M. Vretenar, Project Coordinator

Welcome to the 5th and final I.FAST meeting

Goals:

- Review **results and impact** in preparation for the Final Report
- Agree on timing and procedure for **Final Report**
- **Celebrate** the end of the project with some last social events.

A special meeting:

- Shorter: Tuesday 14:00 - Wednesday 16:00
- Presentations by WP and Task leaders for active Tasks only, centered on **latest results** and **impact**
- No highlights, no sessions, no parallel meetings.
- An outlook into the future: ESPP and CERN programmes, future EU projects.

We will as usual profit of the presence of our SAC that will help in assessing the overall impact of the project for the Final Report

A rich programme

14:00	**Welcome Adress**	*Mike Lamont*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	14:00 - 14:10	
	Introduction by the Project Coordinator	*Maurizio Vretenar*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	14:10 - 14:25	
	Deliverables and Milestones status	*Luigi Giuseppe Celona*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	14:25 - 14:35	
	Training initiatives: outcome and perspectives, impact on Accelerator Communication and Outreach		
	Philip Nicholas Burrows		
15:00	**Industry Collaboration: the I.FAST legacy**	*Mauro Morandin*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	14:55 - 15:15	
	Novel particle accelerators - progress in the last 4 years	*Dr Riccardo Pompili*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	15:15 - 15:30	
	Lasers for Plasma Accelerators - outcomes and results	*Dr Leonida Antonio (Leo) Gizzi*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	15:30 - 15:45	
	Coffee Break		
16:00	*80/1-001 - Globe of Science and Innovation - 1st Floor, CERN*	15:45 - 16:15	
	Progress of the International Muon Collider Collaboration	*Nadia Pastrone*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	16:15 - 16:30	
	Progress at the Accelerator frontier (ZOOM)	*Giuliano Franchetti et al.*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	16:30 - 16:45	
	The I.FAST superconduting magnet prototypes	*Ernesto De Matteis*	
17:00	*80/1-001 - Globe of Science and Innovation - 1st Floor, CERN*	16:45 - 17:05	
	Superconducting thin films: impact and legacy of I.FAST	*Dr Oleg Malyshev*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	17:05 - 17:25	
	Additive manufacturing in the accelerator community: where are we	*Andris Ratkus*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	17:25 - 17:45	
	Progress on sustainability	*Denise Voelker*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	17:45 - 18:00	
18:00			

19:30
IFAST Dinner
at Café Papon
Rue H. Fazy 1
Genève
Take tram 18 to Bel-Air then go up to the Old Town on Grande Rue

09:00	**European Strategy: large collider proposals**	*Philip Nicholas Burrows*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	09:00 - 09:30	
	Outlook of the Innovation Fund projects	*Dr Luca Garolfi*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	09:30 - 09:50	
	Final Results of the Longitudinally Variable Dipole	*Fernando Toral*	
10:00	*80/1-001 - Globe of Science and Innovation - 1st Floor, CERN*	09:50 - 10:10	
	The Additive manufactured RFQ prototype: results and perspectives	*Tobia Romano*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	10:10 - 10:30	
	Coffee Break		
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	10:30 - 11:00	
11:00	**Results and experience with the CompactLight Prototype structures**	*Gerardo D'Auria*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	11:00 - 11:20	
	The CBI legacy	*Dr Nicolas Delerue*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	11:20 - 11:30	
	The HEPTO prototype: final results and outlook	*Mr Ben Shepherd*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	11:30 - 11:50	
	Ongoing upgrades and outlook on ultra-low emittance rings	*Riccardo Bartolini*	
12:00	*80/1-001 - Globe of Science and Innovation - 1st Floor, CERN*	11:50 - 12:10	
	The I.FAST progress in beam windows and materials	*Federico Carra et al.*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	12:10 - 12:30	
	Lunch Break		
13:00	*80/1-001 - Globe of Science and Innovation - 1st Floor, CERN*	12:30 - 14:00	
14:00	**CERN Programmes**		
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	14:00 - 14:30	
	The EPITA proposal, a new instrument for the accelerator community	*Dr Toms Torims*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	14:30 - 14:50	
	TIARA and future EC Calls for accelerators	*Jose Manuel Perez-Morales et al.*	
15:00	*80/1-001 - Globe of Science and Innovation - 1st Floor, CERN*	14:50 - 15:10	
	I.FAST Financial outlook	*Cloe Levointurier-Vajda*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	15:10 - 15:25	
	Presentation by the SAC: impact of I.FAST on accelerator technologies		
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	15:25 - 15:45	
	Concluding remarks	*Maurizio Vretenar*	
	80/1-001 - Globe of Science and Innovation - 1st Floor, CERN	15:45 - 16:00	
16:00			

19:30
No-host fondue dinner at Restaurant Edelweiss, close to train station.
T. Torims will assist.

I.FAST: coming to the end of a long journey

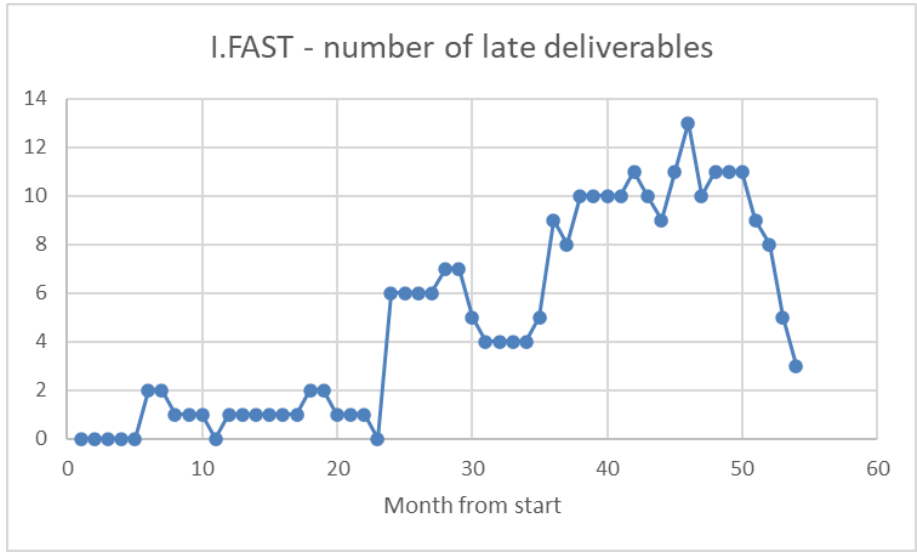
- After 4.5 years, I.FAST terminates officially on **31 October 2025**. Deadline for submitting **3rd and final technical report** and financial reporting is 31 December 2025.
- **Final Review** online scheduled for **21 January 2026** (presentations by Task Leaders, with Project Officer S. Kakarantzas and Reviewer Prof. Zeyrek.
- Last meeting of **Governing Board** in **March 2026**, to take note of Financial Reports and outcome of Review, and decide possible budget redistribution.
- If Final Periodic Report approved (scientifically and financially) by EC, last **payment** could take place in **late spring 2026**.

I.FAST kick-off, May 2021

From sailing (May 2021) to safe mooring (October 2025)

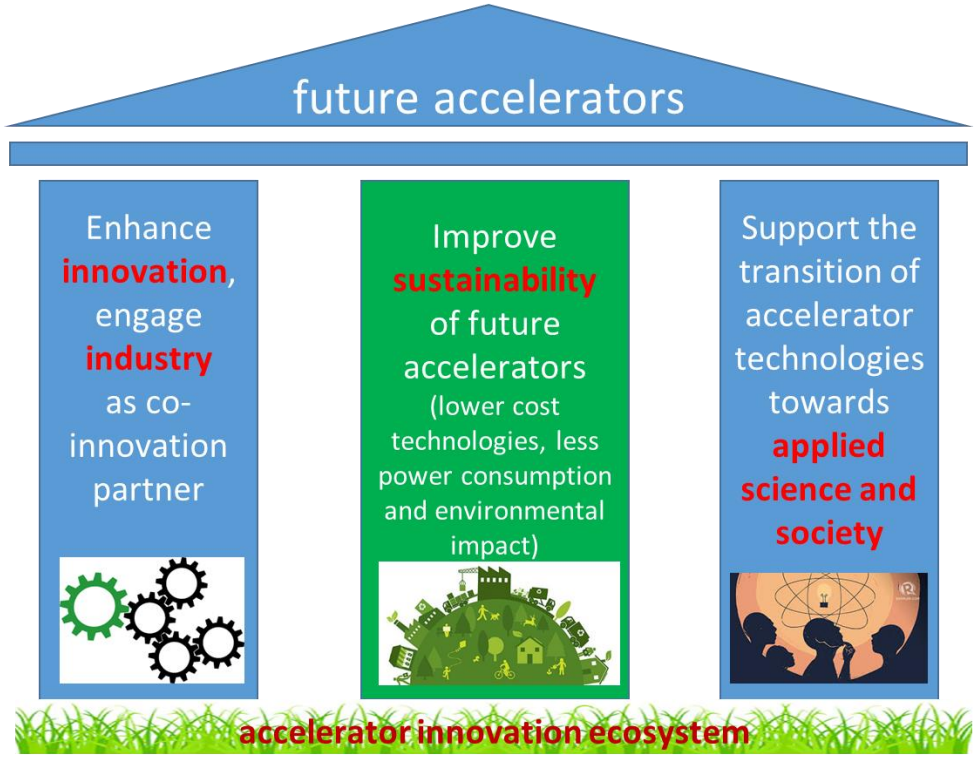
Not really a peaceful journey…

- Proposal prepared at end 2019 and submitted in March-May 2020 (fully in the Covid crisis!).
- Evaluation received 30.10.2020, 14/15.
- Grant Agreement signed 05.03.2021, project started on 01.05.2021.
- Kick-off online, Annual Meetings CERN (2022), Trieste (2023), Paris (2024), Krakow (2025).
- Meetings slowed down by 2nd year of Covid.
- Material and prices crisis in 2021/22, two industrial partners withdrawing from project.
- War in Ukraine, stop to some collaborations (BY).
- Delays and technical problems showing up, reaching a maximum of 13 late Deliverables in M46 (February 2025) – out of 53, 25%.
- Extension by 6 months granted in Dec. 2024.



Luigi will report on the present status of milestones and deliverables

Did we achieve our objectives?



Goals of I.FAST:

- As an Innovation Pilot, move to **open innovation**: associate industry to innovation, engage industry as co-innovation partner.
- Structure and enlarge the accelerator **innovation ecosystem**, thanks to 17 industrial partners (35% of total) and 37% new partners w.r.t. previous projects. Integrate technology infrastructure.
- Develop technologies to **improve sustainability** of future accelerators.
- Favour transition of accelerator technologies to **applied science** and **society**.

YES !

Some highlights along the main priorities

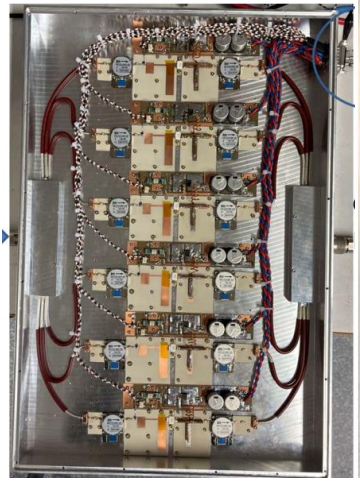
- 13 innovative prototypes realised with industry (some still ongoing - details in next presentation) - so far, all respecting specifications. Innovation Fund very successful.
- Important industry engagement, setting up of the Accelerator Industry Permanent Forum, final success of the industry exchange programme (5 exchanges, last 2 ongoing).
- Sustainability becoming key component of all our R&D activities.
- Outreach via 4 successful CBI events. Impact on society with accelerators for environment.

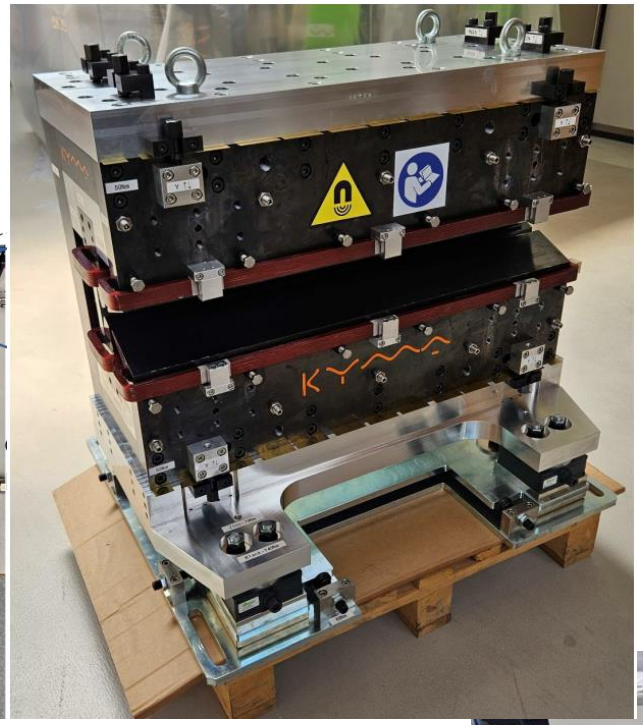
The 13 I.FAST high-level prototypes

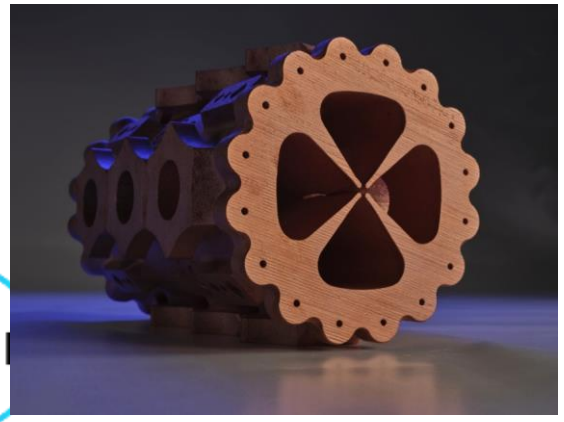
N.	WP	Prototype	Status
1	7	Longitudinally variable dipole	D7.3 – *missing accept.*
2	7	Two high-gradient C-band RF guns	D7.4 - *completed*
3	7	CompactLight structure prototype 1	D7.5 – *missing meas.*
4	7	CompactLight structure prototype 2	D7.6 – *missing meas.*
5	8	Combined CCT magnet demonstrator	D8.4 – *completed?*
6	8	HTS CCT magnet demonstrator	D8.5 – *missing meas.*
7	9	Coated cavity	D9.3 – *completed*
8	9	Multilayer coated cavities	D9.4 - *completed*
9	10	RFQ prototype	*completed*
10	11	Klystron prototype	D11.2 - *completed*
11	11	Adjustable PM quadrupole	D11.3 - *completed*
12	12	Internal RF source for cyclotrons	D12.3 – *completed*
13	13	GaN amplifier module	D13.3 - *completed*

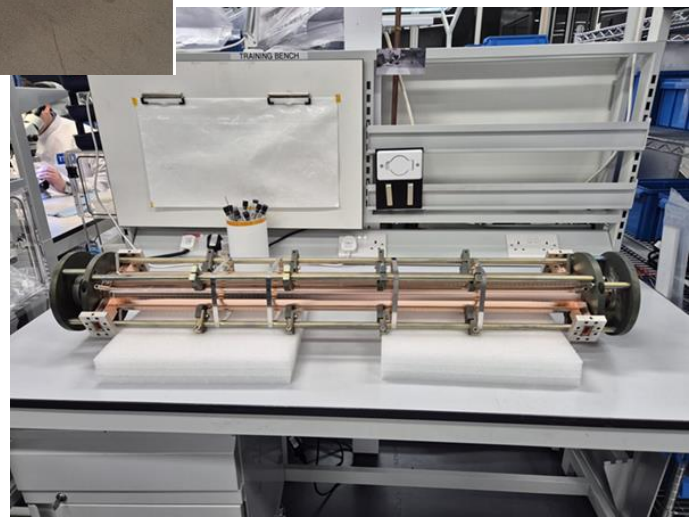
iFAST

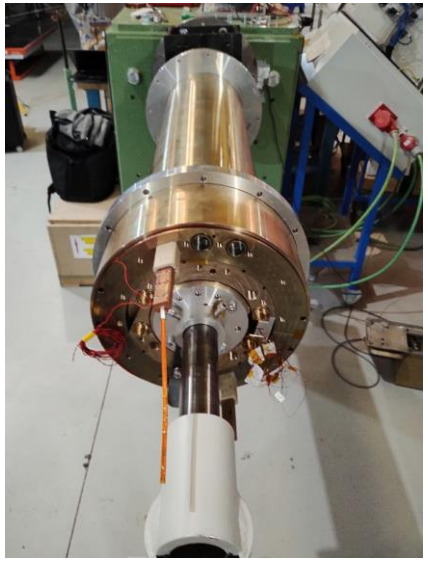
I.FAST prototypes in pictures











Last effort: Periodic Report 3

- Covers the 3rd **18-month period** (May 2024 – October 2025)
- Must be submitted 2 months after end of period (**31 December 2025**)

- ❑ **Task Leaders** for active Tasks have received at end September a template to be filled in with a description of activities (May 2024 - October 2025): summary, objectives, description of work, meetings, milestones, deliverables, publications, ~**2 pages per Task.**
- ❑ **20 October 2025** was the deadline for **sending the contributions to Valérie**, who assembles the WP Sections and sends them to WP Coordinators for validation at end October.
- ❑ **15 November 2025**: deadline for WP Coordinators to send WP chapters to Valérie.
- ❑ **30 November**: complete document sent to WP Coordinators for approval.
- ❑ **15 December**: Report ready for submission.

Periodic Report 3: status of contributions

Deadline for submission was 20 October (yesterday).

Many thanks to all those who have submitted their contribution on time – we will start working on them immediately after this Meeting.

Still to be received: N. Delerue, T. Ekelof, M. Morandin (?), L. Garolfi, F. Zimmermann/G. Franchetti, L. Gizzi (?), R. Bartolini, Y. Papaphilippou, E. De Matteis/J. Munilla Lopez, G. Dauria, M. Vedani (?).

Reminder: even if your Task was not active in Period 3, if you are claiming expenditures in this period you must contribute to the Periodic Report – to show how you used the budget.

We did not ask for contributions to Tasks there were completed – but if you still had some activities, please contact us!

SAC Observations and recommended actions

SAC Message	Action
Expand communication output (publication quotas, communication liaisons in WPs, communication trainings for WPs). Secure CBI sustainability (alumni, spin-off funding). Broaden communication audiences. (schools, policy makers).	Lack of time and resources to implement in last 6 months of I.FAST. Message passed to EPITA that plans to hire a full-time person for communication and outreach.
Provide new concepts legacy catalogue (summary, maturity, use, next steps).	Resources were limited to Workshops, but message transferred to T5.2.
Continue in next project high-field HTS magnets, SC RF with A15 (Nb3SN and other), AM technology, advanced acceleration technologies, …	Message taken, see presentation on EPITA proposal.
Publish sustainability assessment approach as a reusable I.FAST framework, promoted across RIs.	Will be part of EPITA
For major hardware outcomes, provide TRL status update, intended use case, estimated maturity. Cross-WP “lessons learned” report on best practices.	Message passed to speakers for this meeting, lessons learned will be compiled.
At final meeting, showcase project outcomes (demos, roadmaps, partner matchmaking).	Message passed.
Consistent use of terminology and metrics.	To be implemented (via TIARA?)
Knowledge valorisation, start-up support in I.FAST2	See EPITA presentation

A final thank you

I.FAST has been an amazing project. It was our first one focused on innovation, and even through tough times, it really delivered. It's going to be a great example for future accelerator projects. And of course, none of this would've been possible without a fantastic team—huge thanks to all of you for your hard work, your support, and the great team spirit throughout this adventure!

Special thanks to:

- Valérie
- The CERN Project Team
- My 2 Deputies
- All WP and Task Leaders
- Our Scientific Advisory Committee
- All the I.FAST participants!

This project has been proud of received funding from the European Union's Horizon 2020 Research and Innovation programme under GA No 101004730.