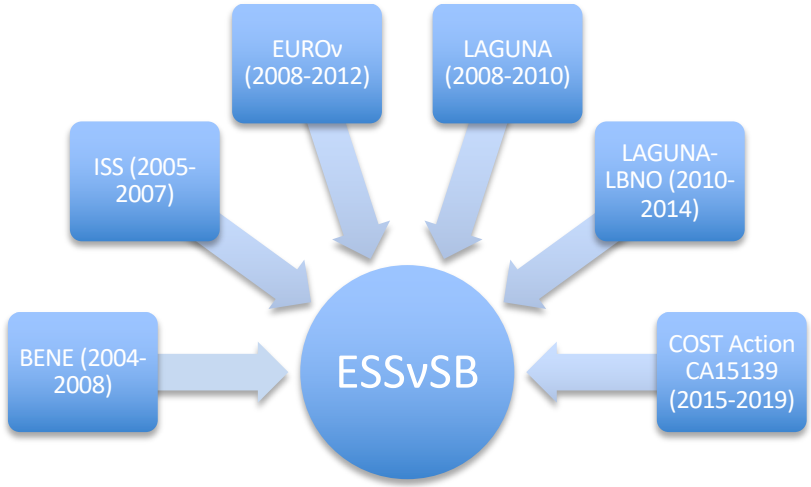
- *brief presentation of the overall structure of the work plan;*
- *timing of the different work packages and their components (Gantt chart or similar);*
- *graphical presentation of the components showing how they inter-relate (Pert chart or similar).*
- *detailed work description, i.e.:*
  - *a list of **work packages** (table 3.1a);*
  - *a description of each work package (table 3.1b);*
  - *a list of major **deliverables** (table 3.1c);*
- *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**.*
- *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);*

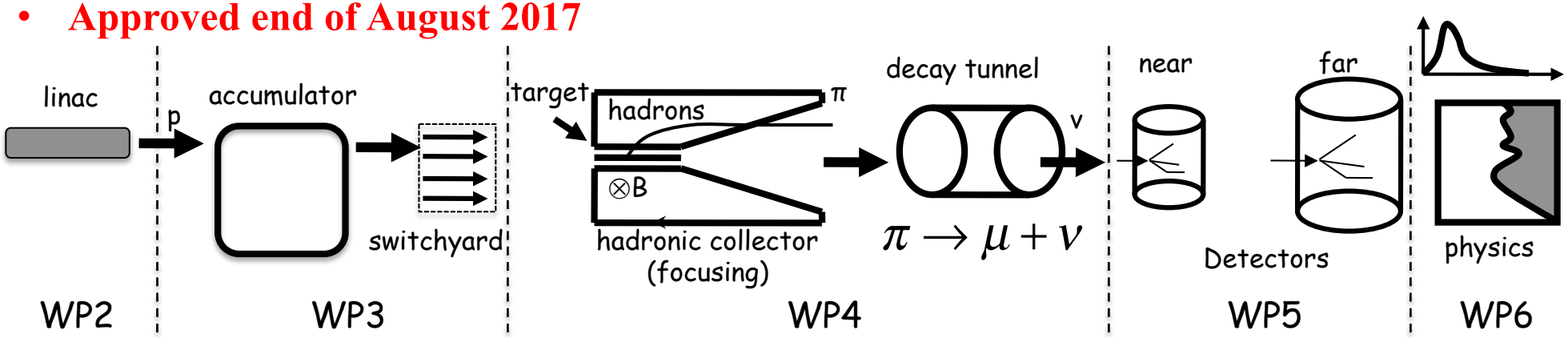
3.2 Capacity of participants and consortium as a whole (e.g. 3)

- ***Describe the consortium**. How does it match the project's objectives, and bring together the necessary discipline and inter-disciplinary knowledge.*
- *Show how the partners will have access to critical infrastructure needed to carry out the project activities.*
- *Describe how the members complement one another.*
- *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.*

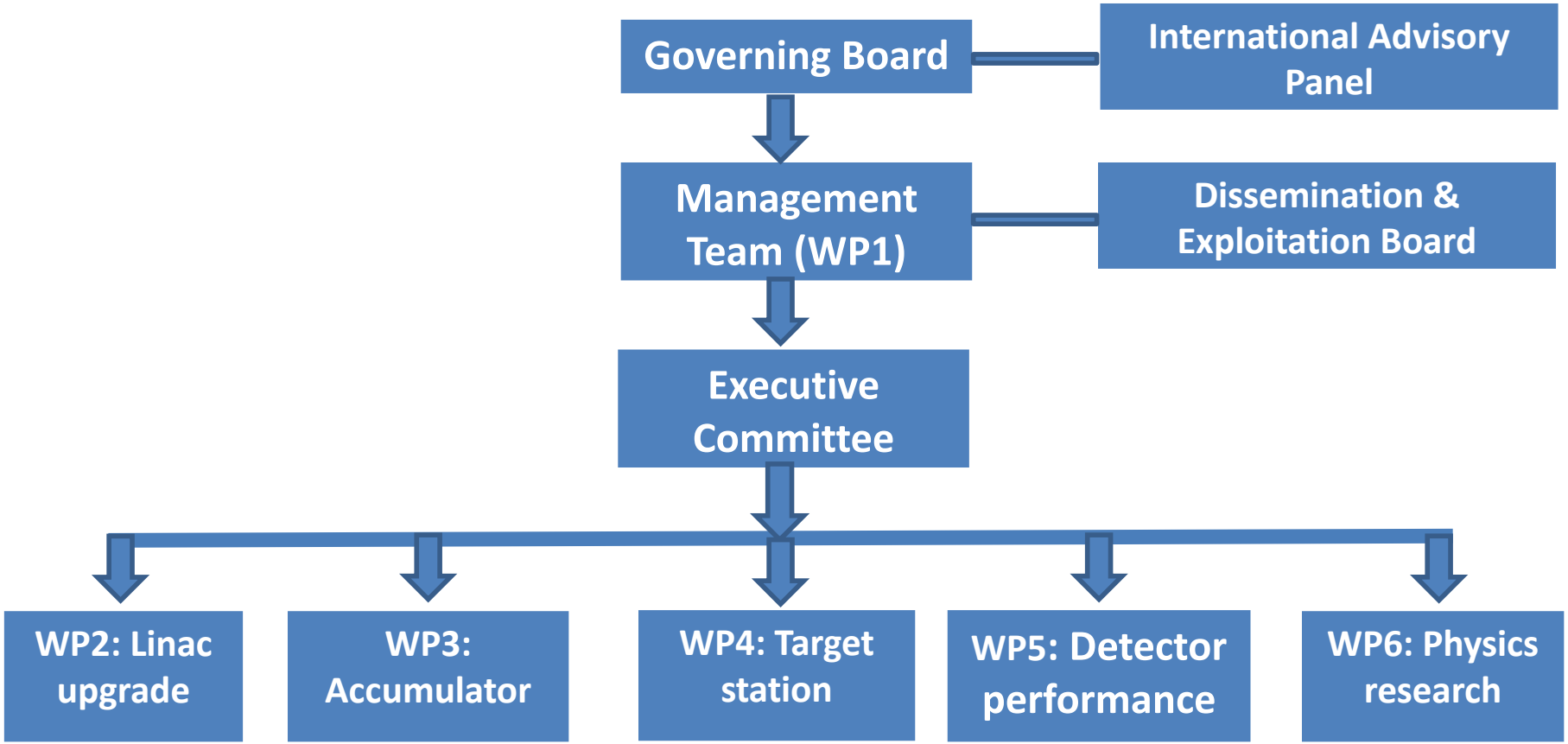
ESSvSB at the European level

- A **H2020** EU **Design Study** (Call INFRADEV-01-2017)
  - **Title of Proposal**: Discovery and measurement of leptonic CP violation using an intensive neutrino Super Beam generated with the exceptionally powerful ESS linear accelerator
  - **Duration: 4 years**
  - **Total cost: 4.7 M€**
  - **Requested budget: 3 M€ (64% funding rate)**
  - **15 participating institutions from 11 European countries including CERN and ESS**
  - 6 Work Packages
  - **Approved end of August 2017**





Design Study ESSvSB
(2018-2022)



Design Study ESSvSB
(2018-2022)

Call: H2020-INFRADEV-2017-1
Funding scheme: RIA
Proposal number: 777419
Proposal acronym: ESSnuSB
Duration (months): 48
Proposal title: Feasibility Study for employing the uniquely powerful ESS linear accelerator to generate an intense neutrino beam for leptonic CP violation discovery and measurement.
Activity: INFRADEV-01-2017

Maximum grant amount (proposed amount, after evaluation): **2,999,018.00 EUR**

N.	Proposer name	Country
1	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR
2	UPPSALA UNIVERSITET	SE
3	KUNGLIGA TEKNISKA HOEGSKOLAN	SE
4	EUROPEAN SPALLATION SOURCE ERIC	SE
5	UNIVERSITY OF CUKUROVA	TR
6	UNIVERSIDAD AUTONOMA DE MADRID	ES
7	NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"	EL
8	ISTITUTO NAZIONALE DI FISICA NUCLEARE	IT
9	RUDER BOSKOVIC INSTITUTE	HR
10	SOFIISKI UNIVERSITET SVETI KLIMENT OHRIDSKI	BG
11	LUNDS UNIVERSITET	SE
12	AKADEMIA GORNICZO-HUTNICZA IM. STANISLAWA STASZICA W KRAKOWIE	PL
13	EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH	CH
14	UNIVERSITE DE GENEVE	CH
15	UNIVERSITY OF DURHAM	UK
	Total:	

More information on:
http://essnusb.eu/

CDR in 2022

partners: IHEP, BNL, SCK•CEN, SNS, PSI, RAL

ESSvSB+

Research and Innovation actions

Innovation actions

Design Study

HORIZON-INFRA-2022-DEV-01

Title of Proposal: Study of the use of the ESS facility to accurately measure the neutrino cross-sections for ESSvSB leptonic CP violation measurements and to perform sterile neutrino searches and astroparticle physics.

ESSvSB+

Participant no.	Participant organisation name	Part. short name	Country
1 (Coordinator)	Centre National de la Recherche Scientifique	CNRS	France
2	Université de Strasbourg	UNISTRA[1]	France
3	Rudjer Boskovic Institute	RBI	Croatia
4	Tokai National Higher Education and Research System, National University Corporation	NU[2]	Japan
5	Uppsala Universitet	UU	Sweden
6	Lunds Universitet	ULUND	Sweden
7	European Spallation Source ERIC	ESS	Sweden
8	Kungliga Tekniska Hoegskolan	KTH	Sweden
9	Universitaet Hamburg	UHH	Germany
10	University of Cukurova	CU	Turkey
11	National Center for Scientific Research "Demokritos"	NCSRD	Greece
12	Aristotelio Panepistimio Thessalonikis	AUTH[1]	Greece
13	Sofia University St. Kliment Ohridski	UniSofia	Bulgaria
14	Lulea Tekniska Universitet	LTU	Sweden
15	European Organisation for Nuclear Research	CERN	IEIO[3]
16	Universita degli Studi Roma Tre	UNIROMA3	Italy
17	Universita degli Istudi di Milano-Bicocca	UNIMIB	Italy
18	Istituto Nazionale di Fisica Nucleare	INFN	Italy
19	Universita degli Istudi di Padova	UNIPD[1]	Italy
20	Consorcio para la construccion, equipamiento y explotacion de la sede espanola de la fuente Europea de neutrones por espalacion	ESSB	Spain

ESSvSB+

ESS Neutrino Super Beam Plus

And the EU decision arrived earlier than expected…
26/07/2022

Marcos DRACOS
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS
RUE MICHEL ANGE 3
75794 PARIS
FRANCE

- 3 M€
- 4 years

Subject: Horizon Europe (HORIZON)
Call: HORIZON-INFRA-2022-DEV-01
Project: 101094628 — ESSnuSBplus
GAP invitation letter

Dear Applicant,

I am writing in connection with your proposal for the above-mentioned call.

Having completed the evaluation, we are pleased to inform you that your proposal has passed this phase and that we would now like to start grant preparation.

Please find enclosed the evaluation summary report (ESR) for your proposal.

Invitation to grant preparation

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2.d. INFRA-DEV : Questions Réponses

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3.a Présentation générale de la destination INFRA-EOSC des appels 2024

Volker Beckmann,
MESR, DGRI, SSRI

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HORIZON-INFRA-2024-EOSC

Volker Beckmann, chargé de mission EOSC au DGRI / SSRI / A7

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HORIZON-INFRA-EOSC 2023/2024

- HORIZON-INFRA work programme for 2023/2024 (budget EOSC: 130 M€)
- Les appels HORIZON-INFRA-2024-01 seront ouverts à partir du 6 décembre 2023 (date limite prévue pour le 12/03/2024)

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Horizon Europe EOSC Work Program 2024

Ouverture: 06/12/2023; Date limite: 12 mars 2024

Topic HORIZON-INFRA-2024-…	Title	Type	Budget total [M€]	#projets
EOSC-01-01	FAIR and open data sharing in support of the mission **adaptation to climate change**	RIA	16	2
EOSC-01-02	Supporting the **EOSC Partnership** in further consolidating the coordination and sustainability of the EOSC ecosystem	CSA	4	1
EOSC-01-03	Enabling a network of EOSC **federated and trustworthy repositories** and enhancing the framework of generic and discipline specific services for data and other research digital objects	CSA	5	1
EOSC-01-04	Long-term access and preservation infrastructure development for EOSC, including data quality aspects	RIA	8	1
EOSC-01-05	Innovative and customizable services for **EOSC Exchange**	RIA	28	4
2024-EOSC-01			61	9

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Horizon Europe EOSC Work Program 2024

Ouverture: 06/12/2023; Date limite: 12 mars 2024

Topic **HORIZON-INFRA-2024-…**	**Description non exhaustive**
EOSC-01-01 RIA **16 M€** 2 projets prévu	FAIR and open data sharing in support of the mission **adaptation to climate change** Expected outcome: • **Seamless interactions between EOSC, operational data spaces or environments** (e.g. the DRMKC Risk Data Hub, the European Climate Adaptation Platform (Climate Adapt, relevant Copernicus Services, the GEOSS Portal, the EOSC platform, etc.), researchers and other stakeholders contributing to adaptation to climate change to store, share, access, analyse and process research data and other research digital objects from their own discipline, across research infrastructures, disciplines and national borders; • Open and FAIR data is the new norm for research contributing to adaptation to climate change; • **EU-wide sharing of research data** relevant to this area is shown to be a critical mechanism to facilitate climate adaptation across Member States and Associated Countries with involvement of the regions and local authorities; • EOSC grows into a **trusted research and innovation data space and service platform** in Europe that articulates with the **Green Deal data space** and supports the interdisciplinary research community involved in mission climate adaptation • Contribute to the Horizon Europe EOSC Partnership and other relevant partnerships related to adaptation to climate change.

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Horizon Europe EOSC Work Program 2024

Ouverture: 06/12/2023; Date limite: 12 mars 2024

Topic **HORIZON-INFRA-2024-…**	**Description non exhaustive**
EOSC-01-02 CSA **4 M€** 1 projet prévu	Supporting the **EOSC Partnership** in further consolidating the coordination and sustainability of the EOSC ecosystem Expected outcome: • EOSC increases the level of coordination of national and European initiatives, creating mechanisms of mutual learning, replication of best practices and joint activities. This expected outcome will be achieved mainly through **financial support to third parties** in the form of cascading grants [**1 M€ for grants up to 100 k€**]; • EOSC increases the level of coordination and directionality among EOSC-related initiatives and Horizon Europe funded actions, ensuring a more proactive and impactful approach towards attaining the SRIA objectives. This expected outcome will be achieved through targeted financial support to third parties in the form of cascading grants; • Step forward towards a more sustainable EOSC that enables smooth transnational access to data and services, trough the test and implementation of coherent business models; • Facilitated **access to information to and from all EOSC stakeholders** across countries, institutions, networks and initiatives is increasingly enabled.

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Horizon Europe EOSC Work Program 2024

Ouverture: 06/12/2023; Date limite: 12 mars 2024

Topic **HORIZON-INFRA-2024-…**	**Description non exhaustive**
EOSC-01-03 CSA **5 M€** 1 projet prévu	Enabling a network of EOSC **federated and trustworthy repositories** and enhancing the framework of generic and discipline specific services for data and other research digital objects Expected outcome: • A **European network of trustworthy repositories** is established that will enhance the EOSC ecosystem, contribute to the consolidation of Open Science practices and support European researchers. • The concept and **requirements of trustworthy repositories are harmonised** and therefore support the European funders in better addressing the Open Science provisions in their programmes • Data depositing ecosystem in Europe are adequately supported, providing a **common voice for research digital repositories** to better interact with the research and innovation policy making and to respond in a more coordinated and cohesive manner to the need of the European researchers. Synergies and complementarities should be sought with projects funded under the topics HORIZON-INFRA-2021-EOSC-01-05, and should continue to build on outcomes from the Horizon 2020 project FAIRsFAIR. Close cooperation is also expected with the projects funded under the topics HORIZON-INFRA-2023-EOSC-01-01 (OSCARS project), and HORIZON-INFRA-2024-EOSC-01-04 (Long-term access and preservation infrastructure development for EOSC, including data quality aspects).

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Horizon Europe EOSC Work Program 2024

Ouverture: 06/12/2023; Date limite: 12 mars 2024

Topic **HORIZON-INFRA-2024-…**	**Description non exhaustive**
EOSC-01-04 RIA **8 M€** 1 projet prévu	Long-term access and preservation infrastructure development for EOSC, including data quality aspects Expected outcome: • **Practices, standards and tools for long-term preservation** are mainstreamed in the EOSC ecosystem. • The emergence of a European **distributed infrastructure for long-term preservation** and access is adequately supported. • The sustainability of long-term preservation among the European scientific community is significantly enhanced Align with the EOSC Partnership and coordinate and collaborate with the projects funded under the topic HORIZON-INFRA-2024-EOSC-01-03 (Enabling a network of EOSC **federated and trustworthy repositories** and enhancing the framework of generic and discipline specific services for data and other research digital objects) with regards to the interconnection of repositories and other archiving infrastructure, and with the projects under the topic HORIZON-INFRA-2023-EOSC-01-02 (EVERSE project), especially with regards to the quality dimension explored under that topic.

Work programme for 2023/2024

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Horizon Europe EOSC Work Program 2024

Ouverture: 06/12/2023; Date limite: 12 mars 2024

Topic **HORIZON-INFRA-2024-…**	**Description non exhaustive**
EOSC-01-05 RIA **28 M€** 4 projets prévu	Innovative and customizable services for **EOSC Exchange** Expected outcome: • Next generation EOSC provides researchers with the means to **easily access complete datasets and analysis platforms and provide services** that support reproducibility, as well as ensuring long-term preservation and long-term availability of these research data and tools. • Ecosystem of **novel tools and services, as many new FAIR-by-design datasets as possible**, whereby researchers are able to deliver much more rapidly the outputs of each part of the research lifecycle, including data and software, with the same level of precision as they deliver publications today • Enhanced services and tools for researchers to lower the bar and underpin the **initial research planning and preparation phase** (i.e. entry phase) of the research lifecycle. Participation of the private sector, in particular SMEs, is recommended for both the development and further exploitation of the project result

Work programme for 2023/2024

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Horizon Europe EOSC Work Program 2023

Opening: 06/12/2022; Deadline: 9 mars 2023

Topic **HORIZON-INFRA-2023-…**	**Short description**
EOSC-01-01 RIA **25 M€** 1 projet financé : OSCARS OSCARS en France : CNRS (chef de file du projet), ESRF, Dariah ERIC	Build on the science cluster approach *(*EOSC-Life, ENVRI-FAIR, ESCAPE, SSHOC, PaNOSC*)*, to ensure the uptake of EOSC by research infrastructures and research communities Third party financing: **at least 18 M€**, with **100 - 250 k€** per third party grant (duration **12-24** months) Expected outcome: • Support all researcher communities across Europe to contribute to and benefit from a user-oriented EOSC; • Populate EOSC Exchange with FAIR data, horizontal services and thematic services of relevance to users in several scientific domains and beyond; • Develop and demonstrate through cascading grants concrete scientific benefits of open science and FAIR practices through cross-disciplinary use cases; • Increased alignment of operation of ESFRI and international RIs at the subdomain, domain and interdisciplinary levels in function of the progressive deployment of the EOSC Core, EOSC Exchange and EOSC sustainability models; • Provide feedback and requirements for the evolution of the EOSC ecosystem.

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Horizon Europe EOSC Work Program 2023

Opening: 06/12/2022; Deadline: 9 mars 2023

Topic **HORIZON-INFRA-2023-…**	**Short description**
EOSC-01-01 RIA **25 M€** 1 projet financé : OSCARS OSCARS en France : CNRS (chef de file du projet), ESRF, Dariah ERIC	Build on the science cluster approach *(*EOSC-Life, ENVRI-FAIR, ESCAPE, SSHOC, PaNOSC*)*, to ensure the uptake of EOSC by research infrastructures and research communities Third party financing: **at least 18 M€**, with **100 - 250 k€** per third party grant (duration **12-24** months) Expected • Supp … user-oriented EOS… • Popu … relevance to users • Deve … science and FAIR • Increa … domain and interd … C Exchange and E… • Provide feedback and requirements for the evolution of the EOSC ecosystem.

"The open calls under this activity should respect the conditions laid out in Section B of the General Annexes, including transparency, equal treatment, conflict of interest and confidentiality.
Research infrastructures which are beneficiaries/affiliated entities of the consortium awarded may exceptionally also be recipients of financial support to third parties.
Proposals must explain how they will ensure that such beneficiaries/affiliated entities are not involved in the selection procedure of the calls, in order to avoid conflicts of interest and maintain confidentiality."

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Comment trouver opportunités de *cascading grants*?

- Un certain nombre de projets de l'EOSC offrent *cascading grants*
  - EOSC-Future, INFRA-2023-EOSC-01-01 (OSCARS), INFRA-2024-EOSC-01-02
- Procédure de demande relativement légère, souvent de bonnes chances de réussite de la proposition
- https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/competitive-calls

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European Open Science Cloud

- Le développement de l'EOSC peut être financé par le programme Horizon Europe (HORIZON-INFRA-EOSC).
- La prochaine vague d'appels sera ouverte le 6 décembre 2023
- Les *cascading grants* du projet OSCARS offrent des options de financement (<250 k€) pour des activités spécifiques. Les appels devraient ouvrir ~mars et ~novembre 2024.

Plus d'informations ? Inscrivez-vous à la liste de diffusion de l'EOSC-France :

https://groupes.renater.fr/sympa/info/eosc_france_info

volker.beckmann@recherche.gouv.fr

Contactez-moi (et/ou le bureau d'Horizon Europe au MESR) si vous souhaitez discuter d'idées de propositions spécifiques.

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Documents clés d'EOSC

- Qu'est-ce que l'European Open Science Cloud / What is the EOSC
- EOSC en 7 questions
- EOSC Executive Board final progress report
- Results of the EOSC Working Groups (2019 / 2020)
- EOSC Strategic Research and Innovation Agenda (SRIA)
- EOSC Association Statutes
- Scholarly Infrastructures for Research Software
- ESFRI Science Clusters Position Statement on Open Science
- Horizon Europe Work Program for Research Infrastructures / EOSC

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EOSC : Liens importants

- EOSC Portal
- EOSC Association
- EOSC Association Advisory Groups
- Journées EOSC-France, 13-14 juin 2023
- MESR Horizon Europe web page
- European Commission EOSC page
- EOSC-Pillar
- EOSC-Future
- EOSC Symposium 2022
- EOSC Symposium 2023

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3.b INFRA-EOSC : Questions Réponses

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4.a. Présentation générale de la destination INFRA-TECH des appels 2024

Agnès Robin,
Commission Européenne
Head of Sector Research Infrastructures

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European Commission

THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027

RESEARCH INFRASTRUCTURES

INFRATECH

Agnès Robin, Head of Sector
24 November 2023

Research and Innovation

INFRATECH: Next generation of scientific instrumentation, tools and methods and advanced digital solutions

Objective: **Develop** ground-breaking **RI technologies**, incl. scientific instrumentation, tools, methods, and advanced digital solutions, to **enable new discoveries** and keep RIs in EU and AC at the highest level of excellence in science, while paving the way to innovative solutions to societal challenges and new industrial applications, products and services.

Main Impact: *(proposals should set out credible pathways to contribute to one/several of the following impacts)*

- Enhanced global competitiveness and technological excellence of the EU and Associated Countries in an extremely fast-moving environment through investments into the development, of forward-looking technical instruments and tools for European RIs.
- Enhanced competitiveness of EU and Associated Countries industry through co-development with industrial actors of advanced RI technologies and technology transfer;
- Opening up of new areas of research and development of new industrial applications/products;
- Development of skills of RI staff aligned with the advancements of the RI technologies;
- Transdisciplinarity, cross-fertilisation and a wider sharing of knowledge and technologies between academia and industry;
- Wider use of AI in research and enhanced data-driven research across the EU and Associated Countries.

HORIZON-INFRA-2024-TECH-01-01:
R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade

TYPE OF ACTION

- Research and Innovation Action (RIA)

INDICATIVE BUDGET

- EUR 63,50 million
- Expected EU contribution per project: EUR 5-10 million
- Indicative number of projects funded: 8

OTHER CONDITIONS

- Consortia must include at least 3 different RIs being ESFRI RIs, ERICs, or other RI being intergovernmental organisation of European interest.

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade

Expected Outcomes:

- Enhanced scientific competitiveness of European research infrastructures;
- Enhanced RI capacities to address research challenges & EU policy priorities;
- Foundations for the development of innovative companies;
- Increased collaboration of research infrastructures with universities, research organisations and industry;
- Increase technological level of industry through the co-development of advanced technologies for research infrastructures and creation of potential new markets;
- Integration of research infrastructures into local, regional & global innovation systems; promotion of entrepreneurial culture.

R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade

Scope:

- Deliver innovative scientific instrumentation, tools, methods & solutions to advance state-of-art of RIs in the EU and AC & show transformative potential in RIs operation. Underpin the provision of improved & advanced services & lead research infrastructures to support new areas of research and/or a wider community of users, including industrial users.
- Cutting-edge technologies will enhance the potential of RIs to help address EU policy objectives and socio-economic challenges.
- Proposals should **ensure complementarity** with actions funded under the previous 2022 call (topic **HORIZON-INFRA-2022-TECH-01-01** in the 2021-2022 work programme), **targeting different instrumentation, tools, methods and solutions**.
- Consortia to be built around a leading core of at least 3 world-class research infrastructures (see above), and can include a wider set of RIs. Other technological partners, including industry and SMEs, should also be involved, to promote innovation & knowledge sharing through co-development of new technical solutions for research infrastructures.
- Proposals may include PCP subcontracting activities as described in part H of the General Annexes of the work programme.

R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade

Scope (cont.):

Proposals should address the following aspects, as relevant:

- Research & development of new scientific instrumentation, tools & methods for research infrastructures taking into account resource efficiency (e.g. energy consumption) & environmental (including climate-related) impacts. Could include the development of new, more sustainable & efficient methods of collecting data and/or of providing access, including remote & digital, as well as digitalisation of instrumentation, services and results;
- Their technology validation and prototyping;
- Training of RI staff for operation & use of these new solutions. When relevant, developing skills on technical validation to industrial standards;
- The innovative potential for industrial exploitation of the solutions and/or for the benefits of society, including facilitating proof of concept for use by SMEs.

HORIZON-INFRA-2024-TECH-01-02:
Development of tools, solutions, modules to enable R&I on the social aspects of the green transition

TYPE OF ACTION

- Research and Innovation Action (RIA)

INDICATIVE BUDGET

- EUR 5 million
- Expected EU contribution per project: EUR 5 million

OTHER CONDITIONS

- Indicative number of projects expected to be funded: 1
- Eligible costs will take the form of a lump sum

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

Development of tools, solutions, modules to enable R&I on the social aspects of the green transition

Expected Outcomes:

- Enhanced RI capacities to address research challenges and EU policy priorities, in particular the green transition;
- New RI services and data related to the social aspects of the green transition;
- Increased support of RI services for the EU Missions and Partnerships linked to the green transition;
- Harmonised data sets that are accessible and complemented by tools that facilitate the collection, analysis, and visualization of the data;
- Strengthened collaborations between research infrastructures and broader stakeholders, including civil society, in addressing sustainability challenges at multiple scales.

Development of tools, solutions, modules to enable R&I on the social aspects of the green transition

Scope:

- Deliver innovative tools, solutions and modules to enable research infrastructures to support studies & assessment on the social aspects of the green transition.
- May include: energy & transport poverty, green jobs & skills, gender & equality aspects of the green transition, or other aspects of the fair transition towards climate neutrality.
- Proposals should link new modules on the green transition to the data collection of European surveys, integrating and harmonising what already exists at national & EU level.

Development of tools, solutions, modules to enable R&I on the social aspects of the green transition

Scope (cont.):

- Their validation, prototyping and deployment
- The development of a sustainability plan for the new modules.
- The innovative potential for their exploitation for the benefits of the society.
- At least 2 world-class research ESFRI /ERIC, or other world-class research infrastructures that are intergovernmental organisations of European interest (can include a wider set of RIs and other technological partners).

HORIZON-INFRA-2024-TECH-01-03:
New digital twins for Destination Earth

TYPE OF ACTION

- Research and Innovation Action (RIA)

INDICATIVE BUDGET

- EUR 45 million
- Expected EU contribution per project: EUR 15 million

OTHER CONDITIONS

- Royalty free access to IPRs which are needed for further developing, implementing and monitoring the Destination Earth Initiative

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

New digital twins for Destination Earth

Context:

Destination Earth, for which the operational capacity building is funded from the Digital Europe Programme, aims to develop a high precision digital model of the Earth to model, monitor and simulate natural phenomena and related human activities. As part of the build-up of Destination Earth, continuous preparatory scientific and technical developments need to be carried out to ensure integration of new digital twins, covering new areas, into the Destination Earth digital twin framework.

Expected Outcomes:

- Emergence of new science-based digital twin infrastructures to be gradually integrated in Destination Earth;
- Establishment of new digital standards for software (including simulation and simulation-observation data fusion) and data for Destination Earth;
- Standards - and science-based approach for modelling, predicting and assessing the Earth systems and their socio-economic impact.

European Commission

New digital twins for Destination Earth

Scope:

- Development of additional and/or improved, advanced, very high-resolution, complex Earth-system model components representing, for example, atmosphere, ocean, land surface, hydrology, cryosphere and biosphere in the Earth-system simulation framework of Destination Earth;

- Collecting advanced Earth observation data from satellites, established airborne and ground-based observatories as well as novel technologies (for example drones, buoys, IoT sensors) linked for use in the data fusion framework of Destination Earth for simulation and observation;

- Ensure appropriate representation of uncertainty to produce reliable estimates of both monitored and predicted states of the new components;

- Development of scientific components of impact models associated with the new topical components for the management of user specific applications in areas such as renewable energy, food, water and health;

- Development of software and data handling infrastructures that use and enhance the extreme-scale computing and data handling infrastructure of the Digital Twin Engine of Destination Earth; support and enhance both the workflow management established by the existing Digital Twin Engine and its operation through the DestinE Core Service Platform and the data handling established by the existing Digital Twin Engine and its operation through the DestinE Data Lake.

HORIZON-INFRA-2024-TECH-01-04:
AR/VR-empowered digital twins for modelling complex phenomena in new RI application areas

TYPE OF ACTION

- Research and Innovation Action (RIA)

INDICATIVE BUDGET

- EUR 24 million
- Expected EU contribution per project: around EUR 12 million

OTHER CONDITIONS

- Royalty free access to IPRs which are needed for further developing, implementing and monitoring the Destination Earth Initiative

TIMING

- Call opening: 6 December 2023
- Deadline: 12 March 2024

European Commission

AR/VR-empowered digital twins for modelling complex phenomena in new RI application areas

Context:

The aim of this topic is to deliver digital twin solutions which advance the state-of-art of European RIs and show transformative potential in RI operations. The solutions should pave way for new ways to conduct experiments by the RIs through AR/VR (augmented reality/virtual reality) empowered digital twins. Mixed reality (XR) technologies can also be considered. The focus is on newer application areas, such as healthcare, safety and security, to
understand complex real-world systems, particularly in application areas constrained by specific physical limitations.

Expected Outcomes:

- Availability of advanced modelling and prediction capabilities aimed at industrial, scientific or policy end users on fundamental, complex and socio-economically relevant real-life phenomena, including consideration of the possibility to replace, where appropriate, the need for physical experiments and interventions by using digital twins.
- Enhanced competitiveness and improved effectiveness of European RIs;
- Better integration of RIs into local, regional and global innovation and decision support systems.

AR/VR-empowered digital twins for modelling complex phenomena in new RI application areas

Scope:

- Development of digital twin solutions for RIs that take advantage of AR/VR technologies for interactive visualisation and bring together the available relevant data resources in the specific topical area;

- Include technology validation and prototyping activities to cope with a large and representative application area to test the relevance of the solutions with the needs of relevant industrial, scientific or policy end users;

- Prepare for take-up of the developed solutions by clearly identified and involved industrial, scientific or policy end users, and include relevant training for the operation and use of these new solutions.

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4.b Focus sur l'appel 2024-INFRA-TECH-01-01

Amadou Mané,
PCN Infrastructures

EXCELLENCE

Les « + »	Les « - »	Les questions à se poser
• Originalité des services et applications • Co-développement avec entreprises et exemples concrets • Stratégie Open Science explicite	• Maturité technologique imprécise et non justifiée • Cohérence entre durée du projet et développement technologique • Portabilité des technologies et services vers d'autres infrastructures non démontrée.	• Ai-je bien cerné l'état de l'art? • Les objectifs et leurs potentiels d'innovation sont-ils clairement définis? • Suis-je cohérent et crédible quant à l'implication de partenaires industriels?

IMPACTS

Les « + »	Les « - »	Les questions à se poser
• Avancées scientifiques et technologiques bien décrites pour chaque communauté d'utilisateurs. • Triptyque communication, dissémination et exploitation scruté à la loupe. • Prise en compte des impacts environnementaux, économiques et sociétaux.	• Stratégie de propriété intellectuelle évasive. • Lacunes sur formation des infrastructures aux nouveaux services. • Canaux de communication vagues et non personnalisés à chaque cible.	• Suis-je suffisamment précis sur les retombées scientifiques, technologiques ? • Ai-je cerné les enjeux de communication, dissémination et exploitation? • La propriété intellectuelle et mon projet ?

Mise en œuvre : QUALITÉ et EFFICACITÉ

Les « + »	Les « - »	Les questions à se poser
• Structuration du projet pertinente et adaptée aux objectifs et aux impacts (*Work Packages*, tâches, etc.). • Justification du budget et répartition du budget entre partenaires convaincantes. • Complémentarité du consortium en termes de domaines et de type de structures.	• Evaluation des risques et plan de contournement non abordés.	• La structuration de mon projet est-elle cohérente avec les impacts attendus ? • Ai-je bien justifié la contribution de chaque partenaire et le budget alloué ? • Suis-je factuel sur les risques encourus ?

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4.c. INFRA-TECH : Questions Réponses

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5. : Sessions de Questions Réponses, Conclusion

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Informations concernant le programme Infrastructures de recherche Horizon EU :

- Site Infrastructures de recherche sur Horizon-europe.gouv.fr (programme de travail, ressources et documents utiles, actualités…)
https://www.horizon-europe.gouv.fr/infra

- Le *replay* du dernier *Research Infrastructures info day* de la Commission EU
https://research-innovation-community.ec.europa.eu/events/6OkcRoOHWJHInZinyNmvui/programme

- Nous contacter : pcn-infra@recherche.gouv.fr
https://www.horizon-europe.gouv.fr/le-point-de-contact-national-infrastructures-28573

Retrouvez les appels et le calendrier :

- Site Horizon-europe.gouv.fr

https://www.horizon-europe.gouv.fr/les-appels-infrastructures-28576

- Funding and Tender portal de la Commission EU

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search

Trouvez des infrastructures :

- Funding and Tender portal « Partner search »

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/partner-search

- Portal for Research Infrastructure Services CatRIS

https://ctls-org.eu/catris-catalogue-of-research-infrastructure-services/

Pour vous aider, au sein des PCN :

- **Ressources juridiques et financières**

https://www.horizon-europe.gouv.fr/ressources-juridiques-et-financieres-24384

- **FAQ**

https://www.horizon-europe.gouv.fr/faq
FAQ : Grands principes d'Horizon Europe
FAQ : Gérer ma candidature et mon projet

- **Impact et plans de communication, dissémination et exploitation**

Comprendre et maximiser l'impact dans vos projets Horizon Europe
Webinaire de la Commission EU : Dissemination & Exploitation in Horizon Europe (9 June 2021)

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Merci de votre attention!

N'hésitez pas à nous contacter par mail

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