

# The HEAP-MM proposal

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# The call

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- ▶ **INFRA-2011-I.1.23. Research Infrastructures for astroparticle physics: High energy cosmic rays, multi-messenger approach**
- ▶ **A project under this topic must:**
  - ▶ provide and facilitate access to the key research infrastructures in Europe for multi-messenger astronomy and astroparticle physics
  - ▶ aim to integrate these facilities and resources with a long term perspective
  - ▶ stimulate new scientific activities aimed at taking full advantage of the possibilities offered by the High Energy Stereoscopic System (HESS), the Pierre Auger Observatory, the Major Atmospheric Gamma-ray Imaging Cherenkov Telescope (MAGIC) and the new possibilities which will be offered by the future Cherenkov Telescope Array (CTA) and Kilometre Cube Neutrino Telescope (KM3NeT)

# The HEAP-MM proposal

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- ▶ **Keyword: “multimessenger approach”**
  - ▶ High energy probes: charged cosmic rays, gamma, neutrinos
- ▶ **What we wanted to address**
  - ▶ Astrophysics
  - ▶ Fundamental physics
  - ▶ New technologies for future infrastructures



# Aim of the proposal

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- ▶ **Integrating the infrastructures**
  - ▶ Science coordination
  - ▶ Tools for data analysis and data distribution
  - ▶ Interpretation of results
- ▶ **Providing access to the existing infrastructures**
  - ▶ Access to observation time
  - ▶ Access to data
  - ▶ Access to test experiments
- ▶ **Exploring novel technologies**
  - ▶ Improve existing infrastructures
  - ▶ Design new ones

# Who was in

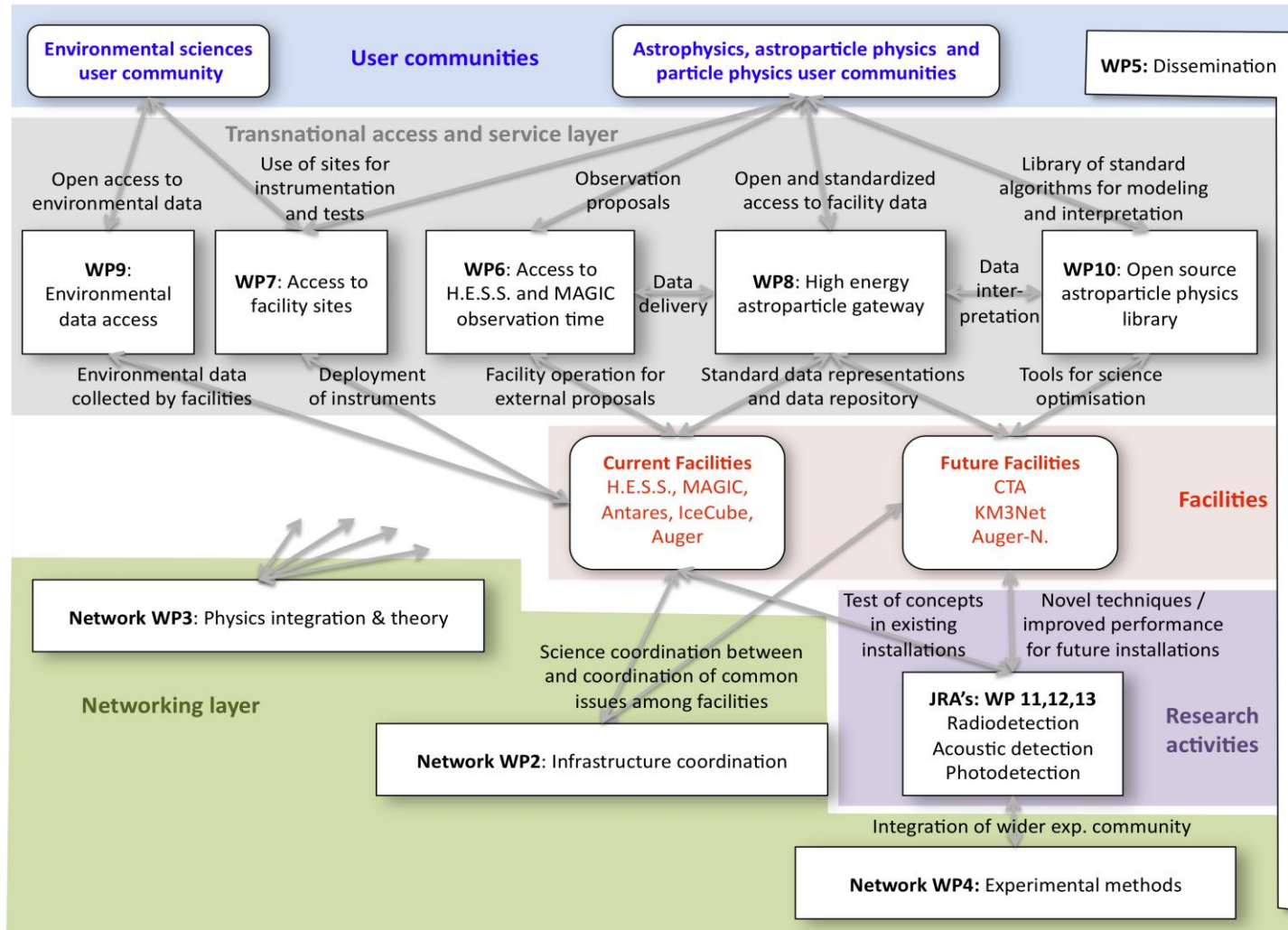
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- ▶ 31 participants from 14 EU countries
- ▶ Existing infrastructures
  - ▶ HESS
  - ▶ MAGIC
  - ▶ ANTARES
  - ▶ IceCube
  - ▶ Pierre Auger Observatory
- ▶ Future infrastructures
  - ▶ CTA
  - ▶ KM3NeT
  - ▶ Enhancements of the Pierre Auger Observatory

# Project organization


<b>Networking</b>	Infrastructure Coordination
	Physics Integration
	Experimental Methods in Multimessenger High Energy Astroparticle Physics
	Dissemination and outreach
<b>Transnational Access</b>	Transnational access to H.E.S.S and MAGIC
	Transnational access to test and environmental sites
<b>Service Activities</b>	High-Energy Astroparticle gateway
	Environmental Data Access
	Open Source Astroparticle Physics Library
<b>Joint Research Activities</b>	Radio Detection Techniques for Ultra-High-Energy Cosmic Rays and Neutrinos
	Acoustic Detection of Ultra-High Energy Neutrinos
	Development of advanced Photo-Detectors and Associated Components for Astroparticle Physics

# Project organization



# Titolo

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# Did we fail completely?

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- ▶ Proposal unsuccessful from the point of view of the funding
- ▶ Not from the point of view of starting a discussion to shape and bring together a very large community and to enlarge the user community

*“Already the work towards this proposal had significant impact, in terms of all major facilities for the very first time committing to open access to their data”*

# Some ideas for the discussion (random thoughts)

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- ▶ **Who could be the users (besides the collaborations)?**
  - ▶ Users requesting observation time (rather clear in the case of gamma-ray observatories; what could they be in the case of neutrino or cosmic ray observatories?)
  - ▶ User requesting access to the infrastructure
    - ▶ To install test experiments (*test of new technologies, industrial partners, ...*)
    - ▶ Other science experiments (*already under way and well defined in the case of KM3NeT*)
    - ▶ Access to the data (*what policy and model for data distribution?*)
- ▶ **How do we publicize the access opportunities?**
  - ▶ Calls for observation time
  - ▶ Calls for access to the infrastructures
  - ▶ Web sites for open data access

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## ▶ Global observatories

- ▶ Share common practice
- ▶ Share data → requires common “format”
- ▶ Source catalogs and open data repositories
- ▶ Simulation tools