

Preparation of the next accelerator R&D proposal

No more “**Innovation Pilot**” but “**Implementing research infrastructure technology roadmaps**” – but the new call incorporates many aspects and results of I.FAST.
Name still to be defined, for the moment “I.FAST2”



HORIZON-INFRA-2025-01-TECH-02

Implementing research infrastructure technology roadmaps

Expected EU contribution: 10 – 15 MEUR (*funding is still under discussion in Brussels!*)

Total budget for the call: 45 MEUR (between 3 and 4 projects can be supported).

Deadline for submission: **18 September 2025**

For infrastructure and technology communities with already developed research infrastructure technology roadmaps: accelerators, light sources, astronomy, etc.

Projects should implement significant parts of, or entire research infrastructure **technology roadmaps** through co-creation with industrial partners from the earliest possible stage. The technology roadmaps should be the result of a community or cross-community effort already undertaken. The technological solutions developed should respond to the needs of several research infrastructures, and in some cases the needs of different types of research infrastructures.

Timeline

- The EC Research Infrastructure Work Programme is not out yet, expected for February – early March. At that moment, total budget and final requirements will be known.
- The call with all details should be out in May.
- **Deadline** for submission is 18 September 2025: project structured in May-June, writing during summer (no holidays for those involved...).
- There will be **competition**: 4 communities invited to submit, plus some outsiders, for 3 (or 4) projects accepted.

6 requirements, from the call description

All R&D topics included in the portfolio must:

1. implement significant parts of a **research infrastructure technology roadmap** (ESPP, LEAPS, others) or develop new advanced **applications**.
2. address **prototyping** of high-performance systems needed to **upgrade** the involved research infrastructures or **construct** their next generation.
3. Include **co-creation with industrial partners** from the earliest possible stage (as beneficiaries, subcontractors, PCP partners, or with letters of engagement) .
4. respond to the **needs of several research infrastructures**, possibly of different types.
5. possibly **build on results** from previous projects and **avoid overlaps** with ongoing projects.
6. consider **resource efficiency** (e.g. raw material and energy consumption) and **environmental** (including climate-related) **impacts**.

Additional conditions

- include at least **two** research infrastructures (ESFRI infrastructure, or ERIC infrastructure, or International European research organisation).
- **Cascade funding** admitted, support to third parties in the form of grants.
- when appropriate, make use of large-scale platforms combining R&D, integration and validation for technological developments (technology infrastructure).
- Different ways of **involving industry**: consortium members, commitment via engagement letters, identified at a later stage, Pre-Commercial Procurement subcontracting, ...
- Should **build on results** from previous INFRAINNOV projects (I.FAST) or INFRA-TECH projects **but avoid overlap** with them.

Path to the new proposal

I.FAST works well, but is very **dispersed** (48 beneficiaries, 12 partners, 9 Work Packages – average 200 k€/beneficiary). For the next proposal (INFRA-TECH-02), a **more impactful and inclusive approach** is proposed:

1. The topics are divided in two parts: few **top-down** selected topics at higher TRL with larger funding, and the usual **bottom-up** part at lower TRL and lower funding.
2. Involve the **accelerator user communities** and not only the accelerator labs represented in TIARA in the **selection** for the top-down part and in the **evaluation** for the bottom-up part, in coordination with the **roadmaps** of the different communities.



- As usual, TIARA will guide and coordinate the proposal preparation. M. Vretenar in charge of structuring it, waiting to collaborate with a new perspective Coordinator to be nominated by TIARA.
- Initial project structure approved by TIARA on 29.10.24.
- Enlarged TIARA Meeting with accelerator communities (particle physics, light sources, nuclear, neutrons, energy, industry) on 20 January, to coordinate roadmaps and identify priority topics.

General guidelines

- Mixture of **top-down and bottom-up**: explore recognised critical R&D topics with appropriate funding, while keeping the **creativity and innovation** dimension.
- **Less partners** than in I.FAST, avoid beneficiaries with **less than 100k or 50k** EC funding. Ideal team one or 2 academic, one industry.
- **Rate of matching funds** (now 50% for academia, 30% for industry) reduced to 30-35% for academia, 20-25% for industry.
- Less space for **Networks**, possibly only in the frame of defining **Technology Roadmaps** – with some space in the general part.

Structure

Based on the experience of I.FAST and on our discussions with the EC

Project based on **4 pillars (groups of Work Packages)**:



	Pillar	Content	EC contribution per activity	Total EC contribution (with 15M)
1	Instruments	General WP's covering all activities		3 M€ ?
2	Enabling technologies	6 key technologies, selected top-down, higher TRL	1 M€	6 M€ ?
3	Emerging technologies	About 10 selected technologies after bottom-up call, lower TRL	200-500 k€	4 M€ ?
4	Innovation Fund	Internal call after project start	100-200 k€	2 M€ ?
				15 M€

Note 1: if the budget is only 10M, all figures will be reduced proportionally (800k for enabling technologies, 200-400k for emerging)

Note 2: EC contribution given as total cost, including 25% overheads

The Instruments Pillar

4 Work Packages, supporting all other activities

WP	Task	Title	Content
1	1	Management, coordination	
	2	Dissemination	
	3	Risk Management ?	
2	1	Training	
	2	Communication, outreach	CBI, Acc. News, Social media
3	1	Industry	Support to AIPF
	2	Technology transfer	Support start-ups
	3	Societal applications	Medical industrial
4	1	Future accelerators	Exploratory work
	2	Sustainability	Methodologies (LCA)
	3	Roadmap follow-up	Contact with communities.

The Enabling Technologies pillar

4 topics priority A:

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|-------------------------------------------------------|
| 1. Superconducting thin films for RF cavities |
| 2. Additive manufacturing of accelerator components |
| 3. Superconducting magnets at High Temperature (HTS) |
| 4. Surface treatments for Superconducting RF cavities |

7 topics priority B:

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|--------------------------------------------------------------|
| Permanent magnet dipoles and quadrupoles |
| Laser driven accelerators |
| High intensity proton and ion injectors (sources and linacs) |
| High-power targetry, |
| Beam dynamics and stability |
| High precision diagnostics |
| Artificial intelligence/Machine learning |

6 thematic Work Packages

Proposals for these WP's must include production of high-level prototypes (TRL to be clearly specified) with some engagement of industry (as beneficiary, partner, user)

The Emerging Technologies Pillar

Proposals to be submitted based on a **template in preparation**, to be approved by TIARA on 6 March and widely distributed within the accelerator community.

Will be **selected by an Evaluation Committee** nominated by TIARA.

Selection **Criteria** (giving points to the proposal):

1. Scientific and technological excellence, methodology and innovation.
2. Coherence with accelerator roadmap or application.
3. Quality of the prototyping.
4. Involvement of technology infrastructure.
5. Involvement of industry.
6. Covering needs of several research infrastructures.
7. Connection with previous projects (ARIES, I.FAST,...).
8. Reduce resource efficiency and environmental impact.

*Full cost EC contribution (including overheads) 200-500k plus some matching funds from partners.
Minimum 2 participants from different countries.
Industry participation not mandatory but recommended (gets more points in the selection).*

Timeline for the new proposal

Tentative Timeline: Enabling technologies

- **January 2025:** define common roadmap with other accelerator communities, with priority topics and guidelines for internal call.
- **Early February** nominate WP Coordinators for enabling technologies and invite to set up collaborations.
- **March** deadline for presenting WP's to TIARA, first reactions.
- **30 April** content and budget approved by TIARA.
- **May** start writing.

Tentative Timeline: Emerging technologies call.

- **Early March 2025** send letter and submission form to all institutes having participated in previous programmes.
- **15 April** submission deadline, nominate selection committee.
- **30 April** pre-analysis and classification of submissions completed.
- **31 May** selection of projects completed, start writing.

iFAST

THANK YOU FOR YOUR ATTENTION!



*Image credit:
Elwood H. Smith,
The New York
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