

# APPEC

## and the HORIZON-INFRA-2023-SERV-01-02 call\*

\* The Horizon Europe 2023-2024 Work Programme has not been officially released yet.



# HE Work Programme 2023-2024 – Research Infrastructures → Five destinations



- **INFRADEV** – Developing, consolidating and optimising the european research infrastructures landscape, maintaining global leadership
- **INFRAEOSC** – Enabling an operational, open and fair EOSC ecosystem
- **INFRASERV** – **Research infrastructure services to support health research, accelerate the green and digital transformation, and advance frontier knowledge**
- **INFRATECH** – Next generation of scientific instrumentation, tools and methods and advanced digital solutions
- **INFRANET** – Network connectivity in research and education - enabling collaboration without boundaries

# Destination INFRASERV - Aims

Provision of efficient, customised and integrated RI services:

- ✓ To enable the transition toward a sustainable Europe and a prosperous economy
- ✓ To address main challenges and EU priorities, including an effective and responsive health system and to accelerate the transition towards a green and digital future
- ✓ **To continue enabling the advancement of frontier knowledge in areas complementary to those addressed through a challenge-driven approach**

# HORIZON-INFRA-2023-SERV-01-02 call: Research infrastructures services advancing frontier knowledge

## Scope:

This topic aims at providing **trans-national access (on-site or remote) and/or virtual access to integrated and customised RI services** for curiosity-driven research in wide scientific domains.

Scientific domains are identified on the basis of a Multi-Annual Priority Setting (MAPS) exercise aiming at achieving a balanced coverage of scientific disciplines addressed under the INFRA-SERV destination as well as complementarities with Horizon 2020 ongoing grants offering access provision.

In 2023, the scientific domains called under this topic are:

- Biosphere: terrestrial biodiversity and ecosystems, including forest;
- **Astronomy and Astroparticle physics;**
- Arts and Humanities.

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## Expected Outcome:

- wider, simplified, and more efficient access to the best research infrastructures available to researchers to conduct curiosity-driven research, irrespective of location;
- breakthrough and leading-edge research enabled by advanced research infrastructure services made available to a wider user community;
- improved and harmonised RI services and broader use of RI resources across Europe deriving from the exploitation of synergies and complementarities;
- a new generation of researchers trained to optimally exploit all the essential tools for their research;
- cross-disciplinary fertilisations and a wider sharing of information, knowledge and technologies across scientific fields fostered by closer interactions between researchers active in and around research infrastructures;
- better management, including implementing FAIR data principle, of the continuous flow of data collected or produced by research infrastructures.

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- **Expected EU contribution per project:** The Commission estimates that an EU contribution of between EUR 8.00 and 14.50 millions would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
- **Access provision mandatory**
- **Proposal page limit: 100**
- **Award criteria:** For the 'Excellence' criterion, in addition to its standard sub-criteria, the following aspects will also be taken into account:
  - The extent to which the access activities (trans-national and/or virtual access) will offer **access** to the state-of-the-art infrastructures of European interest in the field, high quality services, and will enable users to conduct excellent research
  - The extent to which the project will contribute to facilitating and integrating the access procedures, to improve the services the infrastructures provide and to **further develop their on-line services**

# Specific features for Research Infrastructures

## Trans-national access activities (TNA)

- Trans-national access to infrastructure services offered under the grant is provided '**free of charge**' to selected researchers or research teams (user-groups) including from industry.
- Access activities should be implemented in a **coordinated way** so as to improve the overall service provision to the research community.
- Access may be made available to external users, either in person ('hands-on'), when the user visits the infrastructure to make use of it, or through the provision to the user of remote scientific services (e.g. the remote access to a high-performance computing facilities)
- Research infrastructures must **open specific calls** to invite researchers to apply for access. A unit of access to each infrastructure service/installation needs to be identified and precisely defined in the proposal.
- The selection of researchers or research teams must be carried out through an independent peer- review evaluation of the research project. The research team, or its majority, must work in countries other than the country(ies) where the infrastructure is located except when access is provided by an International organisation, the Joint Research Centre (JRC), an ERIC or **similar legal entities with international membership**.
- **The EU financial support to trans-national access** will cover the access costs incurred by the access provider in providing access to the selected researchers, as well as the travel and subsistence costs incurred in supporting visits to the infrastructure of these researchers.

# Specific features for Research Infrastructures

## Virtual access activities

- Virtual access to research infrastructure is provided through communication networks to users complying with the RI's access policy, without selecting them. Examples of virtual access activities are provision of access to databases available via Internet, or data deposition services.
- The research infrastructures must publicise widely the access offered under the grant agreement to ensure that researchers who might wish to have access to the infrastructures are made aware of the possibilities open to them
- **The EU financial support to virtual access** will cover the access costs incurred by the infrastructure in providing access under the project, including the technological and scientific support researchers need to effectively use the services.
- A unit of access to each research infrastructure service must be identified and precisely defined in the proposal. The provision of virtual access during the project lifetime will be measured through the units of access defined in the grant agreement and must be periodically assessed by an external board. Eligibility criteria (e.g. affiliation to a research or academic institution) for users can be defined in the proposal, to take into account the access policies of the different RIs.



# The call – to sum up

- Will be found in the Horizon Europe – Work Programme 2023-2024 for Research Infrastructures
- Id: HORIZON-INFRA-2023-SERV-01-02
- Call scope: providing trans-national access on site or remote and/or virtual access to integrated and customized RI services for curiosity-driven research
- Scientific domain: "Astronomy and Astroparticle physics"
- Budget: up to 14.5 million euros
- Deadline for submission: 15 March 2023

# Astroparticle/Astronomy discussions

- **A joint astronomy/astroparticle community proposal**
- Focus on the overarching topic "Time domain, multi-messenger follow-up" is proposed. One of the objectives could be the implementation of a (virtual/conceptual) European Center for Multi-messenger Astrophysics
- This will include the high-energy domain (X-rays & gamma rays, cosmic rays, neutrinos), Gravitational Waves, optical and radio bands for follow-up. There is a need for further discussions on what else to include to keep a unified proposal (eg. CCSNe ?)

# Astroparticle/Astronomy – projects and partners

- H2020 funded projects interested in participating (dynamic list): Opticon RadioNet Pilot (ORP), AHEAD2020, ESCAPE
- Constructive discussion with Astronet (Vincent)
- Other interested partners? Besides main RIs on the roadmap ?
- Focus on Europe and European leading efforts (e.g FINK) related to US infras.
- CNRS (IN2P3+INSU) is offering a coordination role



# Astroparticle/Astronomy – projects and partners



The OptiCon RadioNet pilot brings together the well-established ground-based astronomy community to offer, support and develop access to radio and optical facilities.



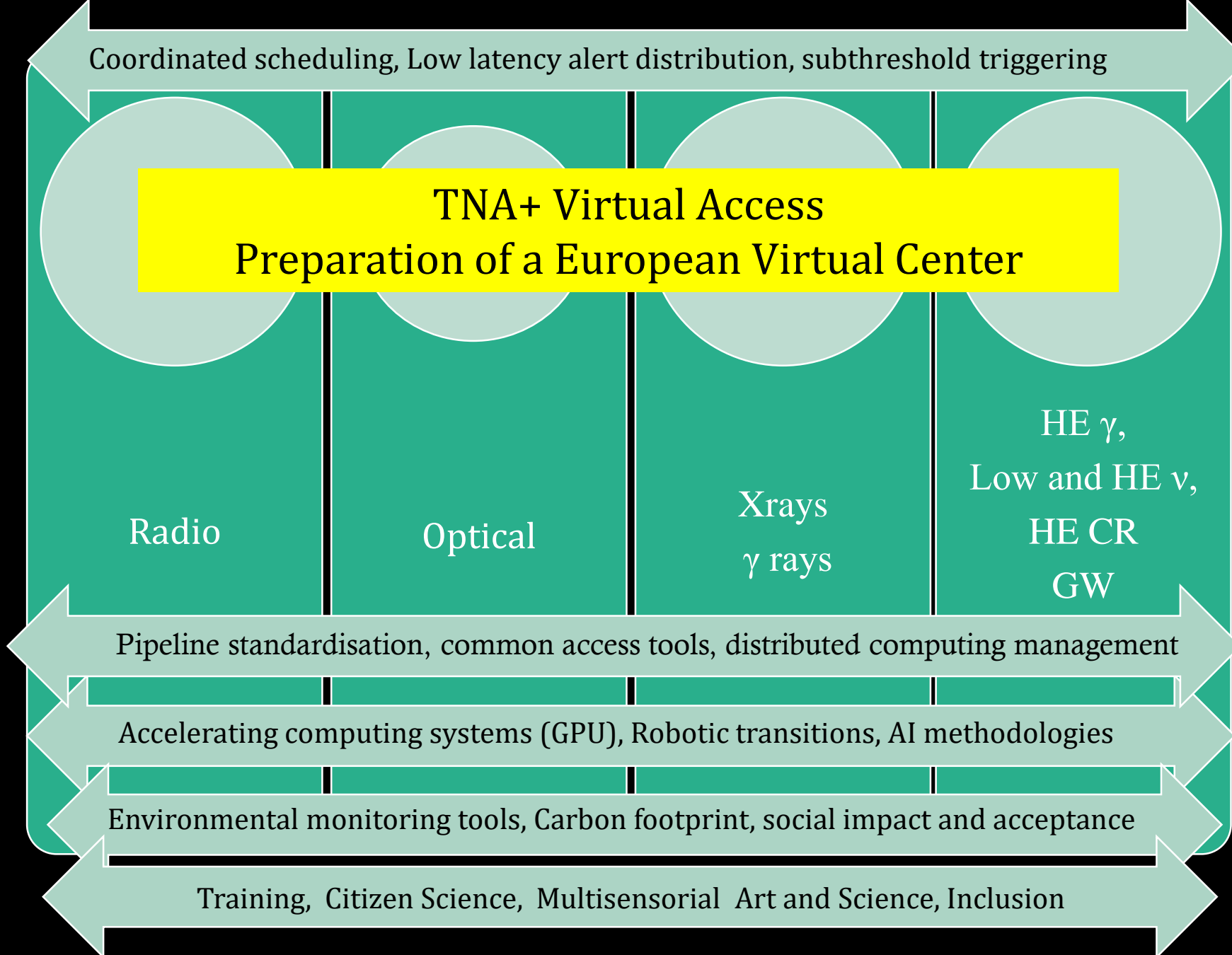
The overall objective is to advance further the integration of national efforts in high-energy astrophysics, keeping the community at the cutting edge of science and technology and ensuring that observatories are at the state of the art.



Establish a single collaborative cluster of next generation European Strategy Forum on Research Infrastructures (ESFRI) facilities in the area of astronomy- and accelerator-based particle physics in order to implement a functional link between the concerned ESFRI projects and European Open Science Cloud (EOSC).

# Next steps

- A meeting of some experts in the time domain will be organized in September (doodle underway launched by Andreas)
- A Multi-messenger workshop will be held on October 10-12 in Florence, as follow-up of the APPEC MMA Workshop in Paris (Jan 22), locally organized by Stavros Katsanevas. The last day will be dedicated to the proposal (more information to come, see next slides).



## First Day

1. Theory: 1 hour
2. MMA Physics possibilities: 1 hour
3. Reviews per messenger/wavelength (3/4 of the hour each)
  1. Radio VLA, ALMA, LOFAR, IRAM, ATCA/ASKAP, MeerKAT, SKA
  2. IR/Optical/UV VLT, ZTF, Keck, Subaru, Gemini, TMT, HST, E-ELT, LSST, JWST, WFIRST, ULTRASAT, Luvoir,
  3. X-Rays/LE  $\gamma$ -Rays : Chandra, XMM, e-Rosita/Nustar, HXMT, THESEUS, HERMES, Lynx, FERMI, SWIFT, GECAM, SVOM , Strobe-X AMEGO, e-ASTROGAM
  4. HE  $\gamma$ -Rays MAGIC/HESS, HAWC, CTA
  5. LE  $\nu$  Juno, SuperK/HyperK, DUNE
  6. HE  $\nu$  I CECUBE, KM3Net, GVD
  7. UHECR AUGER,TA,LHAASO

## A strawman agenda

## Second Day:

1. Agency Roadmaps
  1. APPEC , ASTRONET
  2. Snowmass , ASTRO2020
  3. ESA (Voyage 2050) , ESO
  4. Other Countries
2. Near and longer term large observatory deployments
  1. SKA
  2. LSST
  3. E-ELT
  4. JWST
  5. EUCLID
  6. ATHENA
  7. ET and LISA
  8. CTA
  9. KM3NeT
  10. DUNE and HK

## Third day: Pass in review possibilities for European program (previous presentations, informed from issues below)

- TNA and Virtual Access that can be offered
- Common Joint Research Activities
- Low latency alerts
- Computing models and access, Standardisation
- Scheduling issues
- Environmental impact and monitoring
- Training and Engagement, Citizen Science

Stavros K