



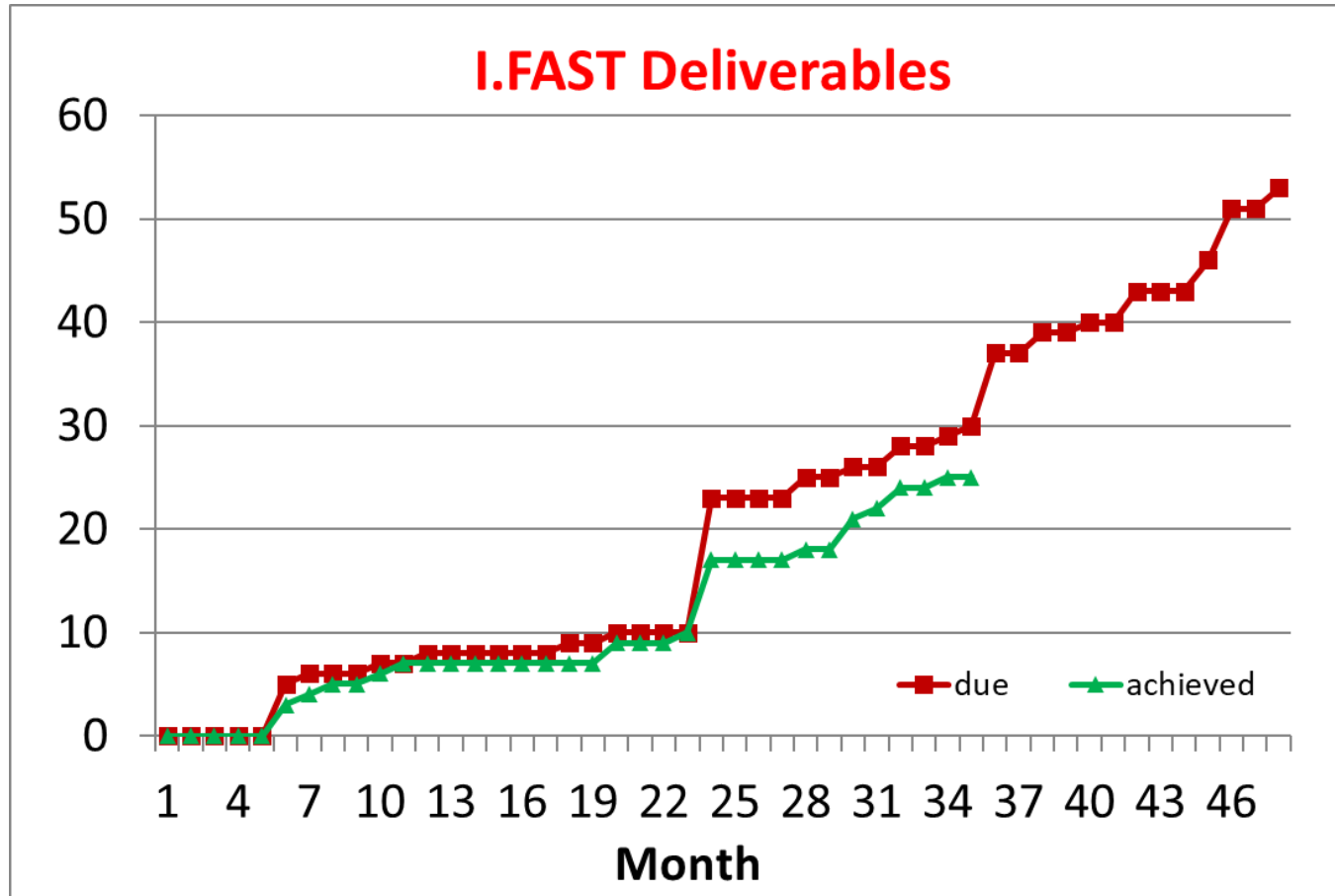
M. Vretenar, 2024 I.FAST Governing Board Meeting

Paris, 19 April 2023

# Status of the project

- ✓ Nearly completed the **3<sup>rd</sup> Year of activity** (April 2024) – only one more year to go.
- ✓ Initial delays and organisational problems due to the **material and energy crisis** solved.
- ✓ Several **additional delays** are appearing in the technical Work Packages, related to manufacturing issues, late delivery of components, movements of personnel. In addition, some Deliverables were originally declared following a wrong schedule. The consequence is a request for **changing delivery dates of 8 Deliverables** that has to be submitted to the Project Officer.
- ✓ This happens at the critical moment of preparation of the **2<sup>nd</sup> Periodic Report** (covering 18 months, from October 2022 to April 2024) to be submitted by end of June, combining technical information from WP and Task Leaders with financial information from the beneficiaries.
- ✓ The **Review for Period 2** will take place online on **July 15<sup>th</sup>**, with the Project Officer Sotirios Kakarantzas and the external reviewer Mehmet Zeyrek (Ankara University), who has already reviewed the 1st periodic Report. Task Leader and WP Coordinators should attend.

# Status of Deliverables



## STATUS OF DELIVERABLES DUE IN PERIOD 2 (up to M36)

### 1 Deliverables is very late

D7.5 Construction of XLS pre-prototype **M32** (G. Dauria)

### 6 Deliverables are due at M36 (end April) and should have been received at end March – only 2 will (hopefully) come

D2.3 Industrial training scheme (L. Garolfi) – delay to M48?

D11.3 Prototype adjustable PM quadrupole (B. Shepherd) – delay M44

D3.2 Business development case (S. Djamschid) – in prep.

D6.4 Improvement of laser intensity stability (F. Mathieu) ok

D10.4 First PSD data from NEG Coating (O. Malyshev) request delay to M44

D11.2 Klystron prototype completed and validated (N. Catalan)

### 1 Deliverable was delayed with PO agreement

D4.3 Beam windows prototype (to M38)

### 4 Deliverables announced as late, still to be agreed by PO

D10.5 Machine learning at ESS (M46)

D9.1 Thin-Film SRF roadmap (M45)

D7.6 Construction of XLS full prototype (M48)

D9.3 First 6 GHz cavity coated (M46)

# Main delays identified

- Problems with the CompactLight accelerating modules: loss of a critical collaborator, then brazing issues on the couplers. A solution is being implemented (repair + new parts), but there is no guarantee of success.
- Problems with longitudinally variable dipole for synchrotron light: design not yet finished, striving to complete prototype before end of I.FAST.
- Problems with the high-efficiency klystron: low quality of outsourced components, need to repair in-house. Should be completed in 2024.
- Concerns about the SC magnet demonstrators that will be completed only at end 2024 and be tested (UU and INFN) in 2025, just before I.FAST end.
- Deliverables and Milestones for WP9 were declared starting from a wrong M1 – should be only an administrative issue. But WP9 will have 6 Deliverable Reports in 4 months during 2025: a concern!

# Letter to the Project Officer

8 Deliverables to be delayed (in addition to 1 already delayed):



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Dr. Sotirios KAKARANTZAS  
European Research Executive  
Agency (REA)  
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Geneva, 8 May 2023

Dear Sotirios,

In the preparation for the Period 2 reporting, we have reviewed the outstanding Deliverables of the IFAST Project and we have remarked that some Deliverables are experiencing delays for different reasons and will not be ready on time for the Reporting.

For these Deliverables, we ask you to accept new delivery dates accordingly to the list below:

**1. D2.3 Industrial training scheme (L. Garolfi) due at M36 should be delayed to M48.**

The Industrial Training scheme has been supporting so far 4 exchange projects without using all budget that has a margin to support two additional exchanges. It is proposed to continue the exchange programme during the last reporting period, delaying the deliverable report to the end of IFAST.

**2. D11.3 Prototype adjustable PM quadrupole, from M36 to M44.**

The magnetic design of the quadrupole had to be revised since the increase in cost of materials was mitigated by using materials and components recuperated from other projects. The redesign required time and was slowed down by the need to find adequate personnel resources at the industrial partner. This has been resolved now, and a time plan for construction and testing in 2024 has been defined.

**3. D10.4 First PSD data from NEG Coating, from M36 to M44.**

An additional study and tests were required to coat with the required quality a tube with small diameter. The problems have been solved and two samples have been successfully coated and sent to synchrotron facilities for testing where they are waiting for a long shutdown period to be installed. Shutdowns are foreseen in summer 2024 and results will be available a few months later.

**4. D11.2 Klystron prototype completed and validated, from M36 to M44**

The industrial partner has faced difficulties with the procurement of single pieces from suppliers, and an unfortunate transport incident damaged two more copper pieces (original and spare) that needed to be re-done. All pieces are now available, production of klystron is now close to completion, but the delays could not be fully recovered.

**5. D10.5 Machine learning at ESS, from M34 to M46**

The 2022 rebaselining of the ESS project has shifted the schedule of the commissioning campaigns that deliver critical data sets for the Machine Learning (ML) Task of IFAST. The delay will allow to incorporate additional accurate commissioning data into the assessment of ML models, thus increasing the quality of the final report.

**6. D7.5 Construction of XLS pre-prototype M32, from M32 to M42**

The brazing of two RF couplers of the pre-prototype accelerator structure failed because of problems with the furnace used for the brazing leading to brazing defects. After analysing the problem, was decided to recover the couplers with new brazing cycles, changing the furnace. If the couplers cannot be recovered, a partner is already building the parts for two new couplers. A new brazing is expected in summer and the submission of D7.5 could take place in M42.

**7. D9.1 Thin film SRF roadmap report, from M35 to M45.**

**8. D9.3 First 6 GHz cavity coated and characterized, from M36 to M46.**

The numbering in months from start (M...) indicated in the DoW for these Deliverables was by mistake indicated as 12 months before the expected delivery date. The corresponding Tasks will be completed at the end of the Project, and the Deliverables provided at this moment.

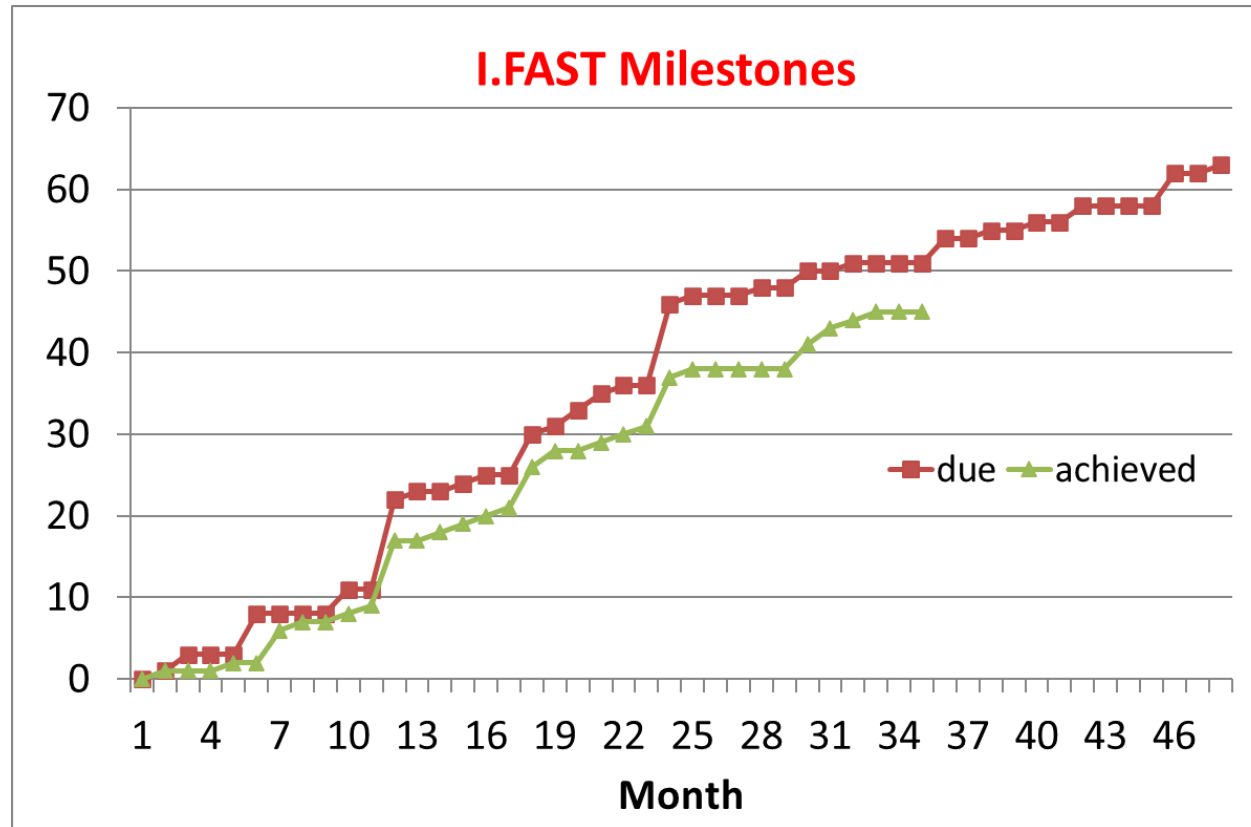
I thank you for your consideration.

Yours sincerely,

Maurizio VRETENAR  
IFAST Project Coordinator



# Status of Milestones



## 7 Milestones late

- MS5 (ACO Workshop), for March.
  - MS30 (CompactLight) delayed to M48.
  - MS52 (Workshop efficient magnets): delayed to M34.
  - MS26 (optics for ELETTRA): coming since months...
  - MS56 delayed to M38
  - MS37 (thin film Workshop), delayed to M42.
  - MS34 (curved CCT formers): no news.
- + 1 Milestone in advance (MS54)

# Positive highlights

- Remarkable progress with all the **large-scale prototypes** of I.FAST. Some are late, but all have advanced considerably in the last year.
- The **3<sup>rd</sup> CBI event on Accelerators for Health** is being organised thanks to an important contribution from institutional sponsors (I.FAST can cover only part of budget).
- Testing of the Additive Manufactured RFQ is progressing, and **additional prototypes** are being fabricated thanks to industrial support.
- The **AMICI WP13** has completed its activities with two detailed reports.
- GaN amplifier modules have worked at **kW level**.
- New applications are being explored, with a strong support from industry.  
**Additive Manufacturing.**
- **Industrial participation remains outstanding**: report on R&D contributions and dedicated session at Paris, successful industry workshop on cryogenics, creation of permanent **Accelerator-Industry Forum**.

# Periodic Report 2 – technical part

- Covers the second **18-month period** (October 2022 – April 2024)
- Must be submitted 2 months after end of period (**30 June 2024**)

- Task Leaders** have received a template to be filled in with a **description of activities (October 2022 - April 2024)**: summary, objectives, description of work, meetings, milestones, deliverables, publications, justifications for delays or late Deliverables and Milestones. **2/3 pages per Task.**
- End of April 2024**: deadline for sending the contributions to Valérie, who assembles the WP Sections and sends them to WP Coordinators for validation.
- 15 May 2024**: deadline for WP Coordinators to send WP chapters to Valérie.
- End of May**: complete document sent to WP Coordinators for approval.
- 15 June**: Report ready for submission.



# Thank you for your attention



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