

AIDA Final Project meeting

11 Dec 2014

Transnational Access to CERN (WP6)

Note 1: Due to the LS1, the TA activities at CERN were completed by end of 2012

Note 2: All available EC budget in WP6 (150 kEUR) has been used for user support (travel and subsistence)

Task 6.1 CERN PS and SPS test beams

- The CERN PS and SPS test beams provide particle beams in the energy range from 1 GeV to ~350 GeV.
- Several general purpose test beam lines and their well-equipped experimental areas were available for transnational access under AIDA.

Task 6.2 CERN East Hall irradiation facilities

- The facilities use two secondary beams, extracted from the PS proton accelerator.
- Different kinds of irradiations are provided, e.g.
 - Direct exposure to 24 GeV/c protons
 - Mixed field irradiations (mainly 1 MeV neutrons)

Task 6.1 CERN PS and SPS test beams

CERN-T-2011-01	Belle II Silicon Vertex Detector
CERN-T-2011-02	CALICE T3-B Time structure of hadronic showers in Tungsten and Steel-
CERN-T-2011-03	ATLAS-IBL Beam tests of the silicon pixel sensors for the Insertable B-layer for ATLAS
CERN-T-2011-04	CALICE W-AHCAL test-beam
CERN-T-2011-05	ATLAS Planar Pixel Upgrade
CERN-T-2011-06	LHCb VELO Upgrade Testbeam
CERN-T-2011-07	ATLAS BCM
CERN-T-2011-08	TIME PIX Intregation of different readout systems
CERN-T-2011-09	ATLAS Planar Pixel Upgrade
CERN-T-2011-10	ATLAS Diamond Beam Monitor
CERN-T-2011-11	BGO detector measurements of MeV-GeV radiation emission
CERN-T-2011-12	CALICE SDHCAL
CERN-T-2011-13	CMS-SIBT Testing of CMS tracker upgrade prototype sensors made of different silicon materials
CERN-T-2012-01	SPEC
CERN-T-2012-02	CALICE-MICROMEGAS
CERN-T-2012-03	FastRPC
CERN-T-2012-04	CMS Calorimeter Upgrade Test-Beam
CERN-T-2012-05	ATLAS Planar Pixel Upgrade
CERN-T-2012-06	A SMALL WHEEL
CERN-T-2012-07	AIDA TimePix Telescope and LHCb VELO Upgrade
CERN-T-2012-08	CALICE W-DHCAL test beam
CERN-T-2012-09	RPC-FTT
CERN-T-2012-10	AIDA TimePix Telescope and LHCb VELO Upgrade

Task 6.1 CERN PS and SPS test beams (cont'd)

CERN-T-2012-11	3D PIXEL
CERN-T-2012-12	ATLAS Insertable B-layer project
CERN-T-2012-13	ATLAS Diamond Beam Monitor
CERN-T-2012-14	CBM GEM
CERN-T-2012-15	CALICE at CERN with the WDHCAL and WAHCAL
CERN-T-2012-16	μ-strip detectors studies with the ALIBAVA telescope
CERN-T-2012-17	ATLAS BCM
CERN-T-2012-18	DEPFET
CERN-T-2012-19	ATALS PPU
CERN-T-2012-20	3DPIXEL-AUG
CERN-T-2012-21	CBM
CERN-T-2012-22	RD42DD
CERN-T-2012-23	PSPS R&D
CERN-T-2012-24	LHCb VELO Upgrade (Glasgow)
CERN-T-2012-25	LHCb VELO Upgrade (Santiago de Compostela)
CERN-T-2012-26	LHCb VELO Upgrade (Nikhef)
CERN-T-2012-27	LHCb VELO Upgrade (Manchester)
CERN-T-2012-28	LHCb Upgrade (Oxford)

Task 6.2 CERN East Hall irradiation facilities

CERN-I-2012-01

CMS HPK

CERN-I-2012-03

AIDA Irrad

CERN-I-2012-02

RD50 Irradiation

CERN-I-2012-05

RPC-FTT

CERN-I-2012-04

AIDA GIF++

Task 6.1 CERN PS and SPS test beams

	User-projects		Users supported	Units of access (8-hour shift)
	Eligible	Selected		
TA Granted (M1-M48)	39	36	160	1672
TA Planned in Annex 1	20		160	600

Task 6.2 CERN East Hall irradiation facilities

	User-projects		Users supported	Units of access (8-hour shift)
	Eligible	Selected		
TA Granted (M1-M48)	5	5	23	264
TA Planned in Annex 1	20		40	200

Test beams campaign in 2011

- The larger fraction of the TA users were from the LHC experiments (ATLAS, CMS, LHCb and ALICE) for studies concerning future detector upgrades and new technologies for beam monitoring.
- Another important user was the RD42 (Diamond detectors) collaboration.
- Studies for applications at future accelerators included CLIC/ILC (various types of CALICE calorimeters) and Belle II (vertex detector DEPFET).
- Example for a project outside the AIDA community was the muon tracker (CBM GEM) of the compressed baryonic matter experiment at the FAIR facility in Darmstadt.

Test beams campaign in 2012

- The largest fraction of user projects were related to the ATLAS and LHCb experiments:
 - measurements on BCM modules and newly developed diamond beam monitor modules were performed;
 - highly irradiated planar silicon pixel sensors and special edge designs were studied;
 - the KarTel telescope and slim edge pixel detectors were successfully tested;
 - a low-mass cooling option for the LHCb VELO upgrade using evaporative CO₂ was investigated.
- Studies for micromegas detectors, novel 3D devices, RICH prototypes, TRD and TOF subsystems, and the performance of pixel detectors equipped with Medipix3 electronics were also carried out.

Irradiations in 2012

- Sensor materials and electronics for the ATLAS and CMS experiments were irradiated in view of the luminosity upgrade of the LHC.
- RD50 tested radiation hard semiconductor devices for very high luminosity colliders.
- RADFET sensors to be used for the infrastructure needed to operate and test detectors at the CERN GIF++ facility were irradiated.

AIDA (Feb 2011-Jan 2015)

- The TA activities at CERN were concentrated in 2011 and 2012 and completed before LS1.
- The access units delivered surpassed the number committed in the Grant Agreement.
- The demand for user support largely exceeded the available EC funding, especially for test-beams.
- The administrative burden and complexity for the reimbursement of the travel costs to the users and/or their institutes turned out to be much higher than foreseen, and only ~70% of the AIDA-TA users actually received EC funding.

After AIDA we hope to have AIDA-2020 starting in 2015

- CERN will provide TA to test-beams, irradiation facilities and GIF++.
- The user reimbursement mode will be simplified and the administrative overhead should decrease.
- The EC funding for TA user support is significantly higher than in AIDA, so we expect to support many more users from particle physics and other communities.