

WP8 – Improvement and equipment of irradiation and test beam lines

Introduction

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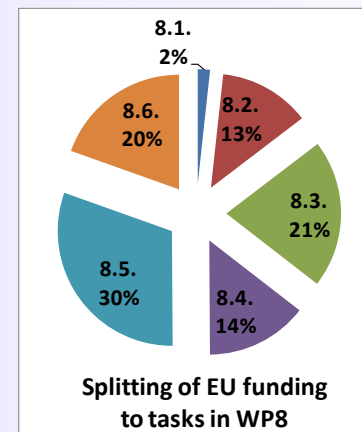


• WP 8: Some numbers

- 18 participants (39 different institutes)
- 11 deliverables and 10 milestones
- Total Cost of 7.8 M€ Euro with EU funding of 2.3 M€
- Total of 546 Person-months committed

• WP 8: Six tasks

- **8.1. Coordination and Communication**
- **8.2. Test beams infrastructure at CERN and Frascati**
 - 8.2.1. CERN: Provide design study for low energy particle beam line
 - 8.2.2. Frascati: Characterization of BTF beam line, beam monitoring system
- **8.3. Upgrade of CERN PS proton and neutron irradiation facilities**
 - 8.3.1 Facilities improvement and upgrade & 8.3.2. Facilities common infrastructure
- **8.4. Qualification of components and common database**
 - 8.4.1. Review existing data, 8.4.2. establish test program, 8.4.3. set up web based database
- **8.5. General infrastructure for test beam and irradiation lines**
 - 8.5.1. Commission and operate beam tracking telescope
 - 8.5.2. Feasibility studies for neutrino detectors; T ASD and MIND prototypes
 - 8.5.3. GIF++ (Gamma Irradiation Facility) user infrastructure
- **8.6. Coordination of combined beam tests and common DAQ**
 - 8.6.1. Common test beam experiments at CERN and DESY, EDMS system at DESY
 - 8.6.2. Common DAQ; Merge EUDAQ & CALICE DAQ software and develop new hardware



- **Appointment of Co-leader for Workpackage 8**
 - Giovanni Mazzitelli (INFN – LNF Laboratori Nazionali di Frascati)
proposed to become Co-leader of Workpackage 8
(application submitted for approval in Governing Board on Friday)
- **New leader of task “8.6.2. Common DAQ”**
 - David Cussans (University of Bristol) replacing Emlyn Corrin (formerly Univ. Geneve)
- **Interim Activity Report for 1st year submitted to AIDA coordination office**
 - Good progress reported for all sub-tasks:
5 tasks ‘on schedule’, one task with ‘minor delay’
 - Milestones and Deliverables of first year:
 - *Milestone MS27 “**Specification for beam line fixed**” in task 8.2.1 reached and documented in CDS document “AIDA-MS27”*
 - *Deliverable 8.2. “**Definition of test program for radiation testing**” in task 8.4. delayed, but expected to be ready for publication within one month from now.*
 - *Many thanks to all task leaders for their contributions!*



- WP 8 – Responsibilities

- List of appointed task leaders (for some tasks responsibility given to sub-task leaders)

8.1.	Coordination and Communication	Co-leader: Giovanni Mazzitelli (INFN LNF) Michael Moll (CERN)
8.2.	Test beams infrastructure at CERN and Frascati	
	8.2.1. CERN	Leader: Ilias Efthymiopoulos (CERN)
	8.2.2. Frascati	Leader: Giovanni Mazitelli (INFN-LNF)
8.3.	Upgrade of PS proton and neutron irradiation facilities at CERN	Leader: Michael Moll (CERN)
	8.3.1. <i>Improvement of existing irradiation facilities and evaluation of upgrade proposals</i>	
	8.3.2. <i>Common infrastructure for the facilities</i>	
8.4.	Qualification of components and common database	Leader: Simon Canfer (STFC)
	8.4.1. <i>Review existing data and experience from LHC, define test program</i>	
	8.4.2. <i>Define test procedures and conduct tests on selected components</i>	
	8.4.3. <i>Set-up and publish a WEB database compiling the information above</i>	
8.5.	General infrastructure for test beam and irradiation lines	
	8.5.1. <i>Commission and operate beam tracking telescope</i>	Leader: Ingrid Gregor (DESY)
	8.5.2. <i>TASD and MIND</i>	Leader: Paul Soler (STFC)
	8.5.3. <i>GIF++ user infrastructure</i>	Leader: Davide Boscherini (INFN Bologna)
8.6.	Coordination of combined beam tests and common DAQ	
	8.6.1. <i>Common test beam experiments at CERN and DESY</i>	Leader: Ties Behnke (DESY)
	8.6.2. <i>Common DAQ</i>	Leader: David Cussans (University of Bristol)

- **Publications in AIDA CDS**
- **WP8.2.**
 - A. Blondel, I. Efthymiopolous, P. Soler, (2012) Milestone Report: Specification of Beamline Fixed (Milestone MS27); <https://cdsweb.cern.ch/record/1430746>; AIDA-MS27.
- **WP8.3.**
 - E. Lebbos, M. Brugger, M. Calviani, L. Gatignon, M. Glaser, M. Moll, East Area Irradiation Test Facility: Preliminary FLUKA calculations, CERN-ATS-Note-2011-082; AIDA-NOTE-2012-001, <http://cdsweb.cern.ch/record/1385034>
- **WP8.6.**
 - Klempt, Wolfgang; Van der Kraaij, Erik, ANL visit for exploring possibility of a tungsten RPC DHCAL test setup; AIDA-REP-2011-004; <http://cdsweb.cern.ch/record/1387550>
- **So far ‘only’ 3 publications.**
 - Activities just started – Clearly more publications expected for later stage
 - But, I assume that there are some more publications or notes that could be added to the CDS system as they relate to activities performed within AIDA.
- **Please, add your publications to the CDS system as AIDA Documents!**
(even if they have already been published elsewhere!)

WP8 milestones

MS27	Specification for beam line fixed	CERN (1)	m12 <u>Jan 2012</u>	Final specification for the design study in task 8.2. (Task 8.2.1)	o.k.
MS28	Design of T ASD and MIND	STFC (31)	m20 <u>Sept.2012</u>	Design for deliverable D8.11 (Task 8.5.2)	
MS29	Design of GIF++ infrastructure	INFN (18)	m20 <u>Sept.2012</u>	Detailed design ready for the cosmic ray tracker, the radiation measurement facility and the DCS (Task 8.5.3)	
MS30	Definition of test procedure and specification	STFC (31)	m20 <u>Sept.2012</u>	Common agreement of how tests for materials will be conducted and which components to test (Task 8.4)	
MS31	Installation of new equipment	CERN (1)	m26 <u>March 2013</u>	Movable irradiation tables operational (Task 8.3.2) CERN, UK	
MS32	First test results on selected components	STFC (31)	m26 <u>March 2013</u>	Intermediate result with respect to D8.7 (Task 8.4)	
MS33	Installation of T ASD and MIND	STFC (31)	m36 <u>Jan.2014</u>	Installation at CERN for deliverable D8.11 completed (Task 8.5.2)	
MS34	Test beam, EDMS and DAQ commissioning	DESY (9)	m36 <u>Jan.2014</u>	Intermediate stage for deliverable D8.8 (Task 8.6. 1&2)	
MS35	Installation of infrastructure	(34)	m37 <u>Feb. 2014</u>	Cold boxes and Fluence monitoring system operational (Task 8.3.2) CERN, UK, VU	
MS36	Commissioning of tracking telescope	DESY (9)	m44 <u>Sept.2014</u>	Start of operation of telescope delivered in D8.5 (Task 8.5.1)	

D8.1	Experience at LHC and definition of test programme: Based on the experience and expectations for the LHC test programme is defined and described in a document.	[month 12] Jan. 2012	Task 8.4	<u>Delayed!!</u>
D8.2	Publication of specification documents for the DAQ and for the central documentation facilities: Description of common infrastructures and interfaces for the linear collider test beams.	[month 20] Sept. 2012	Task 8.6. 1&2	
D8.3	Design study on low energy beamline: Design and implementation study on a low energy beam to the range of 1 (or possibly less) to 10 GeV	[month 26] March 2013	Task 8.2.1 CERN	
D8.4	Upgrade scenarios for irradiation lines: Design study on new or upgraded irradiation facilities at CERN based on slow extracted proton beams. Containing a proton and – if feasible – a mixed field irradiation facility.	[month 37] Feb. 2014	Task 8.3.1 CERN	
D8.5	Installation of tracking telescope: The tracking telescope is installed in the beam line and operational.	[month 40] May 2014	Task 8.5.1	
D8.6	Detector and detector control system operational: Cosmic ray tracker including front end electronics, power and gas systems. Detector for radiation measurement. Detector Control System monitoring the tracker working and the environment parameters.	[month 44] Sept. 2014	Task 8.5.3	
D8.7	Populated data base of components qualification: The materials and components database is online and populated with data.	[month 46] Nov. 2014	Task 8.4.1.	
D8.8	DAQ performance and test beam utilization: Report on the performances and use of the integrated DAQ setup, and of the common test beam facilities at DESY and CERN	[month 46] Nov. 2014	Task 8.6 1&2	
D8.9	Performance of beamline and infrastructure: Report on performance of beamline and infrastructure including GEM based beam profile and tracking detector	[month 48] January 2015	Task 8.2.2 Frascati	
D8.10	Commissioning of new facility equipment: Report on commissioning of shuttle systems, movable irradiation tables with cold boxes and a fluence monitoring system based on a microwave absorption technique in silicon.	[month 48] January 2015	Task 8.3.2 CERN, UK, VU	
D8.11	Infrastructure performance and utilization: TASD and MIND are constructed and tested for their performance.	[month 48] Jan. 2015	Task 8.5.2	

- **Wednesday 9:00 to 10:30 (Seminar 2)**
 - 8.2.2. Test beam infrastructure at Frascati National lab
 - 8.3. CERN EAST HALL irradiation facilities
- **Wednesday 11:00 to 12:00 (Seminar 2)**
 - 8.2.2. Low energy particle beam line at CERN
 - 8.5.2. Feasibility studies for neutrino detectors; T ASD and MIND prototypes
- **Thursday 9:00 to 10:30 (Seminar 2)**
 - 8.4. Qualification of components and common database
 - 8.5.3. GIF++ user infrastructure
- **Thursday 11:00 to 13:00 (Seminar 2)**
 - 8.6.1. Coordination and support of common test beam experiments at DESY & CERN
 - 8.6.2. Common DAQ – combined with WP9 discussions
- **Friday 10:30 -- Summary of WP8 in the Plenary Session**
 - *I would appreciate a 1-2 slide summary of your presentations*