

Guidelines for submitting an Expression of Interest (EoI) towards the preparation of the H2020 Innovation Pilot on Detector Technologies at Accelerators

H2020 Innovation Pilots – general information¹

Background: In 2020 the EC will launch a new instrument (Innovation Pilot) for advanced communities that have been supported under H2020 and previous Framework Programmes with three or more Integrating Activities, and have reached a high degree of integration at European level. The Innovation Pilot Call will be targeted, with three communities invited to submit proposals in the domains of (i) light source technologies, (ii) accelerator technologies, and (iii) detector technologies at accelerators.

Scope: Funding will be provided to research infrastructure networks to start the implementation of a common strategy/roadmap for technological developments required for improving their services through partnership with industry. Proposals should involve research infrastructures, industry and SMEs to promote innovation and knowledge sharing through co-creation of needed technical solutions and make use, when appropriate, of large-scale platforms combining R&D (Research and Development), integration and validation for the technological developments.

Eligible activities: Under the ongoing or previous Integrating Activity projects, support was (is) provided for Joint Research Activities, Networking Activities, and Transnational Access. Under the new Innovation Pilots, Transnational Access will not be supported.

The Innovation Pilots should contain activities aiming at:

- the development of identified key fundamental technologies or techniques which improve the performance, or create new services of the involved research infrastructures.
- the prototyping and testing of novel instrumentation, including components, subsystems, materials, and dedicated software, needed to upgrade the involved research infrastructures or construct their next generation.

Call deadline and funding

The Innovation Pilot Call is expected to have a deadline in mid-March 2020, and a budget of 10 MEUR is reserved for each of the three targeted projects / communities.

¹ This information is based on the pre-final draft version of the 2020 Work Programme for Research Infrastructures, which is expected to be finalised at the end of June 2019 and adopted by the EC in July 2019.

Call for Expressions of Interest

Institutes and laboratories interested in participating in the new Innovation Pilot on detector technologies are invited to submit Expressions of Interest, using the EoI template. The new project will contain a mixture of activities:

- extensions, albeit not just simple continuations, of activities that are part of the ongoing AIDA-2020 project, with demonstrated added value for the community and well identified novel elements;
- new activities which are not presently supported under AIDA-2020.

For example, silicon, gas and cryogenic detectors, calorimeters, mechanics and cooling, electronics, software, test beam, irradiation and test facility equipment are presently supported under AIDA-2020, whereas other areas such as particle identification and precision timing systems, near detectors for long-baseline neutrino experiments and machine learning could be further topics.

Scope of the EoIs

The EoIs should cover activities aiming at:

- strategic R&D on promising or new technologies for detectors at accelerators, including detectors for future accelerator-based projects;
- upgrades of components and instrumentation of detector infrastructures and test facilities. Infrastructure can be interpreted as facilities, tools and platforms serving common interest for detector development, like in AIDA-2020.

The innovative elements of the proposed activities should be outlined in the EoI. Innovation is to be interpreted in a broad sense and may be incremental.

Generic R&D for testing and demonstration of new ideas (blue-sky research) will be supported by means of a dedicated funding allocated on a competitive basis after the start of the Innovation Pilot.

The EoIs should contain activities which typically correspond to a Task in AIDA-2020, with a budget in the range of 200 kEUR to 600 kEUR (full costs). The grouping of tasks into Work Packages will be done during the proposal preparation phase.

Industry participation

The EC expects involvement of industry, and SMEs in particular, in the Innovation Pilots. Therefore, it is recommended to include, where relevant, European companies in the activities proposed in the EoI. Companies may participate as:

- beneficiaries (with a contribution to joint R&D activities), or as
- sub-contractors (e.g. for engineering runs or ASIC / chip manufacturing)

However, only in the first case the industrial participation may be considered as strengthening the innovation potential of the proposal.

Synergies and complementarities with ATTRACT

Following the instructions given by the EC, the Innovation Pilot on detector technologies should eventually demonstrate synergies and complementarities with the ATTRACT initiative. In order to avoid double funding, projects among the 170 that have been awarded a grant under ATTRACT Phase 1, cannot submit an Expression of Interest for the Innovation Pilot on detector technologies. Projects that aim at developing new detector technologies for use and applications outside of high-energy physics should consider applying to the subsequent phases of ATTRACT.

Matching resources

All participants in the new Innovation Pilot on detector technologies are expected to contribute with matching resources. Typically 1/3 of the full costs will be funded by the EC contribution, and 2/3 by

the matching resources. For industrial beneficiaries, the funding level is expected to be 1/2 EC contribution and 1/2 own resources, with some flexibility, in particular for SMEs. In most cases, the matching resources will be in the form of in-kind man-power contributions.

Content of the EoI template

- **Title:** indicate the main topic with possibly some keywords
- **Participants** (min. 2, max. 6): list the participating institutes, laboratories and industrial partners
- **Contacts:** 1 name + e-mail per participant
- **Description:** (max. 1 page)
 - Brief description of the planned activity and the main results
 - Relevance to future accelerator-based HEP project or an upgrade of existing facility
 - Common interest and added value for the community
 - Role of industrial partners (if any)
 - Innovative aspects: *what is new compared to existing R&D programmes and projects, what is the progress beyond work done in AIDA-2020, what is the level of novelty w.r.t. to the State of the Art, is it a new or an improvement of existing technology, etc.*
- **Deliverables** (max. 3): list the expected deliverable(s) of the proposed activities
- **Budget estimate**
 - Man-power (total number of person-months which are needed to achieve the objectives)
 - Full cost including personnel and other direct costs (typically 1/3 EC contribution, 2/3 matching resources)
 - DO NOT include overheads, which will be added to the EC contribution at the proposal preparation phase

Example:

Total PMs = 30, EC funding = 100 kEUR, matching funds = 200 kEUR, full costs = 300 kEUR

Note: 25% overheads will be added to the EC contribution (100 kEUR + 25 kEUR = 125 kEUR) at the time of the proposal preparation

EoI submission deadline: 15 July 2019

Submissions should be sent to detector-innovation2020@cern.ch

Annex: EoI template (Word document)