

# AIDAInnova

## an Overview

P. Giacomelli (INFN Bologna)

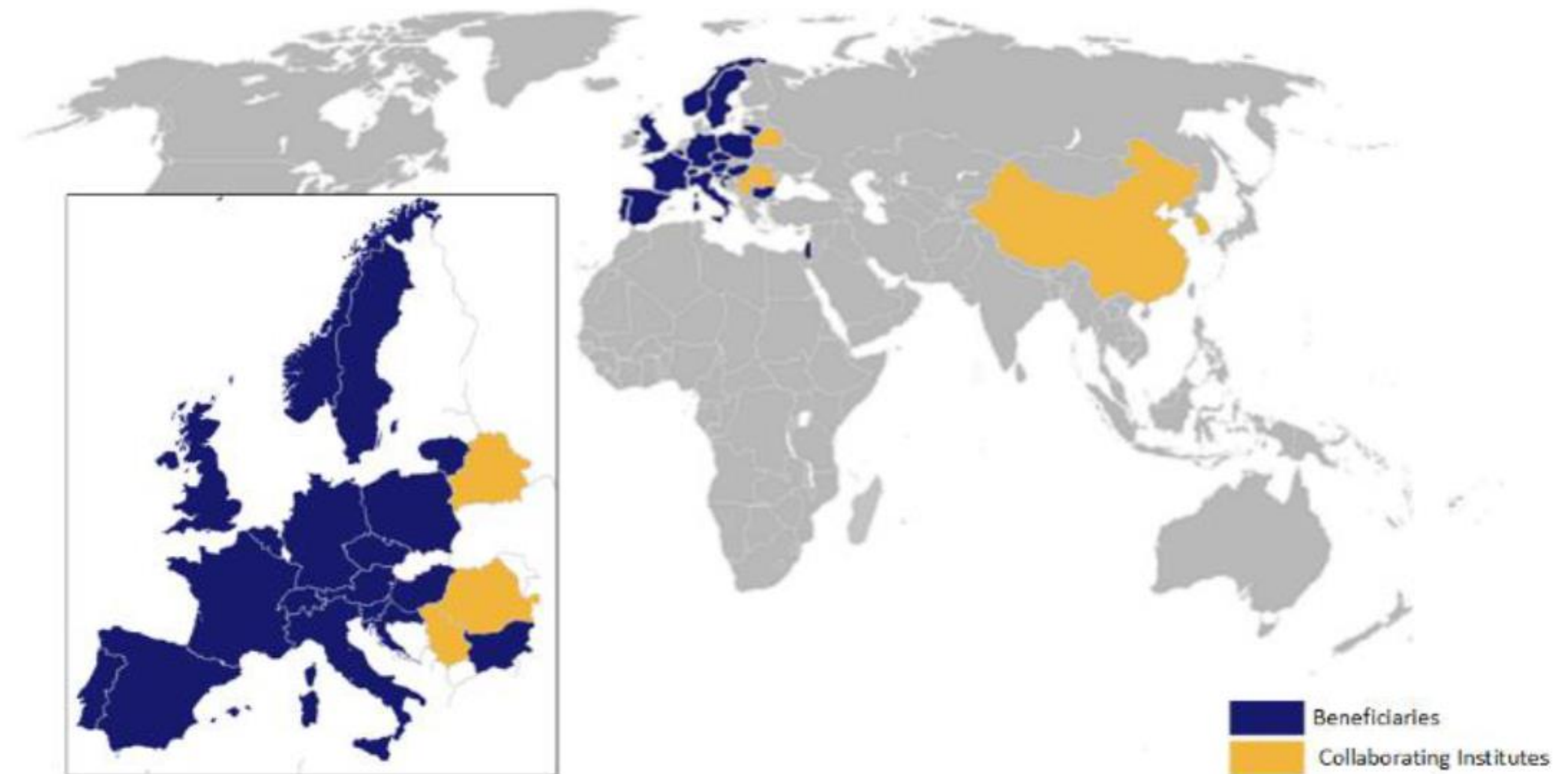
INFN Bologna

AIDAInnova Scientific coordinator



**AIDAInnova** is the **largest** European program on R&D for detectors for High Energy Physics (HEP)

- Collaborative framework
- Infrastructure: common interest
- 15 countries
- **46** beneficiaries
  - 35 academic + 11 industrial and RTOs
  - + 10 associated partners
- Duration: 01/04/2021 - 30/03/2025
- Coordinating institute: CERN
- Scientific coordinator: F. Sefkow (DESY) (first year), Paolo Giacomelli (INFN)
- EC contribution **10.0 M€**
- Total budget **~26 M€** (co-funding of **~16 M€**)
- Activities:
  - Joint Research & Networking activity
- Website: <https://aidainnova.web.cern.ch>



Participants bring in complementary competences and a balanced coverage of projects.

- **FP6: EUDET: 2006-2010**

- Detector development for linear collider

- **FP7: AIDA: 2011-2014**

- Detector development for LHC upgrades and linear colliders
- Project-specific work packages

- **FP8: AIDA-2020: 2015-2020**

- Common LC and LHC work packages
- New communities: large cryogenic neutrino experiments, new topics
- New innovation measures, with industry

Increasing level  
of integration



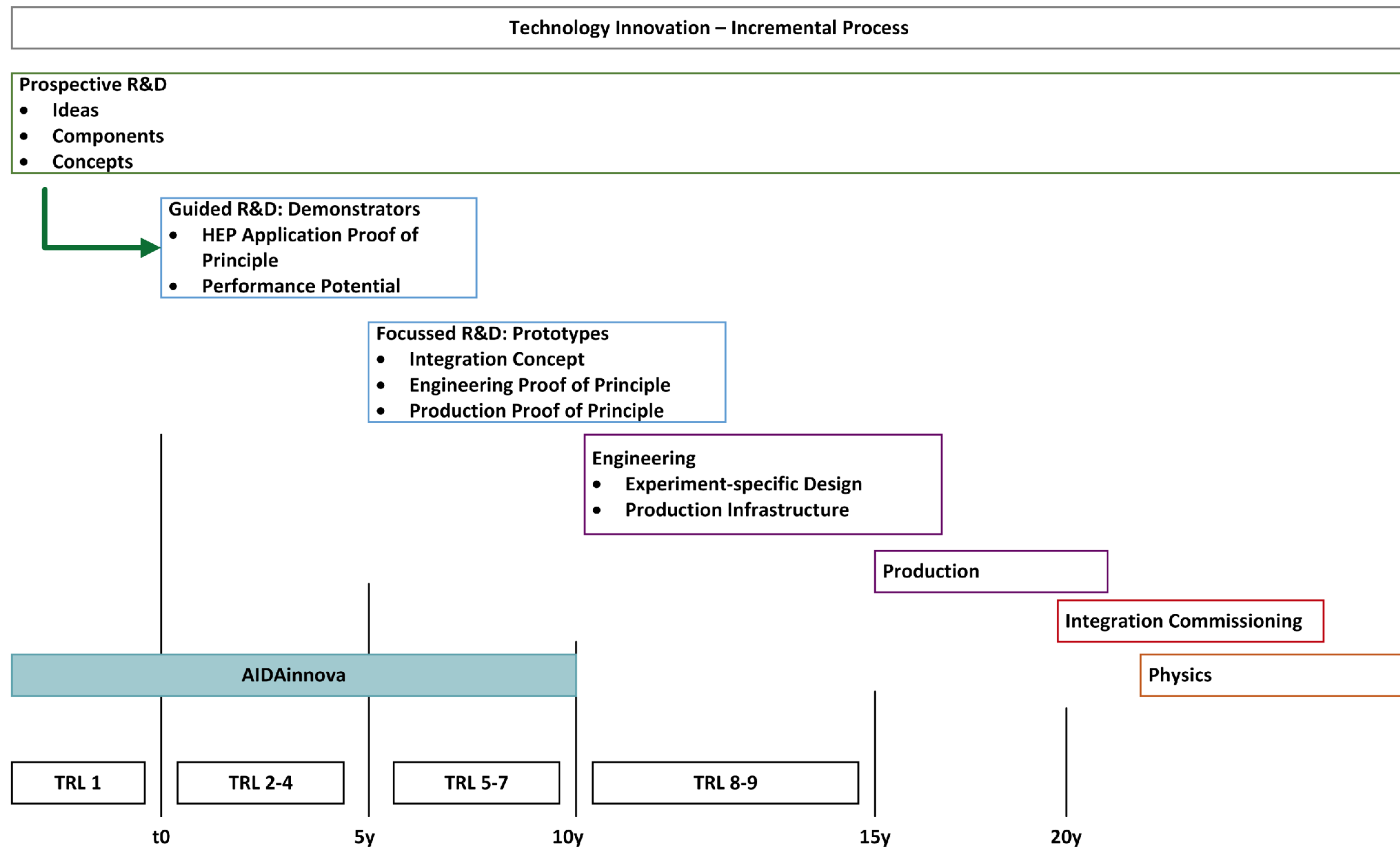
**All had a strong leverage on matching funds from national sources, typically a factor of 3**

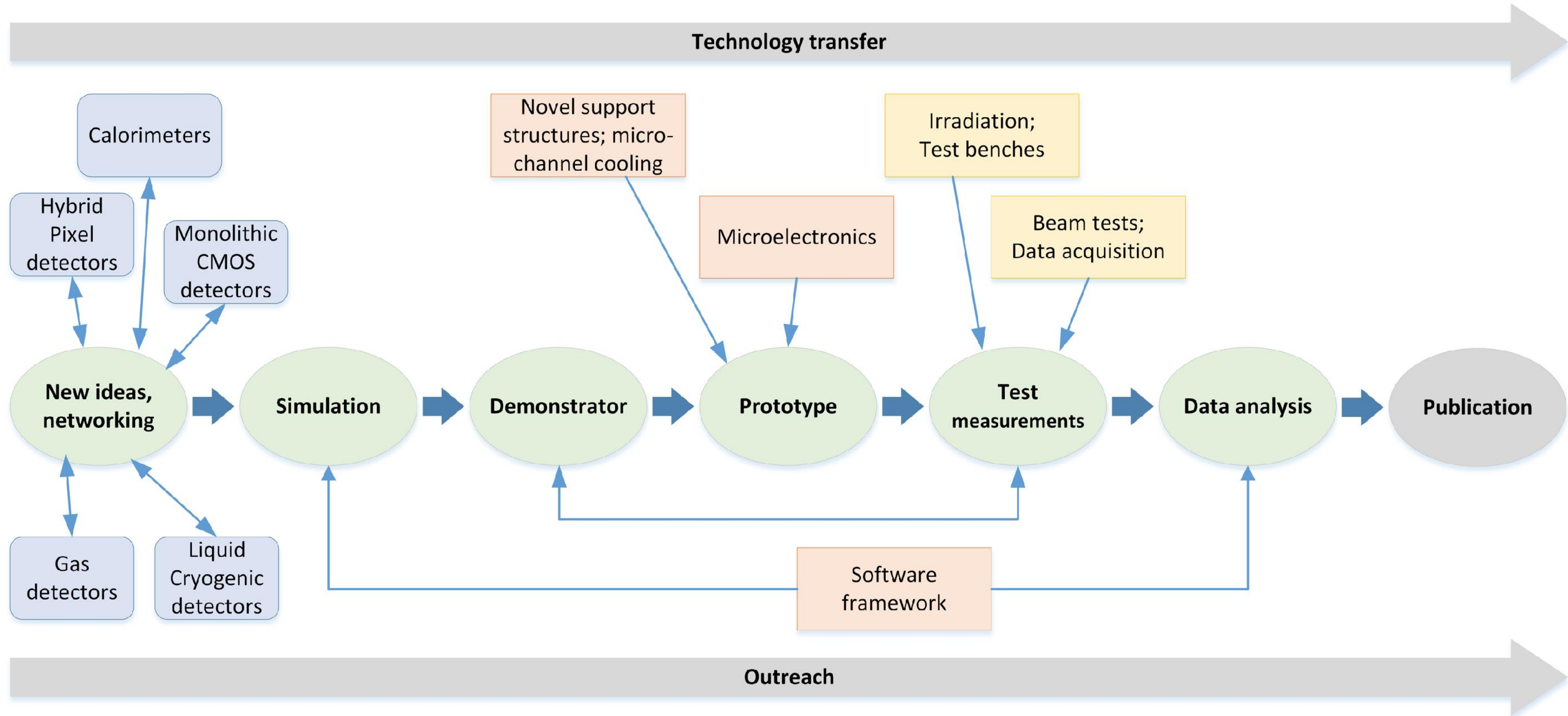
## AIDAInnova focuses on Strategic R&D in the pre-TDR phase

- Technology Readiness Levels 2-7
- Not yet experiment-specific: potential to unfold synergies
- **Include some prospective R&D**
- Competitive call at start of project
- “Blue Sky”, quantum sensors,...

## Targeted applications

- Higgs Factories
- ALICE LS3, LHCb LS4 pre-TDR, ATLAS & CMS LS4
- Accelerator-based neutrino experiments
- and others...





- Technology transfer to and from industrial partners happens throughout the development cycle
- Same is true for outreach

- **13 Work Packages (WPs)**
  - **2 Administration WPs**
  - **10 Scientific WPs**
  - **1 “Blue-sky” WP**
- **2 coordinators/WP**
- **Scientific and Industrial Advisory Panel**
  - **I. Ionak-Auer (AMS AG)**
  - **D. Fournier (LAL)**
  - **M. Kasemann ( DESY)**
  - **P.S. Marrocchesi (Univ. Siena)**
  - **P. Merkel (FNAL)**
  - **J. Strait (LBNL)**
- **WP1: Project management and coordination**
- **WP2: Communication, Education and Innovation**
- **WP3: Test beam and infrastructure**
- **WP4: Upgrade of Irradiation and Characterization Facilities**
- **WP5: Depleted Monolithic Active Pixel Sensors**
- **WP6: Hybrid pixels sensors for 4D Tracking and Interconnection Technologies**
- **WP7: Gaseous detectors for frontier science**
- **WP8: Calorimeters and Particle Identification detectors**
- **WP9: Cryogenic neutrino detectors**
- **WP10: Advanced mechanics for tracking and vertex detectors**
- **WP11: Microelectronics**
- **WP12: Software**
- **WP13: Prospective and Technology-driven Detector R&D**

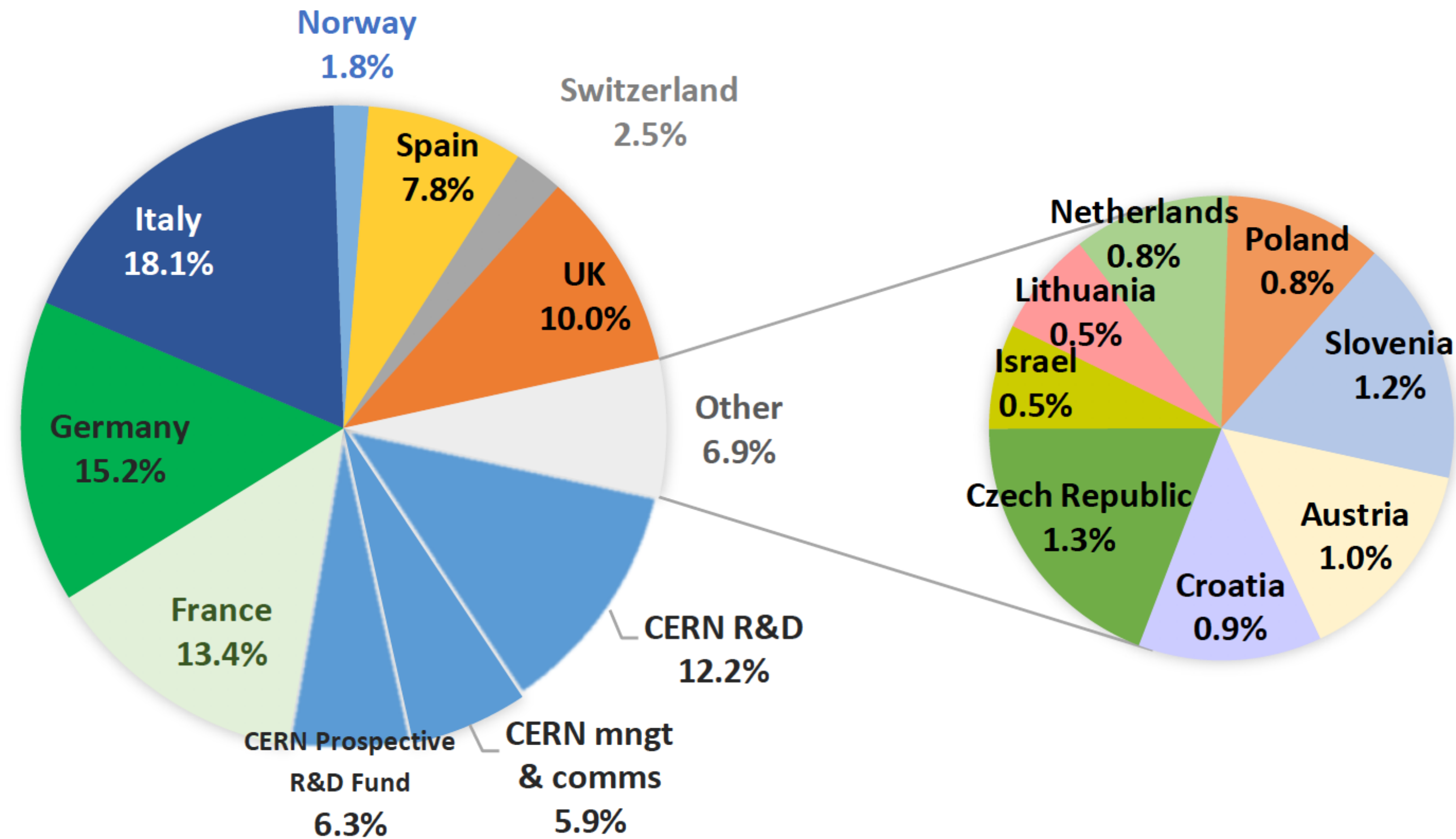
- **Advanced R&D and infrastructure** for detectors at future colliders
  - Lepton colliders
    - Circular
    - Linear
  - Hadron colliders
- **Novel detector technologies** for large-scale particle physics experiments
- **Innovative software** solutions (ML, etc.) for future detectors
  - Triggering
  - Tracking
  - Calorimetry
- Extended neutrino WP with also short baseline neutrino detectors
- **Joint R&D** programmes with **industrial beneficiaries**
- “Blue sky” R&D (competitive allocation after start of project) higher risk projects

# AIDAInnova budget

Full costs budget AIDAInnova = ~ 24 M€

EC contribution = 10 M€

## EC FUNDING PER COUNTRY





All the administrative and financial aspects of the project are handled with great competence by the CERN EU office: **S. Stavrev**, **S. El Yacoubi** and **C. Levointurier-Vajda**



**Paolo  
Giacomelli**  
(INFN Bologna)  
Scientific  
Coordinator



**Daniela  
Bortoletto**  
(Univ. of Oxford)  
Deputy Scientific  
Coordinator



**Giovanni  
Calderini**  
(CNRS, LPNHE)  
Deputy Scientific  
Coordinator

- EC-funded detector initiatives are a **unique forum** to exchange knowhow, unfold synergies and enhance coherence in European detector R&D
- AIDAinnova started on April 1, 2021: **10 M€** of EU contribution, total budget of **24 M€** (4 years)
- Targeted applications in line with **European Strategy** Update
- Future large  $e^+e^-$  colliders (FCC-ee, CEPC, ILC), EIC, pre-TDR fixed target experiments
  - Pre-TDR LHC upgrades (ALICE LS3, LHCb LS4)
  - Accelerator-based neutrino experiments (DUNE)
- Increased focus on integration with **industrial partners**
- Very good collaboration with the other INFRA-INNOV projects, LEAPS-INNOV and I.FAST
  - Had many meetings and organised together 2-3 workshops and events (Lund 2022, Valencia 2023 and Paris 2024)

# Backup

## Consultation with the community

- Call for Expressions of Interest in May 2019
- Overwhelming response: 162 Eols

## Structuring the Input: Topic Convenors\*

- Reports at 1st Open Meeting September 4, 2019

## Proposal Structure, Work Package definition

- Presented at 2nd Open Meeting October 23, 2019

## Deadline March 17, 2020 (postponed to May 14)

- proposal was submitted within deadline, and resubmitted with minor improvements

## Approval November 3, 2020

- Prepare Grant Agreement, Consortium Agreement

## Start: April 1, 2021

### CERN-EU Office:

Livia Lapadatescu

Sabrina El Jacoubi

Coralie Hunsicker

Laëtitia Veyrat

**Hard and intense work  
by many people!**

## Proposal Preparation Team:

**Felix Sefkow (DESY)**

AIDA-2020 Scientific Coordinator

**Daniela Bortoletto (U Oxford)**

AIDA-2020 Deputy Coordinator

**Giovanni Calderini (LPNHE Paris)**

AIDA-2020 Governance Board Chair

**Paolo Giacomelli (INFN Bologna)**

AIDA-2020 Deputy Coordinator

**Svetlomidir Stavrev (CERN)**

AIDA-2020 Administrative Coord.

**Anne Dabrowski (CERN)**

CERN representative in the PPT

**Thomas Bergauer (HEPHY Vienna)**

**Lucie Linssen (CERN)**

**Ivan Vila Alvarez (CSIC Santander)**

**Morgan Wascko (IC London)**