M. Vretenar, 2025 I.FAST Meeting

Krakow, 11 April 2023

A new instrument in the last call of Horizon Europe

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"

The next flagship of our accelerator R&D projects!

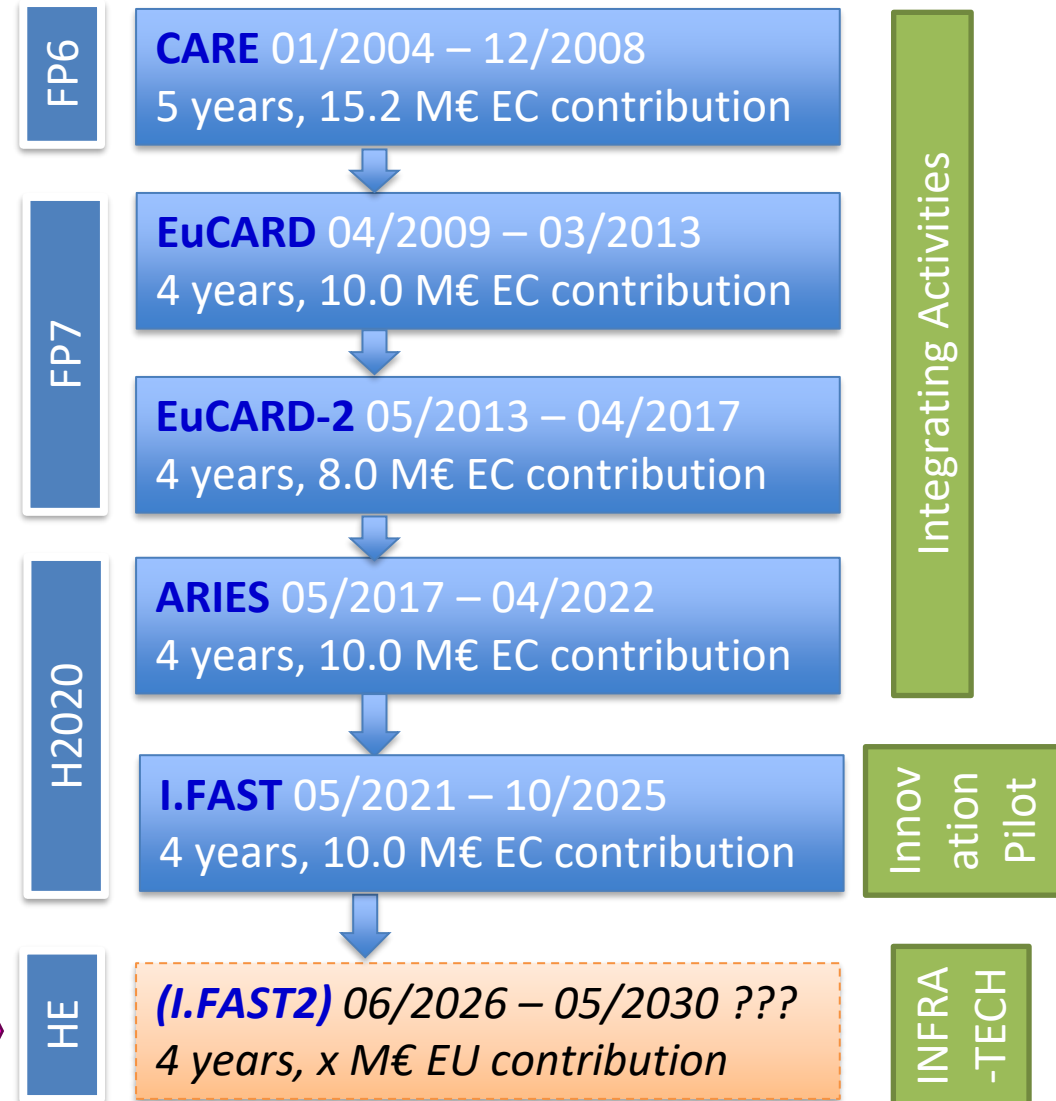iFAST

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21 years already - now heading for the 2030's

Research Infrastructure programmes have evolved:

- From support to communities to support to innovation.

- From support to innovation to support of technology clusters based on a technology roadmap.

Along these projects, we keep our focus on cross-boundary technology subjects, not directly followed by large laboratories, with added value from collaboration and sharing of resources, to which has been now added the co-innovation with industry.
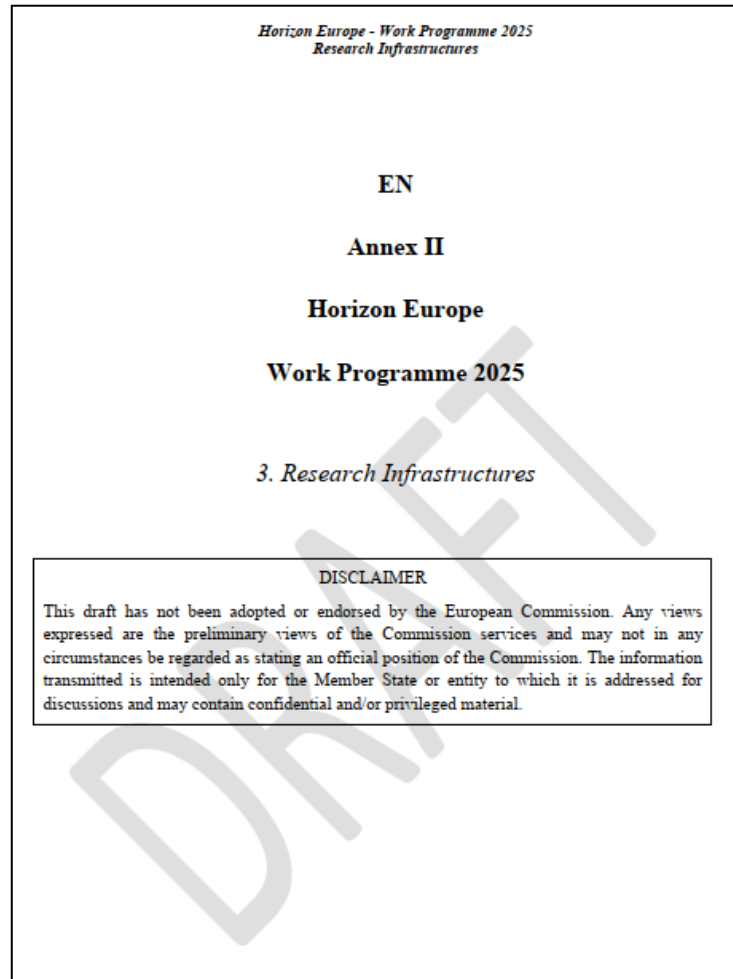
Preparing for FP10 that might be very different from what we have seen so far.

FP6

CARE 01/2004 – 12/2008
5 years, 15.2 M€ EC contribution

FP7

EuCARD 04/2009 – 03/2013
4 years, 10.0 M€ EC contribution

EuCARD-2 05/2013 – 04/2017
4 years, 8.0 M€ EC contribution

H2020

ARIES 05/2017 – 04/2022
4 years, 10.0 M€ EC contribution

I.FAST 05/2021 – 10/2025
4 years, 10.0 M€ EC contribution

HE

(I.FAST2) 06/2026 – 05/2030 ???
4 years, x M€ EU contribution

Integrating Activities

Innovation Pilot

INFRA-TECH

3

FP10

- Position of ESFRI chair on Research Infrastructures: should not be limited to Pillar 1 (excellent science) as they are now, should have a transversal impact on environment, climate, security, etc.

- The Commission is considering a scheme of FP10 combining several funds (ERC, EIC) into a mega-fund for competitiveness.

- EU ministers and EU Council have expressed their position in favour of a stand-alone FP10 programme like now (March 2025).

- Even though UK and CH are back into the Horizon programme, the budget for FP10 is expected to decrease in comparison to previous FP's – because of other EU priorities.

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The 2025 RI Work Programme

Horizon Europe - Work Programme 2025
Research Infrastructures

EN

Annex II

Horizon Europe

Work Programme 2025

3. Research Infrastructures

DISCLAIMER

This draft has not been adopted or endorsed by the European Commission. Any views expressed are the preliminary views of the Commission services and may not in any circumstances be regarded as stating an official position of the Commission. The information transmitted is intended only for the Member State or entity to which it is addressed for discussions and may contain confidential and/or privileged material.

- Draft completed in October 2024, expected to be published in November 2024, is not yet out. Negotiations required for the budgets.

- The draft has been circulating for months (and is even available on some national contact web sites) but it is not official yet.

- Recent news are that the Work Programme is now finalised and being approved by the Committee – should be published in April (or rumors for early May).

- We are preparing a proposal based on specifications that are not final.

The HORIZON-INFRA-2025-01-TECH-02 call

Implementing research infrastructure technology roadmaps

Expected EU contribution: **10 M€ - was originally 15 M€**

Total budget for the call: 45 MEUR (to be confirmed): 4.5 projects can be funded.

Deadline for submission: **18 September 2025** (to be confirmed).

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.

Project must include at least 2 Research Infrastructures (ESFRI, ERIC, or International European org.).

Requirements, from draft 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.

TIARA guidelines for the proposal

Different from previous projects, the new project should have:

➢ A mixture of top-down and bottom-up topics: explore recognised critical R&D topics with appropriate funding, while keeping the creativity and innovation dimension of a bottom-up call to the community.

➢ Less partners than in I.FAST, avoid beneficiaries with less that 100k EC funding. Ideal team one or 2 academic, one industry (limit is 50k for industry).

➢ Rate of matching funds (now 50% for academia, 30% for industry) reduced to **1/3 (33%)** for research institutions, **20%** for industry.

➢ Less space for Networks, possibly only in the frame of defining Technology Roadmaps – and more space to prototyping with industry.

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Structure of the proposal

From I.FAST experience and discussions with EC,
Project based on **4 pillars (groups of Work Packages**):

	Pillar	Content	EC contribution per activity (guideline)
1	**Instruments**	General WP's covering all activities	
2	**Enabling technologies**	6 key technologies, selected top-down, higher TRL	0.5-1 M€
3	**Emerging technologies**	About 10 selected technologies after bottom-up call, lower TRL	200-400 k€
4	**Innovation Fund**	Internal call after project start	100-200 k€

Note: EC contribution as **total cost, including the 25% overheads**

Total budget repartition

	Pillar	Maximum: 15M		Minimum: 10M	Number of activities
1	Instruments	2.5 M€		2.0 M€	
2	Enabling technologies	6.0 M€		5.0 M€	5 - 6
3	Emerging technologies	4.0 M€		2.5-3.0 M€	10 – 12
4	Innovation Fund	2.5 M€		0-0.5 M€	0 - 10
	Totals	15 M€		10 M€	

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Teaming for proposal preparation

TIARA is taking ownership for proposal preparation. The TIARA Assembly selects topics for top-down, approves procedure for bottom-up selection, nominates conveners for the WP's.

❏ A TIARA "**executive committee**" takes care of defining the detailed structure of the proposal: negotiations for the top-down part, definition of the "instrument" pillar: J.M. Perez, A. Lucotte, M. Vretenar, T. Torims.

❏ An **Evaluation Committee** nominated by TIARA (one representative per TIARA member) will select the proposals for emerging technologies.

❏ A local **Project Team at CERN** will oversee the financial preparation and support the assembly of the proposal document.

❏ A "Reading Committee" (TIARA + experts) will read and comment on the final document.

Status of preparation

- TIARA meeting on January 10th enlarged to the accelerator user communities (with and without roadmaps) has identified topics for enabling technologies. Selected 7 "enabling technologies", conveners identified, preliminary proposals submitted, under scrutiny.

- Documentation and web site for "emerging technologies" call prepared, **call for proposals for emerging technologies opened on 18 March, with deadline for submission of proposals 30 April.**

- An evaluation committee set up by TIARA will select the activities during the month of May (one member per TIARA participant + 2 from industry). The results of the selection will be **announced at early June**. All information available on https://ifast-project.eu/proposal-infra-tech-02

- Revised submissions for Enabling Technologies requested for 31 March, will be analysed in April, decisions expected in May.

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Present structure of the proposal

1. Coordination

- CERN will continue ensuring the coordination of the project (with some changes expected in the CERN EU office).

- Toms Torims has been recruited by CERN on April 1st and charged by TIARA with the role of co-convener of the proposal, together with MV.

- Toms is expected to coordinate the project if it is approved by the EC.

2. Enabling Technologies Pillar

WP		Convener	Institute	Country	Status
1	SC thin films for RF cavities	O. Malyshev / C. Antoine	UKRI/CEA	UK/FR	Submitted 5.03
2	HTS magnets	E. De Matteis	INFN	IT	Submitted 31.03, in discussion
3	Additive manufacturing	T. Torims / A. Ratkus	RTU	LV	Preliminary submitted 4.03
4	SCRF Surface treatments	D. Longuevergne	CNRS	FR	Submitted 7.04
5	Permanent magnets for accelerators	R. Geometrante	KYMA	IT/ind.	Preliminary submitted 5.03
6	Laser driven acceleration	A. Maier	DESY	D	Preliminary 4.03, no more news
7	High brightness electron injectors		PSI	CH	Under discussion

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Maximum budget for the pillar: 5.5 M€, meaning 0.5-1.0 M€ /WP

3. Instruments Pillar

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

4 Work Packages, supporting all other activities

4. Emerging technologies pillar

- Submission form available on the web site.
- a 10-page document with all information needed by the Evaluation Committee

TIARA

Implementing the Research Infrastructure Technology Roadmap for Particle Accelerators

Proposal Form for contributions to the **Emerging Technologies** pillar of the 2025 INFRA-TECH-02 accelerator proposal

Short title of proposed action:

Name and Affiliation of convener:

E-mail of convener:

Requested EC contribution (full cost to be charged to EC including overheads but excluding matching funds from partners, in k€):

Please send your proposal to accelerator.infratech02@cern.ch before 12 pm on April 30, 2025

| 1 | INFRA-TECH-02 Proposal Form |

Evaluation criteria for emerging technologies

	Criterion	Points
1	Scientific and technological excellence, innovation content	10
2	Coherence with the roadmaps of accelerator communities and continuity with previous EC projects	5
3	Impact on Research Infrastructures, their users and/or society	5
4	Methodology and planning	5
5	Transnationality and integration of partners	5
6	Capacity to attract additional matching funds	5
7	Correspondence between cost and objectives	5
8	Extent and quality of industry involvement	5
9	Improve use of resources and reduce environmental impact	5
	TOTAL	50

In preparation an **evaluation guide** to explain the criteria and to help obtaining harmonized scores.

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Guidelines - financial

EC contribution for emerging technologies between 200k and 400k, may go up to 500k in justified exceptional cases.

For all proposals:
- ➤ **Minimum EC contribution per partner 100 k€** (can be cumulated over different activities), 50 k€ for industry.
- ➤ **Minimum matching funds: 50% of the EC contribution for research partners, 25% for industrial partners**. These limits correspond to a minimum co-funding rate (ratio between matching funds and total cost of the activity) of 33% for research and 20% for industry.

The Figure below explains how the budget for a proposal must be structured, for an activity requesting an **EC contribution of 250 k€** with only research partners receiving EC funding.

200 k€	50 k€	125 k€	xxx k€
Eligible costs for the action, to be claimed to the EC and justified (personnel, travel, non-durable equipment)	25% overhead claimed to the EC but not justified (for many partners, this amount is taken by the central administration)	Minimum level of matching funds provided by the partners for research institutions (=50% of total EC contribution, or 33% of total cost for the partner). For industry partners, minimum level is 25% of total EC contribution, or 20% of total cost for the partner.	Additional optional matching funds. A higher level of matching funds will lead to a higher score for the proposal.

Total EC contribution = 250 k€

Total cost of the activity ≥ 375 k€

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Timeline for the new proposal

Timeline: Enabling technologies
- **January 2025:** define common roadmap with other accelerator communities, with priority topics and guidelines for internal call.
- **Early February** nominate Conveners 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.

Timeline: Emerging technologies call.

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

➢ First draft of proposal ready by end of June
➢ Revised draft and budget frozen end of July
➢ Complete proposal for final revision end of August

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Thank you for your attention!