

WP3: Industry engagement

I.FAST WP3 "Industry engagement"

- The primary mission of Work Package 3 in I.FAST is to increase the **Industry involvement** in R&D and technical development activities, maximizing mutual benefits.
 - WP3.1: [lead by Mauro Morandin (INFN)]: Explore and leverage the **potential and original contributions of industry** in I.FAST, particularly SMEs
 - WP3.2 [lead by Djamschid Safi (DESY)] : Stimulate the **development of the Knowledge Transfer potential** in I.FAST activities and promote its exploitation
 - WP3.3 [lead by Jose M. Perez (CIEMAT)] : **Extend the involvement** of industry, favoring early engagement in R&D activities
- All WP3 partners **have actively participated** in planning and monitoring the activities
- Specific contributions:
 - WP3.1 activities: INFN
 - WP3.2 activities: DESY, CERN, UKRI
 - WP3.3 activities: CIEMAT, INEUSTAR, CDTI, CEA, CERN

WP3 Deliverables and Milestones

Milestone n°	Milestone name	Related work package(s)	Due date (M)	Means of verification
MS8	Industry Advisory Board launch	3.1	6	Kick-off meeting report
MS9	I.FAST KT Report ready	3.2	10	Report
MS10	Collection of feedback from SMEs and RIs participating in IFAST	3.3	20	Report

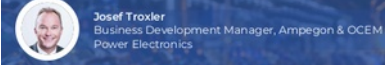
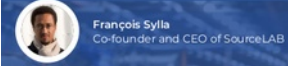
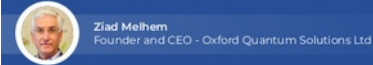
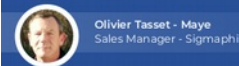
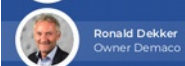
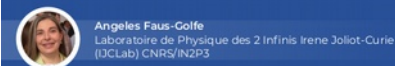
Achieved

Deliverables related to WP3	
D3.1: Industry Workshop Report <i>Report to document the outcome of the workshop</i>	M26
D3.2: Business development case report <i>Description of the activities carried out and of the results obtained</i>	M36
D3.3: Report on extended industrial contributions in R&D activities <i>Guidelines to improve the participation of private companies in R&D activities</i>	M36

WP3.1

- Setting up and organizing the activity of the I.FAST **Industry Advisory Board** (IAB)
- Supporting the companies participating in I.FAST:
 - make available a set of web page for illustrating to companies:
 - **participating in I.FAST**: how to exploit at best their participation
 - **not yet in I.FAST**: how they can get involved in I.FAST Activities
 - e.g. publicize I.FAST meetings open to industry
 - see <https://ifast-project.eu/ifast-industry>
 - assess and promote the **industrial innovation potential** of R&D activities in I.FAST (in collaboration with WP3.2)
- Organizing the I.FAST general **Industry open workshops**:
 - the first after approx. 1 year from the start of the project (spring 2022)
 - the second in the last year of the project (autumn 2024)
 - topical workshop in 2023 and 2024

IAB Members



Contact:
fast-iab@cern.ch

IFAST
Innovation Fostering in Accelerator Science and Technology
Horizon 2020 Research Infrastructures GA n° 101004730

The I.FAST IAB

- First meeting announced in Oct. 21
- **TI representatives from European companies**, not directly involved in I.FAST
- participation balanced across countries, industrial sectors and size of companies
- Mandate: providing advice on:
 - developing the **potential of technologies** developed in I.FAST
 - defining **suitable business cases**
 - optimizing **impact of the industrial participation** in I.FAST
 - stimulating **applications** of R&D results
 - **removing obstacles** which limit the effectiveness of collaboration with RI and TI

IAB at work

- IAB members participated:
 - in the selection of the proposals for the **Innovation Fund program** (WP4)
 - as Advisory Board for the AMICI **Technology Infrastructures coordination project** (WP13)
- provided its feedback in the first in-person meeting in May 2022 on issues proposed by I.FAST in three specific areas:
 - I.FAST and industry: **effectiveness of industrial partner engagement in I.FAST** as co-innovators
 - **Next EC Work Programme**
 - Evolution of the **Technology infrastructure for Accelerators**

I.FAST

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Industry Advisory Board

II Meeting CERN - 5 May 2022

MEETING REPORT

The I.FAST Industry workshop

- Held on May 3 2022, at CERN. during the I.FAST Annual meeting
- Goals:
 - make the European **Industry** at large aware of the **main developments** in Accelerator-related technology being pursued in I.FAST
 - provide information on opportunities of engagement in I.FAST
 - **Innovation Fund** (see WP4)
 - **Ind. Training program** (see WP2)
 - get **feedback** from industry on their **expectations/ideas/concerns** regarding the collaboration on Accelerator R&D projects
 - provide a synthetic yet effective overview of the **major project developments with accelerators** both in Research Institutions worldwide, as well as in specific application fields (e.g. medical sector)
- Organized in collaboration with European **Industrial Liaison Officers at CERN and other Big Science Organizations**

The I.FAST Industry workshop (II)

- Excellent level of participation, especially from Industrial representatives
 - **55% participants from European companies** active in the Accelerator Field
- very positive overall feedback expressed by the IAB
- fruitful and open discussion between representatives of Industry and R.I.
- common realization of the need to extend **collaboration with Industry** to the stages when **programs, roadmaps and initiatives of common interest are defined, analyzed and prioritized** and to overcome the possible limitations and shortcomings in **exploiting the full collaboration potential** with the necessary commitment and continuity
 - finally, a proposal emerged to move forward in the agreed direction by establishing a **permanent Industry - Accelerator R.I. forum**

Accelerator Industry permanent forum (AIPF): the follow up

- Basic idea submitted to the TIARA (Test Infrastructure and Accelerator Research Area) Consortium receiving positive feedback
- Forum Terms of Reference drafted and being finalized
 - I.FAST feedback by Feb. 13
 - possible approval by the TIARA on Feb. 21
- Forum to be set up in Spring 2023

WP 3.2: Knowledge Transfer and Business Opportunities in Accelerator R&D

- Objectives
 - **Foster the Knowledge Transfer (KT)** to industry
 - Stimulate the build-up of **added industrial value in terms of creating new IP**
 - Establishing new activities for existing companies, and **facilitating the creation of spin-offs**
 - Support the beneficiaries in achieving an **optimal exploitation of the KT originated by I.FAST**

WP 3.2 - phase I

Innovation and TT potential survey



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NOTE-001

[I.FAST Knowledge Transfer Report: Assessment of Innovation Potential and KT Opportunities in IFAST R&D Activities]

[WP3]

DATE: 28.02.2021

ABSTRACT

This I.FAST Knowledge Transfer Report contains the outcome of a survey carried out in the second half of 2021, as a combined effort of the I.FAST Tasks 3.1: "Coordination and industrial partnership support" and Task 3.2: "Knowledge Transfer and Business Opportunities in Accelerator R&D". The survey was aimed at assessing the innovation potential and the technology transfer opportunities of the I.FAST R&D activities.

The KT report covers the general methodology and survey background, as well as the goals of the analysis and briefly discusses possible and planned next steps to be executed in the framework of the Task 3.2. This report represents the completion of the I.FAST milestone MS09.

- Innovation and KT Survey
 - goals:
 - assessing the **innovation potential** and the extent of **possible knowledge transfer** associated with the R&D activities in I.FAST
 - evaluating whether the level of industrial engagement in I.FAST activities **is adequate** or how it could be **strengthened further**
 - Questionnaire **sent to Task leaders**
 - Final report produced in Feb. 2022
 - Milestone MS9 achieved
- In cooperation with KTT experts from the LEAPS-INNOV project, **two events were offered** to I.FAST participants:
 - IPR Workshop: May 31st 2022 (9:00-11:00h CEST, digital)
 - IP Webinar: November 3rd 2022 (11:00 - 12:00h CEST, digital)

WP3.2 - Phase II

- **Facilitating contacts with Technology Transfer Offices**

- Identify Technology Transfer Units (Technology transfer offices, Innovation Centres, Incubators, ...) within I.FAST participating RIs
- Facilitate access to services provided by I.FAST participating RIs: what is offered by the RIs and what are the access models?
- Regular exchange: best practices, available programs - Support of high TRL follow-up activities

- **Development of a business case for one or the IIF projects** in collaboration with industry

- Study: Identify stakeholders (RI/TT units, Industry, ...), market landscape, barriers and challenges
- Define strategies and recommendations
- Establish “checklist” with general measures and instruments


WP3.3: Actions and final objective

- Main planned actions:
 - Perform a survey among the companies to identify **possible ways of extending the industrial contributions** to the R&D activities
 - Collect the feedback from RIs/TIs on the **conditions that should be fulfilled to make the extended contributions possible**
 - **Compile and analyze** the collected material
 - Discuss and propose **specific recommendations**

WP3.3: current status

- First part of the work carried out
- **Outcome** reported in a document and **summarized through a SWOT table** that will represent the basis for the next phase
 - Industry contributions to the upcoming discussions will be provided mainly through the Permanent Industry Forum and the I.FAST IAB
- Milestone MS10 achieved



	COLLECTION OF FEEDBACK FROM INDUSTRIAL PARTNERS AND RIS PARTICIPATING IN I.FAST	Milestone: MS10 Date: 30/01/2023
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IFAST

Accelerator Research and Innovation for European Science and Society
Horizon 2020 Research Infrastructures GA n° 101004730

MILESTONE REPORT

Collection of feedback from industrial partners and RIs participating in I.FAST

MILESTONE: MS10

Document identifier:	M10 Extended industrial contributions in RD activities_v6.docx10
Due date of milestone:	End of Month 20 (December 2022)
Report release date:	30/01/2023
Work package:	WP3: [Industry engagement]
Lead beneficiary:	CIEMAT
Document status:	Final report

ABSTRACT

The fundamental goal of the Task 3 of WP3 of IFAST (WP3.3) is to identify how the accelerator science and technology community can improve the effectiveness of industry-research institution collaboration since early stages. In this milestone report, the workplan of WP3.3 is described, together with a description of the activities done at this period of the project. In particular, the collection of feedback from industrial partners and RIs.

WP3.3: topics to be addressed

- main topics emerged in the interaction with Industry and R.I. representatives so far:
 - **effectiveness of the exchange of information** between RI and industry
 - successful and less successful programs and **collaborations schemes**
 - use of **funding opportunities**
 - exploitation of **Industry-Academia complementary** roles
 - **IP management**
 - specific contributions that I.FAST can provide, in particular the value of **coordinating strategies with synergistic communities** on accelerator science specific subjects
 - specific contributions that **I.FAST** can provide
 - early consideration of **market-related** aspects
 - discussions about the right level of **internal capacities of prototyping**

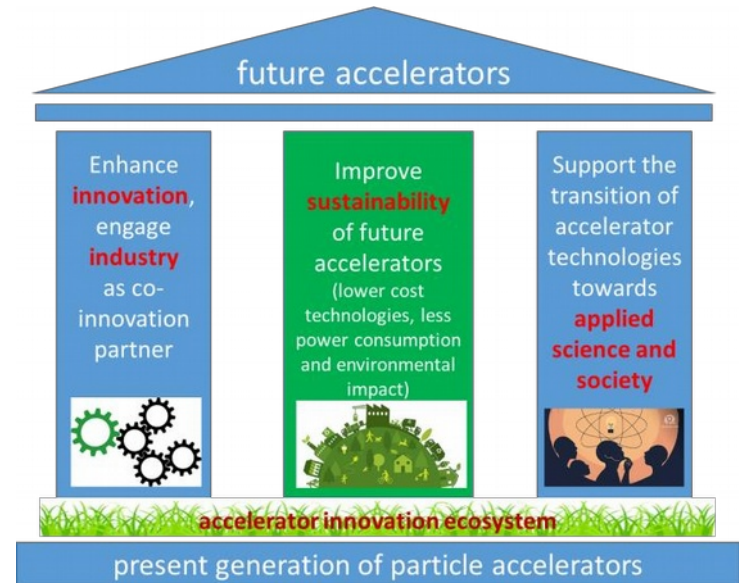
Relevance of WP3 objectives and impact

- WP3 activities **have been carried out as originally planned** for all tasks
- they have confirmed the importance of **consolidating the collaboration with Industry** to implement a real co-innovation paradigm
- the **response from Industry** to the initiatives aimed at implementing this approach **has been very encouraging**
- the activities also highlighted **challenges to be faced and opportunities to be seized** for developing the Technology Transfer potential of I.FAST R&D activities and of Industrial contributions; they represent the basis for the WP3 work in the second part of I.FAST

BACKUP SLIDES

Conclusions

- **Engaging Industry** as a co-innovation partner is considered in I.FAST a **pillar** on which to build the transition to future more **sustainable accelerators** and and to **wider applications** of accelerator technologies
- This inspiring approach has shaped the I.FAST project **from the beginning** and is now vigorously being pursued by WP3



The I.FAST industrial partners

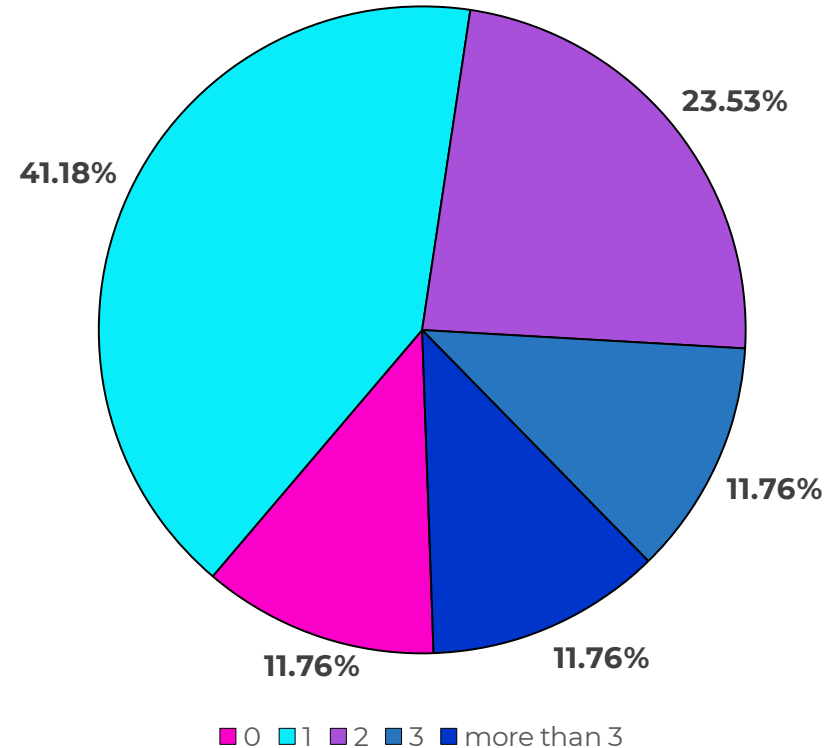
<i>Company</i>	<i>Role</i>	<i>IFAST tasks</i>	<i>Country</i>
RHP Technology	Beneficiary	4.3	Austria
Nanoker Research SL	Beneficiary	4.4	Spain
Barthel HF-Technik GmbH	Beneficiary	5.3	Germany
Bergoz	Beneficiary	5.3	France
TMD Technologies Limited	Beneficiary	7.5	United Kingdom
Amplitude Systemes	Partner	6.2, 6.4	France
Thales ALS France	Partner	6.2, 6.4	France
Kyma SRL	Beneficiary	7.3, 11.3	Italy
Comeb s.r.l.	Beneficiary	7.4, 7.5	Italy
VDL ETG Precision	Beneficiary	7.4, 7.5	Netherlands
Scanditronix Magnet AB	Beneficiary	8.4	Sweden
Elytt Energy SL	Beneficiary	8.5	Spain
Piccoli SRL	Beneficiary	9.2	Italy
Thales AVS France SAS	Beneficiary	11.2	France
Cyclomed Technologies SL	Beneficiary	12.3	Spain
General Electrics	Beneficiary	12.3	Sweden

Specific industry-related actions

- **Internal Innovation Fund** (WP4)
 - The objective is to encourage I.FAST beneficiaries to propose innovative solutions for accelerators, with viable commercial potential, that can be beneficial for addressing the general climate challenge of the planet. **Partnerships with industrial companies** is a prerequisite for applying to the competitive selection call
 - selection procedure has been carried out and projects are starting
- **Trainee-ship Programme** at European Accelerator Development Laboratories (WP2)
 - Opportunity for a early-career engineers or technicians **working at a European industrial company** to work as trainees at the I.FAST European Accelerator Development Laboratories for a duration of 2 weeks to 3 months.
 - Call for applications is now open

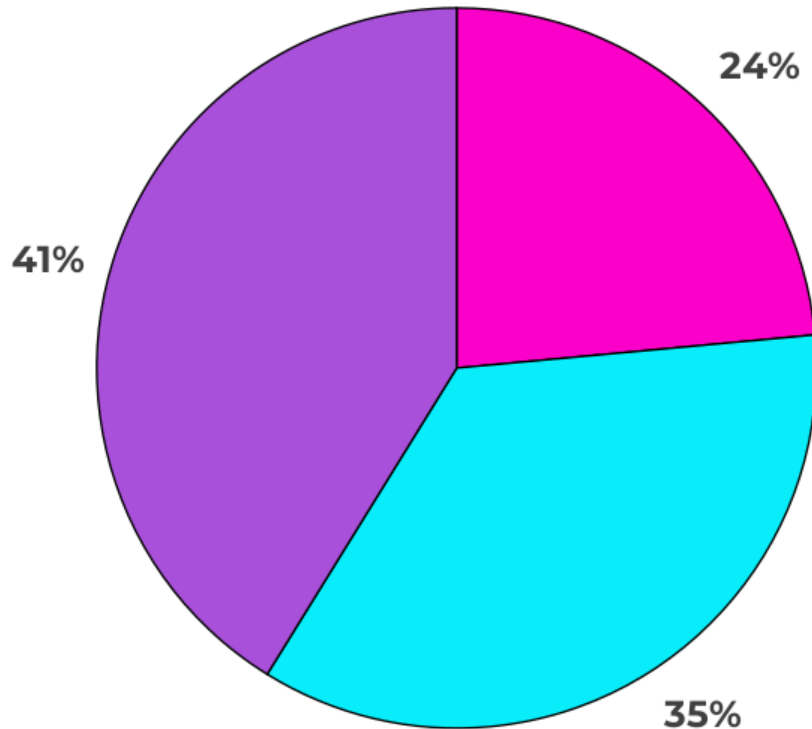
Participation of companies in R&D task activities

- in 12% of the tasks there is no industrial collaboration
- in 41% -> one partner
- in 47% -> more than one partner



Examples of Surevey results (I)

Expectations of industrial products/process innovation from I.FAST activities



- option 1: limited innovation spillover to industrial partners (supply of: off the shelf, build to print components)
- option 2: industry involvement and Knowledge transfer can bring significant innovation to industrial products and/or processes.
- option 3: industrial innovation is an expected outcome.

Examples of Surevey results (II)

Expected TRL evolution trajectories in I.FAST

- self-evaluation by task leaders

