



AIDA 2020

Advanced European Infrastructures
for Detectors at Accelerators

AIDA++ * Introduction

* Working Title for the AIDA-2020 Follow-up

Felix Sefkow
DESY

AIDA++ Open Meeting
CERN, September 4, 2019



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654168.





- AIDA-2020
- A new Call in Horizon 2020
- Call for Expressions of Interest and first steps
- Today's Open Meeting



AIDA²⁰²⁰

Advanced European Infrastructures for Detectors at Accelerators

AIDA-2020



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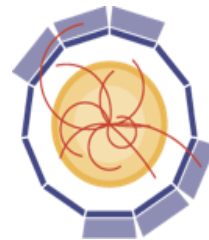




- FP6: EUDET: 2006-2010
 - Detector development for linear collider
- FP7: AIDA: 2011-2014
 - Detector development for LHC upgrades and linear colliders
 - Project-specific work packages
- FP8: AIDA-2020 2015-2020
 - Common LC and LHC work packages
 - New communities: large cryogenic neutrino experiments, new topics
 - New innovation measures, with industry
- **All projects have a strong leverage on matching funds**
- **Unique in creating coherence on European level**



Increasing level of integration

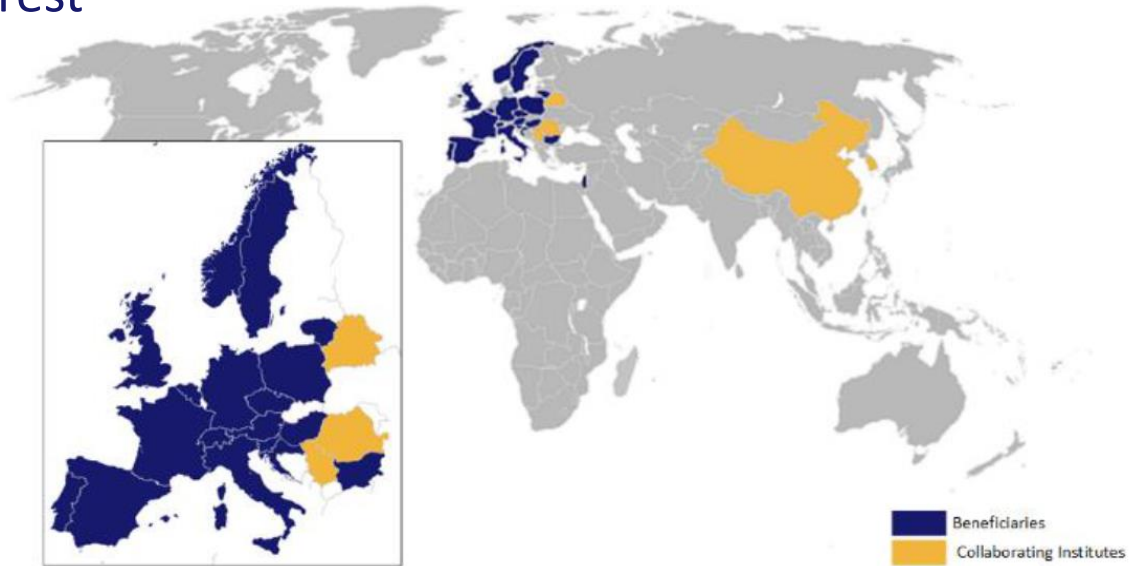




- Collaborative framework
- Infrastructure: common interest

<https://aida2020.web.cern.ch>

- 19 countries
- 38 beneficiaries
 - + 20 collaborating institutes
- Coordinated by CERN
- Total budget 29.8 M€
- EC contribution 10.0 M€

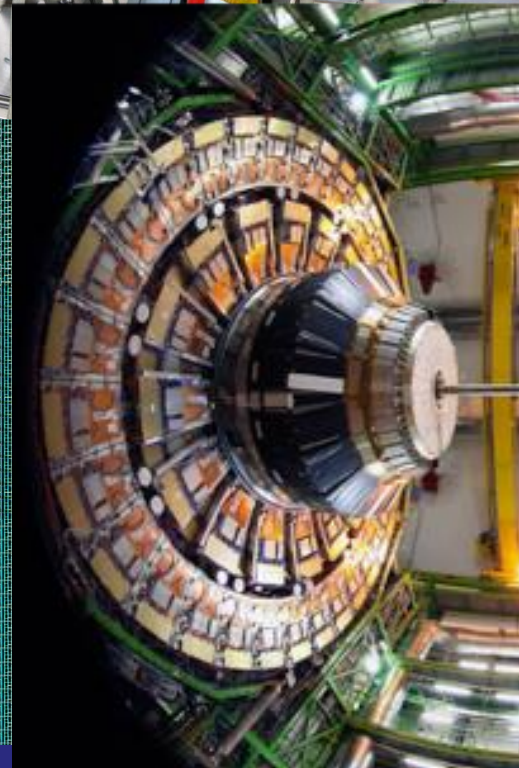
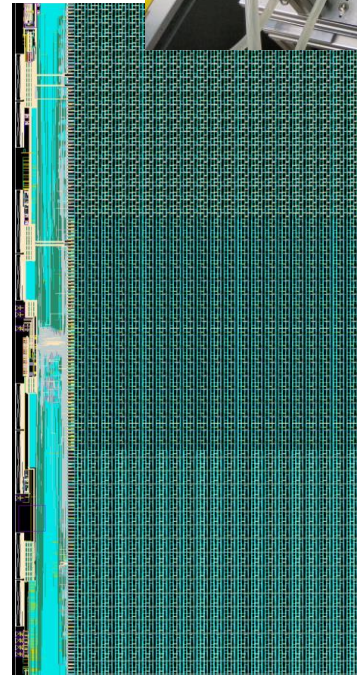
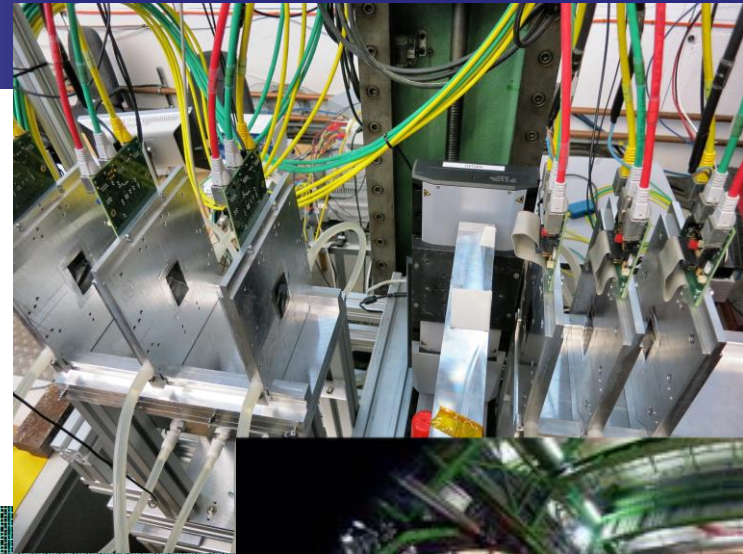


- Activities:
 - Mainly: Joint Research & Networks (85%)
 - Transnational Access (13%)

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



- Common micro-chip development
 - Expensive submissions
- Test beam instrumentation
 - Keep pace with increasing precision
- Common test beam DAQ
 - Easy prototype integration
- Common software frameworks
 - Parallel and vector computing
- Joining forces for novel detectors
 - LHC tracker technology and LC calorimetry
-> imaging calorimeter for HL-LHC
- Test infrastructures
 - Mechanics, cooling, optical materials, electro-magnetic, irradiation, data base support....





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New Call INFRAINNOV-04-2020 Innovation Pilots



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- ***The information is based on the Work Programme for 2018-2020, 2.July 2019***
 - The actual Call for the Innovation Pilots will be published in autumn (~November)
- Topic: **Innovation for Detector Technologies for Accelerators**
- Expected EC funding: **up to 10 M€** , Proposal **Deadline March 17, 2020**
- Objective:
 - Support **research infrastructure networks** developing and implementing a **common strategy/roadmap** including technological development required for **improving their services** through **partnership with industry**;
 - Support **incremental innovation** and **cooperation with industry and academia** in areas such as scientific instrumentation
- Target : **Advanced Integrated Activities (i.e. the AIDA-2020 community)**, which have reached a high level of integration and can **focus on joint research developments**, here instrumentation for particle physics at accelerators



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Strategic guidance
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 - Infrastructure spirit
 - Strategic guidance
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 - Incremental – not disruptive
 - Partners - not spin-offs
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- **Innovation for delivery of services, or new services of infrastructures**
 - Infrastructure can be interpreted as **facilities, tools and platforms** serving common interest for detector development, like in AIDA-2020
 - Innovation can be incremental
- Development of **technologies & techniques underpinning** the use of the RI
 - **Prototyping** corresponding methodologies & instrumentation
- Activities of Joint Research and Networking type (no distinction)
- But **no Transnational Access** mechanism
 - Infrastructure upgrades aiming at improving the performance or services of existing facilities can be included in the Innovation Pilots
- Main goal is **strategic R&D**
 - Activities must be related to the needs of future accelerator projects
- **Generic and Blue Sky R&D** will be addressed by a Proof-of-Concept funds distributed on a competitive basis after start of the project



- Involvement of **industrial partners** is strongly encouraged
 - If possible as beneficiary
- **Sustainability** and co-funding must be demonstrated
 - Relation to future projects must be clear
 - Long-term commitment of partners to be demonstrated by Matching Funds
 - As in AIDA-2020: 200% (including personnel) on average, dependent on type of activities
 - For industrial partners 100% target
- **Complementarity** with other actions (e.g. **ATTRACT**) is strictly required
 - There will be collaboration agreements to exclude double funding
- **Non-European partners** can participate
 - **no EC funds**, must have a **defined role** in work programme
- Awareness of **environmental aspects** may be relevant



AIDA²⁰²⁰

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Call for Expressions of Interest



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- CERN takes the initiative provides support by EC office
- Nominates lead for proposal preparation
- To engage with the community at large: Call for Expressions of Interest
- Sent out on May 17, Deadline July 15, 2019, with **template**
- **Title** plus some keywords, topic
- Partner **institutes** (max 6), **Contacts** (1 per institute)
- **Description** (1 page)
 - Planned activity, envisaged outcome
 - Relevance to future accelerator-based HEP project
 - Common interest, added value for the community, Innovation aspects
- **Deliverables, Budget** estimate
 - Personnel (FTE years, total EC + Matching Funds 2:1 (Industry 1:1))



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- **Received 162 Eols**
 - AIDA-2020: ~60
- Total requested funds > 30M€



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Thank you!

- Daniela Bortoletto (U Oxford) AIDA-2020 Deputy Coordinator
- Giovanni Calderini (LPNHE Paris) AIDA-2020 Governance Board Chair
- Paolo Giacomelli (Bologna) AIDA-2020 Deputy Coordinator
- Felix Sefkow (DESY) AIDA-2020 Scientific Coordinator
- Svetlomir Stavrev (CERN) AIDA-2020 Administrative Coordinator

- Anne Dabrowski (CERN) CERN representative in the PPT
- Thomas Bergauer (HEPHY Vienna)
- Lucie Linssen (CERN)
- Ivan Vila Alvarez (CSIC Santander)
- Morgan Wascko (IC London)



- Test beam Facilities & DAQ:
 - M.Stanitzki (DESY), M.Wing (UCL), H. Wilkens(CERN)
- Irradiation & Characterisation Facilities
 - F.Ravotti (CERN), F.Arteche (Zaragosa), G.Kramberger (JSI)
- Mechanics & Cooling
 - P.Petagna (CERN), C. Gargiulo (CERN), G. Viehhauser (Oxford)
- Microelectronics & Interconnections
 - C. De La Taille (Palaiseau), A.Rivetti (Torino), A Marchioro (CERN)
- CMOS detectors
 - S. Grinstein (Barcelona), M. Caccia (Como), P. Riedler (CERN), T. Hempernek (Bonn)
- Hybrid silicon detectors
 - A. Macchiolo (Zurich) G.Pellegrini (CSIC), C. Gemme (Genova)
- Calorimeters
 - R. Poeschl (LAL), K. Krüger (DESY), R.Ferrari (Pavia)



- Particle ID
 - G.Wilkinson (Oxfrd), E.Auffray (CERN)
- MPGD & RPC
 - S. Della Torre (Trieste), M.Tytgat (Ghent), B. Mandelli (CERN)
- Large Volume Gas Detectors
 - B. Schmidt (CERN), F. Grancagnolo (Lecce)
- Neutrino Detectors
 - D. Autiero (Lyon), E. Rondio (Warsaw), G. Catanesi (Bari)
- Software
 - F. Gaede (DESY), G.Stewart (CERN)
- Knowledge Transfer & Outreach
 - A. Pezous (CERN)



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- Main Task: Prepare **structured summaries** of EoIs for the Open Meeting

Topics for this meeting
- and not yet Work Packages



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Today's Open Meeting



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- Strategic keynote talks
 - Reminder of our future goals and needs
- Topical summaries
 - Take stock of what the community proposes
- Short discussions after the talks, and a bit more time at the end



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- We do not have the EC funds yet!

- So this is not about the distribution of funds
- This is about the composition of an excellent and competitive proposal best matching the EC guidelines and our community's goals



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Back-up



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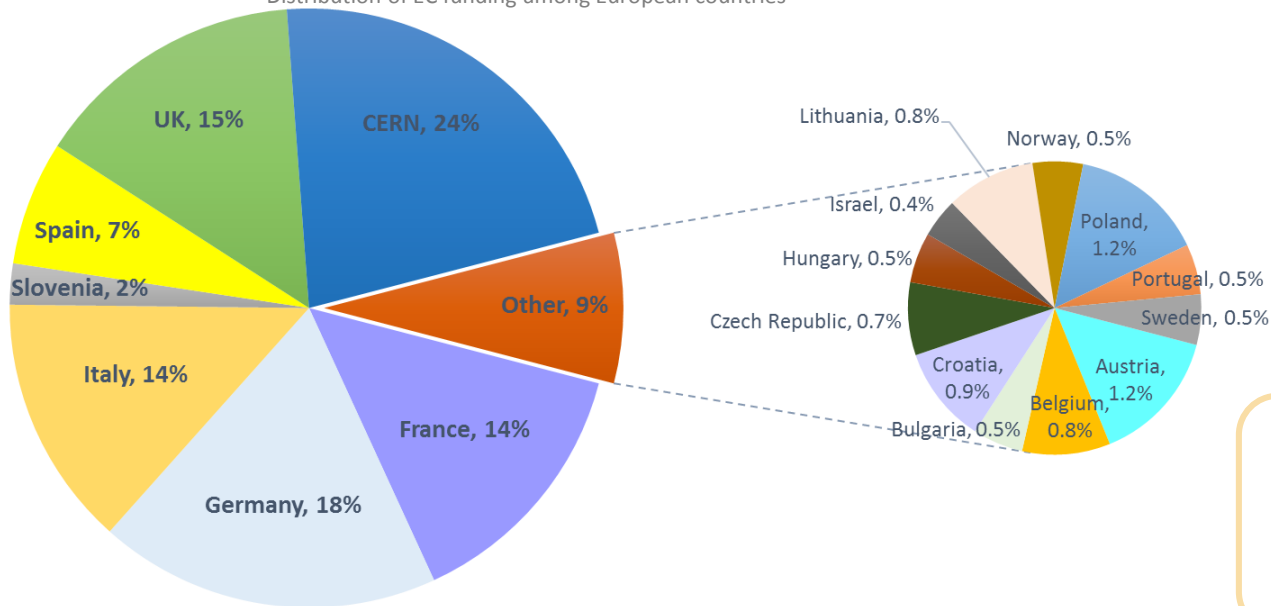
- Main Task: Prepare **structured summaries** of EoIs for the Open Meeting
 - Summary should be complete, all EoIs should be mentioned
 - EoIs should be grouped by sub-topics, interconnections and possibilities for cooperation should be pointed out
 - Comments on infrastructure (community added value) and strategic aspects (relevance for future projects) are welcome
 - Possibilities for Industry participation should be highlighted or summarised
 - A total requested budget should be shown, if possible grouped by sub-topic



Full costs budget AIDA-2020 = ~ **29 M€**
EC contribution = **10 M€**

→ all partners contribute with a certain amount of matching funds and the funding rate for the beneficiaries varies between 29% (JRA) and 95% (TA)

Distribution of EC funding among European countries



Key for involving small countries

Total Person-Months = **2,525.5 PM**