

CNID Strategic Planning

WGXX - Group Topic

Convener name 1; Convener name 2

1 Executive Summary (Recommended: one page maximum)

Provide a brief overview of the main findings and strategic recommendations from the group.

2 Findings (Recommended: 4 pages maximum)

2.1 Scientific and Technical Focus Areas

If there is thematic overlap with other WGs, explicitly indicate it in the text. This type of overlap occurs mainly with the Electronics WG; conveners should identify and flag the affected topics.

- Main technological domains and expertise of the participating groups (e.g., tracking detectors, calorimetry, timing, photon detection).
- Main R&D topics pursued by the participating groups (e.g., radiation-tolerant vertexing, 5D calorimetry).
- Main experiments (if any) targeted by the group's R&D (e.g., FCC, Belle-II, DUNE, n_TOF, ISOLDE, FAIR-NUSTAR, AGATA).

2.2 SWOT Analysis

- Identify the SWOT elements in two differentiated categories: (i) *General*: elements shared with other WGs or applicable to the network as a whole; (ii) *WG-specific*: elements that are specific to the WG's thematic area.
- Identify *critical gaps*: Are there any missing skill or infrastructure that is essential to remain competitive and effectively contribute to national or international projects, and which currently cannot be covered by existing groups or facilities? (e.g., ASIC designer, FPGA programmers, high-energy test beam facilities).

Strengths	Weaknesses
<ul style="list-style-type: none">••	<ul style="list-style-type: none">••
Opportunities	Threats
<ul style="list-style-type: none">••	<ul style="list-style-type: none">••

2.3 Infrastructure and Capability Mapping

- Catalogue of instrumentation infrastructures to be listed in the table below. Please describe *laboratories or services* that bundle multiple instruments (e.g., a semiconductor characterization lab, a bonding/assembly platform, a laser lab, a cleanroom service, a computing/simulation service), rather than individual pieces of equipment. Exceptionally, if a very singular/unique instrument is relevant, it can be listed as its own entry.

Infrastructure	External access	Description
Semiconductor laboratory	Yes	Probe stations; LCR meters and sourcemeters; wire bonders; automatic visual inspection machines.

- Access to or participation in open/shared facilities (test beams, irradiation facilities, laser facilities, underground labs, RIB facilities, TOF facilities).

Infrastructure	ICTS?	Type of equipment / service
CNA (Seville) – ICTS-IABA ion microbeam (3 MV Tandem)	Yes	Ion microbeam line for Ion Beam Analysis (IBA) and irradiation, supporting techniques such as micro-PIXE, PIGE, RBS, and IBIC for materials/detector characterization.

- Capabilities and expertise in software frameworks: Europractice, TCAD, CAD, LabVIEW, ANSYS, COMSOL, MCNP, GEANT4, etc.

2.4 Current and Potential National Collaborations

- Existing collaborations among national groups. Explicitly state collaborations with technical groups (technical universities, technological centers, others).
- Existing collaborations (including KTT projects) with the industrial sector and other non-academic actors (e.g., hospitals).
- Identify synergies among groups requiring coordination.
- Identify possibilities for cross-WG or inter-WG teams addressing a specific small or blue-sky R&D project (e.g., a cross-WG team including groups from the WG on calorimetry and the WG on mechanics; an inter-WG team with groups expert in CMOS and hybrid sensors to develop a high-precision spatial and timing telescope).

2.5 Internationalization

- How do national priorities align with:
 - ECFA Detector R&D strategy (e.g., DRD3, DRD6).
 - Roadmaps of the Coordinating Panel for Advanced Detectors (CPAD) of the Division of Particles and Fields, American Physical Society.
 - ApPEC and NuPECC roadmaps.
 - Topics of Horizon Europe or other EU instruments.
- what is the participation in international European R&D projects in the last five years (e.g., AIDAInnova, EUROLABS, DRD, EUROATOM).

3 Recommendations (Recommended: 3 pages maximum)

3.1 Strategic Priorities for the WG (5-Year Horizon)

- Key technologies the WG should focus on. Identify key national contributions to R&D programs and enabling technologies in global projects (e.g., FCC-ee, DUNE, NUSTAR-FAIR, n-TOF, ISOLDE, DONES).
- Activities or capabilities needing consolidation.
- Areas where resources should be directed.
- Recommendations to create cross-WG or inter-WG teams addressing a specific small or blue-sky R&D project.
- Recommendations of mission-oriented task forces to address a specific critical gap identified in the SWOT's analysis. This task force should bring together the necessary national expertise and resources to close the gap. The task force activities could be partially supported through a focused mini-workshop to define scope, milestones, and required infrastructure or training (in connection with recommendations in 3.3)

3.2 Infrastructure and Resource Optimization

- Recommendations for promoting the shared usage of infrastructures.
- Equipment investments required to boost competitiveness.

3.3 Training and Talent Development

- Areas of expertise needed (e.g., highly qualified personnel in microelectronics, cryogenics).
- Suggestions for joint training actions (schools, workshops) or to support already existing actions.
- Supporting mobility of staff, technicians, or students for training.

3.4 Strategic Risks and Mitigation Measures

- Risks to achieving the scientific and technical goals of the WG.
- Mitigation proposals.

3.5 Knowledge and Technology Transfer (KTT)

- Opportunities for knowledge or technology transfer.

3.6 Internationalization

- Actions to promote participation in international R&D projects (e.g., AIDAInnova, EURO-LABS, DRD).
- Actions to promote participation in international decision-making bodies.

3.7 Funding

- How to foster increased funding levels specifically for instrumentation.

3.8 Additional Recommendations

Use this space for any other recommendation.

A Contributing Groups and Contact Points

This appendix lists the groups contributing to the Working Group (WG) and their primary contact points.

Group / Organization	Contact name	Email
Group A	Name Surname	name.surname@example.org
Group B	Name Surname	name.surname@example.org