

Status and Outlook of WP04

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<https://indico.cern.ch/e/radnext-2022>



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WP04 structure and members

- In this WP, the objective is to define long-term scientific, technological and industrial needs for upgrades of the current and future irradiation facilities
 - **4 Tasks** (Task 4.1 = Management)



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WP04-NA3 Main tasks

- Three main technical tasks:
 1. **Definition of the key performance parameters matrix for the evaluation and identification of the limitations and challenges in long-term**
 2. **Investigate innovative future solutions for current irradiation facilities**
 3. **Design study of new irradiation facilities**

Main objective: identify limiting factors of current irradiation facilities and propose solutions for the upgrade of existing facilities and the development of future irradiation ones

WP04-NA3 Task 4.2 : Key performance parameters for current and new facilities



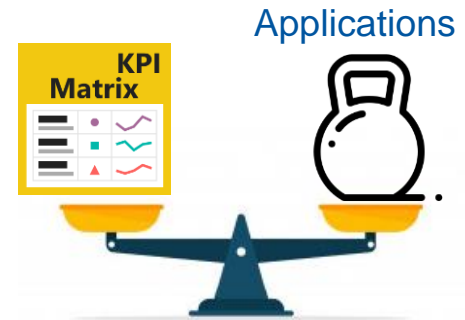
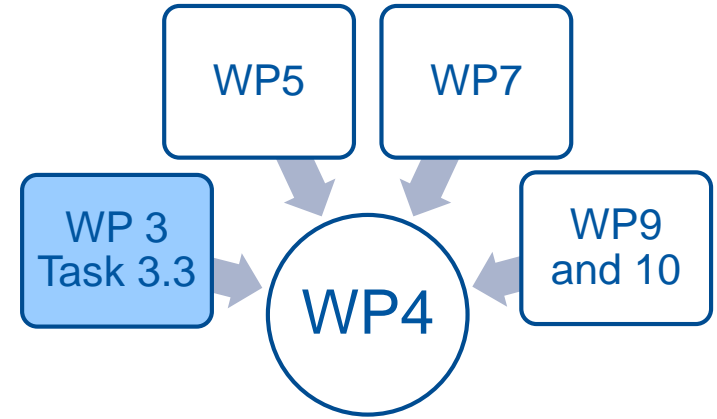
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- ❑ **Task Leader: Federico Ravotti (CERN)**
- ❑ **A fellow will start from the 1st of October**

- ➔ Identify technological limiting factors for available irradiation test facilities based on current industrial and scientific requests;
- ➔ Identify operational issues and challenges for radiation testing coping with different applications and environments;
- ➔ Identify new facilities currently not adapted for radiation testing but that can be used for components qualification and system-level testing;

WP04-NA3 Task 4.2 : Identification

- Strong synergies with all the WPs in order to retrieve facilities information and feedbacks
 - In particular with WP3 : Consolidation of the radiation test facilities database
 - Extraction of important parameters and features
 - Weighting them with respect to the applications in a consolidated way within RADNEXT



WP04-NA3 Task 4.3 : Future solutions for current irradiation facilities



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ELI Beamlines



Task Leader: Federico Ravotti (CERN) and Roberto Versaci (ELI)

- ➔ Study solutions for increasing the usability of the existing facilities, including virtual access;
- ➔ Propose techniques and methods to overcome technological bottlenecks in the short term;
- ➔ Propose long-term strategic plans for facilities upgrades and user support;
- ➔ Guide research groups and facilities coordinators in their efforts to fulfill the long-term requirements that the applications and the technology impose.

WP04-NA3 Task 4.4 : Design study of new irradiation facilities

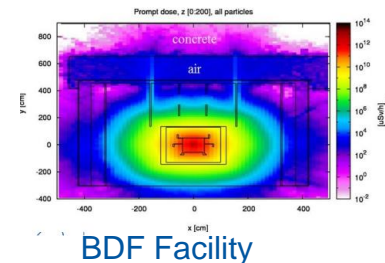


Task Leader: Federico Ravotti (CERN) and Roberto Versaci (ELI)
A fellow at ELI Beams will start on the 1st of July

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ELI Beamlines

- Study design for innovative beam facilities
- Study solutions for future infrastructure:
- Proof of Concept: Beam Dump Facility
 - Foreseen to be located at the North Area of the SPS
 - Beam momentum of 400 GeV/c
 - Possibility of a facility CHARM-like
- Laser-based facility in their infancy for radiation production
- Increased interest because of progress in operational parameters and beam availability



WP04-NA3 Task 4.1 : Management

- Still on track with the planned deliverables
- Expected the D4.1 at the end of 2022

D4.1	Report on key performance parameters and limiting factors for current facilities	WP4	CERN, ELI	R	PU	20
D4.2	Updated international irradiation facility compendium	WP4	CERN	R	PU	20
D4.3	Report on the solutions to overcome the technological and accessibility limits for present facilities, including analysis on virtual and remote irradiation access	WP4	CERN	R	PU	30
D4.4	Design report on advanced technologies to be implemented in future beam and mixed-field irradiation facilities.	WP4	CERN	R	PU	42

Thanks for your attention!



Image Source: CERN