

# The next EU opportunities



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*On behalf of TIARA,*  
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# Outline

## 1. What is TIARA ?

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2.2 The HORIZON-INFRA-2023-2024 Work Programme

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3.2. Considerations for HORIZON-INFRA-2025+



# 1. Test Infrastructure and Accelerator Research Area (TIARA)

The main objective of **TIARA**, a *Consortium of European Research Institutions* operating significant R&D Infrastructures in the European Particle Accelerator Research Area, is to :

- create a dedicated structure to **exchange expertise**
- **facilitate and support** the setting-up of **joint R&D programmes** and **education and training** in the field of **Accelerator Science and Technology in Europe**.

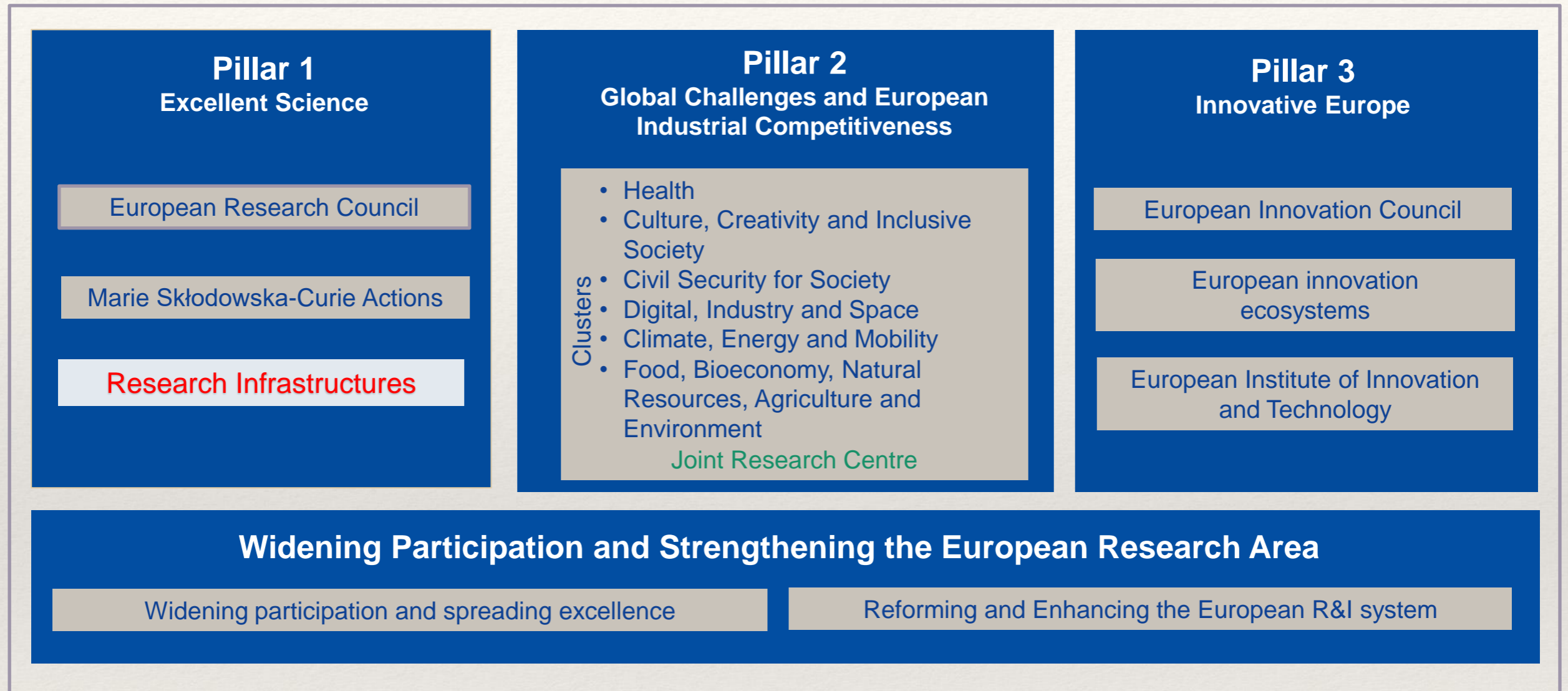
These activities include but are no limited to the following:

- Provision of **scientific and technical guidance** and advice **for cooperative R&D toward future Accelerator Science and Technology**;
- Promotion and facilitation of cooperation** concerning accelerator R&D activities **for the benefit of the accelerator developers and the accelerator-user communities**, so as to contribute to the development of innovation and state-of-the-art;
- Provision of support to the scientific communities, including those within industry, for accessing equipment, facilities and accelerator systems** at accelerator R&D facilities at a European level;
- Facilitation** of the **upgrading** of existing **accelerator R&D facilities** and the **development of new** accelerator R&D **infrastructures** by the Parties with a view to the **efficient realization of joint R&D projects**;
- Facilitation of applications** by the Parties **for grants or external funding** from the European Commission and other International Organizations;
- Taking all actions necessary for the achievement of the purpose** including, but not limited to, conferences, education, training course seminars workshops, focus groups, study tours, proposal preparation, project reviewing, surveys, publishing and software tools, **as well as promotion of innovation through collaboration with industry**.



# 2. Research Infrastructure Work Programme 2022-2024

## 2.1 Research Infrastructures in Horizon Europe





## 2. Research Infrastructures Work Programme 2022-2024

### 2.1 Research Infrastructures Work programme 2021-2022

#### *Destinations*

- **INFRA SERV:** RI services to support health research, accelerate the green and digital transformation, and advance frontier knowledge
- **INFRA TECH:** Next generation of scientific instrumentation, tools and methods and advanced digital solutions
- **INFRA DEV:** Developing, consolidating and optimising the European RI landscape, maintaining global leadership-Research Infrastructure Concept Development- provision of integrated RIs services to enable R&I addressing major societal challenges
- **INFRA EOSC:** Enabling an operational, open and FAIR EOSC ecosystem
- **INFRA NET:** Network connectivity in Research and Education – Enabling collaboration without boundaries



## 2. Research Infrastructure Work Programme 2022-2024

### 2.1 Projects (HORIZON-INFRA-2022-DEV-01-01)

Project Acronym	Project Title
ARGOS-CDS	ARGOS Conceptual Design Study: Designing a next-generation radio facility for multi-messenger astronomy
DAESY	DAta and services for the Earth SYstem science
ESSnuSBplus	Study of the use of the ESS facility to accurately measure the neutrino cross-sections for ESSnuSB leptonic CP violation measurements and to perform sterile neutrino searches and astroparticle physics
Euro GO-SHIP	Developing a Research Infrastructure concept to support European hydrography
EuroFAANG	A European infrastructure for farmed animal genotype to phenotype research
MDDB	Molecular Dynamics Data Bank. The European Repository for Biosimulation Data
MuCol	A Design Study for a Muon Collider complex at 10+ TeV center of mass
PRESTO	Pathfinder facility for a new class of precision-physics storage rings Pathfinder facility for a new class of PREcision-physics STORage rings
PRO-GRACE	Promoting a Plant Genetic Resource Community for Europe
RITIFI	Research Infrastructure Technology Infrastructure For Impact
STRAITS	Strategic Infrastructure for improved animal Tracking in European Seas
WST	The Wide Field Spectroscopic Telescope



## 2. Research Infrastructure Work Programme 2022-2024

### 2.2. The HORIZON-INFRA-2023-2024 Work Programme

Public: 25 Nov.; Publish, 28 Nov..

Call Opening: December 2023.

#### **DESTINATION – DEVELOPING, CONSOLIDATING AND OPTIMISING THE EUROPEAN RESEARCH INFRASTRUCTURES LANDSCAPE, MAINTAINING GLOBAL LEADERSHIP (INFRADEV)**

**Call - Developing, consolidating and optimising the European research infrastructures landscape, maintaining global leadership (2023)**

HORIZON-INFRA-2023-DEV-01-01: Concept development for a research infrastructure to manage, integrate and sustain large medical cohort studies

HORIZON-INFRA-2023-DEV-01-02: Early phase implementation of ESFRI Projects which entered the ESFRI Roadmap in 2018

HORIZON-INFRA-2023-DEV-01-03: Consolidation of the RI landscape – Individual support for evolution and long-term sustainability of pan-European research infrastructures

HORIZON-INFRA-2023-DEV-01-04: Consolidation of the RI landscape – development of complementarities, synergies and/or integration between a set of pan- European research infrastructures

HORIZON-INFRA-2023-DEV-01-05: Preparation of common strategies for future development of RI technologies and services within broad RI communities

HORIZON-INFRA-2023-DEV-01-06: Strengthen the bilateral cooperation on research infrastructures with Latin America

HORIZON-INFRA-2023-DEV-01-07: Strengthening the international dimension of ESFRI and/or ERIC research infrastructures

HORIZON-INFRA-2023-DEV-01-08: Preparatory phase of new ESFRI research infrastructure projects



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**Call - Developing, consolidating and optimising the European research infrastructures landscape, maintaining global leadership (2024)**

HORIZON-INFRA-2024-DEV-01-01: Research infrastructure concept development

HORIZON-INFRA-2024-DEV-01-02: Strengthen the bilateral cooperation on research infrastructures with Africa

HORIZON-INFRA-2024-DEV-01-03: Consolidation of the RI landscape – Individual support for evolution, long term sustainability and emerging needs of pan-European research infrastructures



## 2. Research Infrastructure Work Programme 2022-2024

### 2.2. The HORIZON-INFRA-2023-2024 Work Programme

Dates:

Public: 25 Nov.; Publish, 28 Nov..

Call Opening: December 2023.

#### **DESTINATION – NEXT GENERATION OF SCIENTIFIC INSTRUMENTATION, TOOLS AND METHODS AND ADVANCED DIGITAL SOLUTIONS (INFRA TECH)**

##### **Call - Next generation of scientific instrumentation, tools, methods, and advanced digital solutions for RIs (2024)**

HORIZON-INFRA-2024-TECH-01-01: R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade

HORIZON-INFRA-2024-TECH-01-02: New technologies and solutions for reducing the environmental and climate footprint of RIs

HORIZON-INFRA-2024-TECH-01-03: Development of tools, solutions, modules to enable R&I on the social aspects of the green transition

HORIZON-INFRA-2024-TECH-01-04: New digital twins for Destination Earth

HORIZON-INFRA-2024-TECH-01-05: AR/VR-empowered digital twins for modelling complex phenomena in new RI application areas



## 2. Research Infrastructure Work Programme 2022-2024

### 2.3. Proposals for the 2023-2024 Work Programme

**Call HORIZON-INFRA-2024-TECH-01-01** : R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade

**Total budget estimate:** 62 MEUR

EU contribution per proposal: 5...10 MEUR

**Eligibility:** Consortia must include at least 3 different research infrastructures, each of them being an ESFRI infrastructure, and/or a European Research Infrastructures Consortium (ERIC) or another research infrastructure of European interest

**Two presentations in the last TIARA meeting in June :**

- **HTS Magnet Technologies for Future ESFRIs** (CERN, EMFL, ESRF, EXFEL, GSI/FAIR, ESS + institutes)
- **Towards an International Network For Multi-physics Modelling, Machine learning and Model-based Control in Accelerator Sciences and Technologies** (CERN, SPIRAL2, ESRF, EXFEL, GSI/FAIR, ESS + institutes)



## 3. Research Infrastructure Work Programme 25+.

### 3. 1 INFRA-INNOV Coordinator's Meeting 07 Nov 2022.

#### Participants

Elke Plönjes, Annika Thies, Julia Hauk, Elena Hengstmann	LEAPS-INNOV	League of European Accelerator-based Photon Sources
Svetlomir Stavrev, Paolo Giacomelli	AIDA-Innova	Advanced European Infrastructures for Detectors at Accelerators
Maurizio Vretenar, Mauro Morandin	I.FAST	
Jose M. Perez	TIARA	
Marcello Losasso	CERN, KTT	

**Background:** The advanced communities addressed in the call INFRAINNOV-04-2020 agreed to implement a joint “RI Co-Innovation Platform” and will have an on-going exchange on overlapping topics.

- It was agreed that the WP2023/24 reads difficult and they might need to **decide to focus on the WP 2025+**. The 3 project coordinators agree it would make sense to lobby for the HE WP 2025+ and push for innovation back in the WP.
- It was suggested from TIARA that spring/summer 2023 would be a good timing for lobbying the EC. By that time, it would be expected them to have settled some key ideas.
- It was suggested we all speak one message: try to be very clear that we want the communities concise (clearly against fewer money and merging into a too broad community). We need to be careful to avoid the impression of being the same community.
- It was suggested to mobilize the voice of our industry. It would be now a good timing for building a forum for our communities and industry. The impression from the last BSBF event is that many companies are involved in the 3 communities.



## 3. Research Infrastructure Work Programme 25+.

### 3.1 INFRA-INNOV Coordinator's Meetings 20 Feb & 26 May 2023.

#### Consolidation of the considerations in the previous meeting

- The three communities agree on recommending **use INFRATECH 2023-24 for specific R&D** needs on the most relevant topics to the communities,
- **leaving innovation-oriented integrated approaches to 2025+** (one per community)

#### Possible options for actions 2025+ were discussed, preparing the ground towards jumping from project-based to program-based actions:

- Co-fund projects were discussed as a possible option (actually, a reality already in our projects).
- Acceptable co-fund level and types of co-fund preliminary discussed.
- The possibility (and difficulties) of leveraging co-funding via matching funds
- Viability subject to a minimum budget: talked about 10 M€ per community for 4 years.
- Should the communities want to prepare themselves towards real Cofunded European Partnerships in the next FP?

#### Agreements

- Discuss these aspects within the three communities along the next months, for reaching to an agreed position.
- Next meetings with EC: the three communities to prepare a common approach in around two months and a common position paper by September.
- **The three communities must be seen by EC as well coordinated communities, but with different roadmaps,** showing no evident added value if merged into an unified frame.
- A relevant objective of our community: the continuation of an integrated, innovation-oriented project.
- It seems not advisable to use the call HORIZON-INFRA-2024-TECH-01-01: R&D for the next generation of scientific instrumentation, tools, methods, solutions for RI upgrade for a continuation of ARIES and IFAST.



# 3. Research Infrastructure Work Programme 2025+

## 3.2. Considerations for HORIZON-INFRA-2025+

Directorate-General for Research and Innovation

ERA & Innovation (Ms Anna PANAGOPOULOU)

Open Science and Research Infrastructures (RTD.A.4)

**Meeting with Michael Arentoft, head of Open Science and Research Infrastructures Unit (RTD.A.4)  
the day June 5, 2013**

### Attendees

- Michael Arentoft (Head of Unit)
- Patricia Postigo
- René Martins
- Dejan Duvorsek
- Eugenio Nappi
- Maurizio Vretenar
- Jose M. Perez

### Meeting Outline:

1. Introduction
2. A description of our community
3. Discussion about the short-term plans of the ASc&T Community.
4. Discussion about the Mid-term plans.



# 3. Research Infrastructure Work Programme 2025+

## 3.2. Considerations for HORIZON-INFRA-2025+

### Our aspiration as community

#### WP 2025-2027

IFAST concludes in April 2025

After it, our community will need a new flag-ship project, a generator and incubator of innovation for all the activities that are not mature enough to go to an INFRA-TECH call.

*The more than 50 European research institutions and companies contributing to R&D on particle accelerator technologies strongly support the establishment of Pilot INFRA-TECH calls for the 2025/27 Research Infrastructure Work Programme, oriented towards low-TRL (technological Readiness Level) exploratory technology developments with strong co-innovation content with industry. A call in this direction will lay the basis for an evolution of accelerator-based Research Infrastructures towards supporting and enlarging their wide user community in a sustainable way, enhancing at the same time their impact on society and on industrial production technologies at the global level, contributing to policies and strategic priorities of the European Union.*

#### Next Framework Program

**Aspiration: An approach more efficient than just coordination via single proposals to different calls**

- Long-term collaboration frames (> 5 years).
- Open consortia for design studies, research and development, co-innovation, technological infrastructures map consolidation, E&T, Outreach.
- Serving Technological Platforms at high and low TRL
- In close synergy with Industry



## 3. Research Infrastructure Work Programme 2025+

### 3.2. Considerations for HORIZON-INFRA-2025+

#### Preliminary ideas on how to implement our roadmap in the next FP.

Ideally, the next European Framework Programme should support an Integrated Programme:

- over 7 years: instead of funding specific INFRA-X projects, address the needs of ASc&T at large.
- Estimated yearly budget: ~20 M€/year (140 M€ over 7 years).
- Matching funds by institutes to be defined (TIARA will take the responsibility of agreeing with institutions and Member States).

The Integrated Programme could be recognized by the EC via an (open) consortium agreement, or any other coordination structure suitable to implement an integrated roadmap.

Within the Integrated Programme actions, we should launch projects at any adequate time (“open call” mode) and decide funding level.

**TIARA can take the role of organizing this consortium, and help finding suitable fund management and operation schemes.**

We have experience for managing this model: we have implemented such model in projects like ARIES and IFAST.



## 3. Research Infrastructure Work Programme 2025+

### 3.2. Considerations for HORIZON-INFRA-2025+

#### Specific discussion about formats for an integrated coordination

##### Formats for an integrated coordination: large consortia vs co-funded partnerships

We clearly proposed large consortium agreements for covering our integrated roadmap.

**The concept "open" (open-consortia) was not very well received by EC.** An open consortium can be too complex to manage. We specified that the concept open to us described a consortium in which a small number of modifications in the partner list should be requested. This clarified our view, in agreement with EC.

**The concept co-fund commented from our side arose an important discussion.** The three co-found formats possible in the current Framework Programme were briefly described (co-programmed -with and without strong involvement of the industry-, joint undertaking and co-funded).

A clarification about co-funding was given: **we did not mean co-funded compromises between EC and Member States programs**, but in-kind contributions.

**A discussion between partnerships versus large-dimension grants was open.**

**Specifically, partnerships were not recommended to us.**

**It was clear to them that the partnership model introduces a relevant complexity in terms of management.**

**They suggested that the model of grants (integrated, long-term -7 years-) as sufficient for us (what is in complete agreement with us !!)**



## 3. Research Infrastructure Work Programme 2025+

### 3.2. Considerations for HORIZON-INFRA-2025+

#### Specific conclusion about formats for an integrated coordination

The position in favor of the model of long term grants instead of partnership is a major change in the messages from the head of Unit

(Please, remember the position of the former head of Unit regarding a wide partnership for all the instrumentation communities)

TIARA expressed its interest to take the role of organizing this consortium, being keen to help finding suitable fund management and operation schemes.

#### WP 2025-2027

The interest of the three INFRA-INNOV communities (Accelerators, LEAPS and Detectors) to discuss a specific call for WP 2025-27

A common meeting in Brussels is scheduled on July 13.

They are open and interested in what we are going to propose, since exploiting the “innovation potential of RI’s” is in their agenda for the WP25+.

They give us an advice: the three consolidated communities plus Astronomy/Astrophysics to be recognized as the BIG SCIENCE communities, as a clear differentiation versus other communities classically engaged on INFRA-TECH.