WP4 Session
Upgrade of Irradiation and Characterization Facilities

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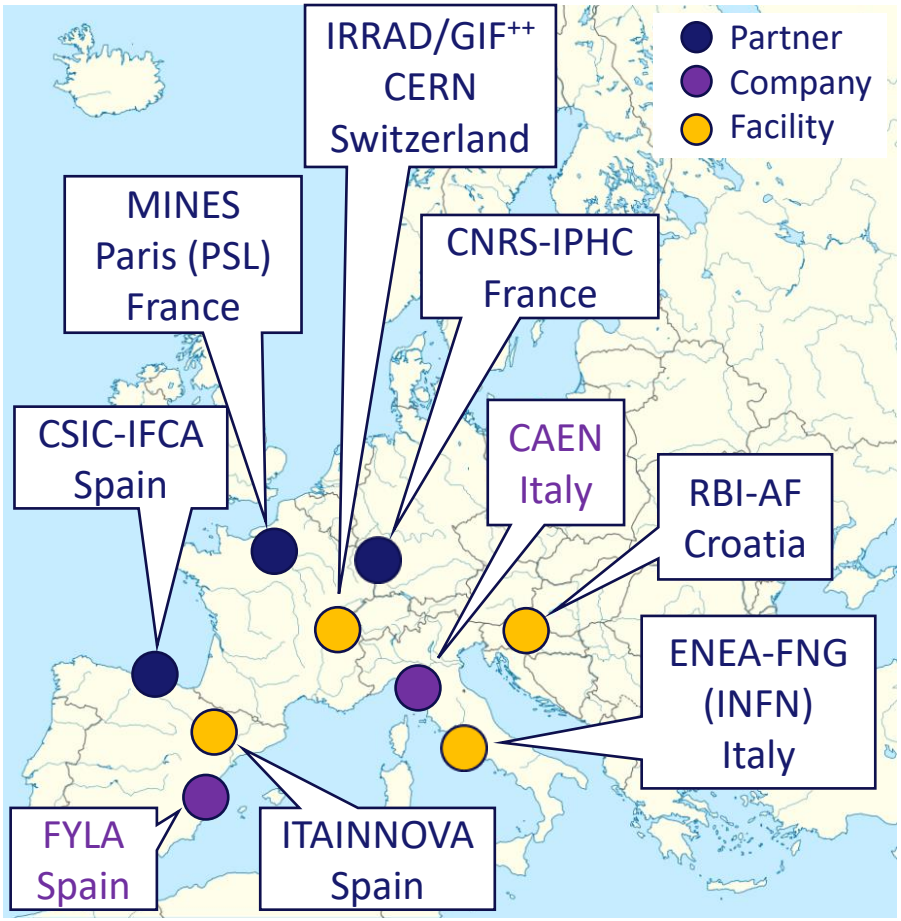
WP4 Goal

- Irradiation and characterization tests required for the next generation of particle detectors demand more accurate and reliable procedures, as well as a higher efficiency in their execution
- ***The main goal of WP4 is to develop & standardize common tools for testing infrastructure to better support the next detector generation***
  - Improve facilities and systems
- The activities are covered by different partners:
  - Academia
  - Industry
  - Research and Technology Organizations (RTO)
- This good combination of partners aims to ensure the readiness of the detector support infrastructure for high TRL levels

WP4 Structure & Partners

- **Task 4.1:** Task Coordination
  (CERN, ITAINNOVA)
- **Task 4.2:** Micro-beam Upgrade at RBI Accelerator Facility
  (RBI)
- **Task 4.3:** Common Tools for Irradiation Facilities QC: Data Management, Traceability, Dosimetry and Activation Measurements
  (CERN, *MINES*(*), INFN, *ENEA*(*), CAEN)
- **Task 4.4:** Design & Development of a New Sensor Characterization System based on TPA-TCT Technique
  (CERN, CSIC-IFCA, FYLA)
- **Task 4.5:** Design & Development of a New Electronics Characterization System for EMC Control
  (ITAINNOVA(+), CNRS-IPHC)



(*) *Collaborating Institute*
(+) RTO

WP4 Deliverables/Milestones

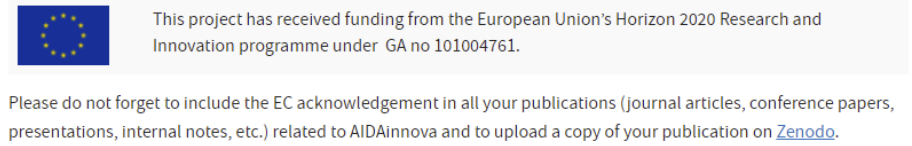
Milestone or Deliverable	Description	Lead Beneficiary	Month
Task 2	Micro-beam upgrade at RBI accelerator facility (RBI-AF)		
MS12	Upgrade RBI-AF infrastructure for detector characterisation, SEE, micro hardness testing	RBI	M23
D4.1	Integrate the data acquisition and control system at RBI-AF	**RBI**	M40
Task 3	Common tools for irradiation facilities Quality Control: Data Management (DM), Traceability, Dosimetry and Activation measurements		
MS13	Define requirements, global architecture and design the extended DM system for ENEA-FNG and CERN-GIF++	CERN	M18
MS14	Extend IDM for FNG, GIF++ and communication with CAEN DigiWaste and CANBERRA Apex-Gamma Platforms	CERN	M36
MS15	Test RFID tagging for irradiation facilities	INFN	M42
D4.2	Evaluate Non-Ionizing Energy Loss (NIEL) of irradiation facilities with dedicated dosimeter structures	**CERN**	M42
D4.3	Deploy full prototype for irradiation facilities data management with sample tagging and spectrometry features	**CAEN**	M45
Task 4	Design & Development of a new sensor characterization system based on TPA-TCT technique		
MS16	Commission a complete TPA-TCT system	FYLA	M23
D4.4	Support the implementation of TPA-TCT systems and contribute to the evaluation of new sensors technologies	**CERN**	M46
Task 5	EMC Characterization		
MS17	Apply TF test bench to FEE prototypes	ITAINNOVA	M23
D4.5	Develop a conductive noise test bench for irradiation facilities	**ITAINNOVA**	M44

- **6 Milestones** (MS): M18 – M42:
  - M18: **MS13** achieved
  - M23: **MS12** & **MS17** submitted on time; **MS16** submitted with slight delay; → all documents being reviewed
- **5 Deliverables** (D): M40 – M46

… + several WP4 contributions for project management reporting.

Task 4.1: WP Coordination

https://aidainnova.web.cern.ch/publications

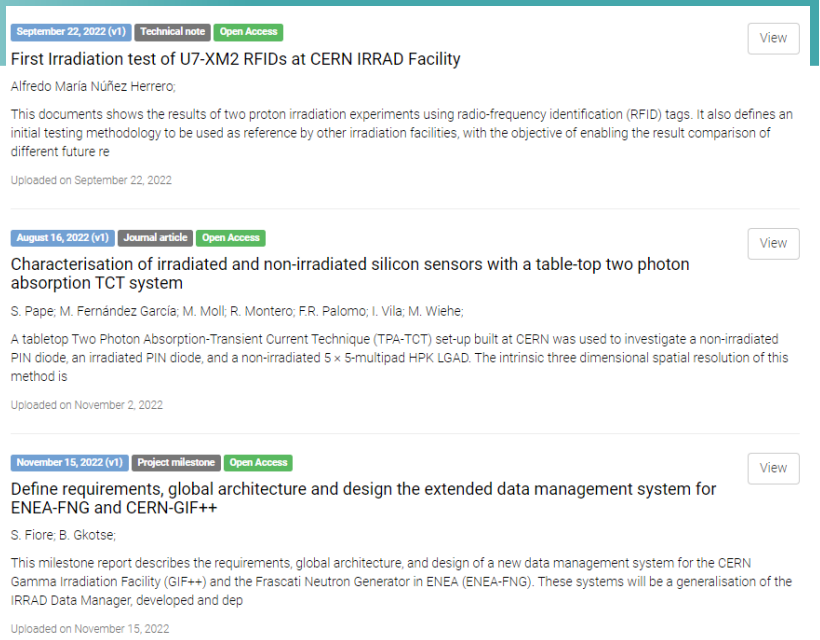


Acknowledgement text

All AIDAinnova publications must include the following acknowledgement text:

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under GA no 101004761.

Please do not forget to include the EC acknowledgement in all your publications (journal articles, conference papers, presentations, internal notes, etc.) related to AIDAinnova and to upload a copy of your publication on Zenodo.



September 22, 2022 (v1) | Technical note | Open Access — View

First Irradiation test of U7-XM2 RFIDs at CERN IRRAD Facility

Alfredo María Núñez Herrero;

This documents shows the results of two proton irradiation experiments using radio-frequency identification (RFID) tags. It also defines an initial testing methodology to be used as reference by other irradiation facilities, with the objective of enabling the result comparison of different future re

Uploaded on September 22, 2022

August 16, 2022 (v1) | Journal article | Open Access — View

Characterisation of irradiated and non-irradiated silicon sensors with a table-top two photon absorption TCT system

S. Pape; M. Fernández García; M. Moll; R. Montero; F.R. Palomo; I. Vila; M. Wiehe;

A tabletop Two Photon Absorption-Transient Current Technique (TPA-TCT) set-up built at CERN was used to investigate a non-irradiated PIN diode, an irradiated PIN diode, and a non-irradiated 5 × 5-multipad HPK LGAD. The intrinsic three dimensional spatial resolution of this method is

Uploaded on November 2, 2022

November 15, 2022 (v1) | Project milestone | Open Access — View

Define requirements, global architecture and design the extended data management system for ENEA-FNG and CERN-GIF++

S. Fiore; B. Gkotse;

This milestone report describes the requirements, global architecture, and design of a new data management system for the CERN Gamma Irradiation Facility (GIF++) and the Frascati Neutron Generator in ENEA (ENEA-FNG). These systems will be a generalisation of the IRRAD Data Manager, developed and dep

Uploaded on November 15, 2022

- 2 publications (Note, Article) for WP4
  - Task 4.3, some in pipeline, other tasks ?
- e-groups to communicate with TLs and WP4 members
- INDICO category to host WP- and Task-related meetings:
  - https://indico.cern.ch/category/13502/ (**11 events**)
- This afternoon WP4 session agenda:
  - https://indico.cern.ch/event/1191719/sessions/454935/#20230424

WP4 Session Agenda

- **WP4 Session:**
  - One (max. 25min + 5min discussion) report per task
  - Coffee break & wrap-up session for further discussions, if needed
- **WP4 Plenary:**
  - Wednesday @ 16:45
  - WP4 Plenary Talk

Mon 24/04 | Tue 25/04 | Wed 26/04 | All days

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15:00

WP4.1: Introduction by WP Coordination — *Federico Ravotti et al.*
https://cern.zoom.us/j/63105238292?pwd=TzZMNEN3c2tvMUdpMDRDbnZyRjc4UT09, Aula 2.7 15:30 - 15:40

WP4.2: Micro-beam Upgrade at RBI Accelerator Facility — *Georgios Provatas et al.*
https://cern.zoom.us/j/63105238292?pwd=TzZMNEN3c2tvMUdpMDRDbnZyRjc4UT09, Aula 2.7 15:40 - 16:10

16:00

session break
https://cern.zoom.us/j/63105238292?pwd=TzZMNEN3c2tvMUdpMDRDbnZyRjc4UT09, Aula 2.7 16:10 - 16:40

WP4.3 - Common Tools for Facilities QC: Data Management, Traceability, Dosimetry & Activation Meas. — *Blerina Gkotse*
https://cern.zoom.us/j/63105238292?pwd=TzZMNEN3c2tvMUdpMDRDbnZyRjc4UT09, Aula 2.7 16:40 - 17:10

17:00

WP4.4 - Design & Development of a New Sensor Characterization System based on TPA-TCT Technique — *Michael Moll*
https://cern.zoom.us/j/63105238292?pwd=TzZMNEN3c2tvMUdpMDRDbnZyRjc4UT09, Aula 2.7 17:10 - 17:40

WP4.5 - Design & Development of a New Electronics Characterization System for EMC Control
Fernando Jose Arteche Gonzalez

18:00

WP4 - Session Wrap-up — *Federico Ravotti et al.*
https://cern.zoom.us/j/63105238292?pwd=TzZMNEN3c2tvMUdpMDRDbnZyRjc4UT09, Aula 2.7 18:10 - 18:30