

Infrastructure for advanced calorimeters

WP14 Final Face-to-Face Meeting

F. Simon, R. Pöschl

AIDA-2020 WP14, F2F Meeting Feb. 13, 2020



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654168.

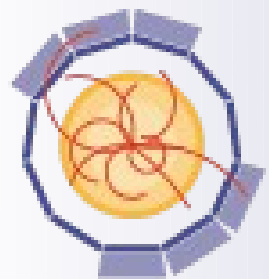
- **14.1** Scientific coordination (MPP-MPG, CNRS-LAL)
- **14.2 Test infrastructure for innovative calorimeters with optical readout**
 - 14.2.1** Test benches for characterisation of organic and inorganic scintillator material (CERN [CERN, RINP, Brunel], INFN [Torino, Roma, MiB, UNIMiB], VU, ETHZ)
 - 14.2.2** Test benches for the characterisation of highly granular calorimeter elements with scintillator and SiPM readout (JGU, DESY [Uni Heidelberg], MPG-MPP, UiB, IPASCR)
- **14.3 Test infrastructure for innovative calorimeters with semiconductor readout**
 - 14.3.1** Assembly and QA Chain for silicon-based ECALs (CNRS [LLR, LAL, LPNHE], CERN [CERN, Imperial])
 - 14.3.2** Infrastructure for very compact Tungsten based calorimetry (DESY [Zeuthen], AGH-UST, TAU [Tel Aviv, IFJPAN], Vinca)
- **14.4 Readout systems for innovative calorimeters**
 - 14.4.1** LC Calorimetry specific DAQ interfaces (IPASCR, CNRS [IPNL, LLR], DESY [Hamburg])
 - 14.4.2** Low Power Readout & Monitoring systems (CNRS [LAL, IPNL], DESY [Hamburg, Uni Wuppertal])
- **14.5 Mechanical and thermal tools for innovative calorimeters**
 - 14.5.1** Precision mechanics for calorimeter structures (CIEMAT [Madrid])
 - 14.5.2** Infrastructure to evaluate thermal properties of calorimeter structures (CNRS [LPSC], DESY [Hamburg])

WP14 Participants

- Beneficiaries

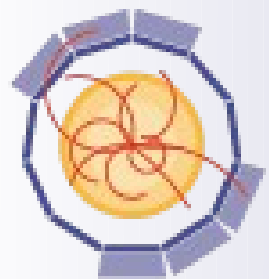
- AGH-UST
- CERN
- CIEMAT
- CNRS - IPNL, LAL, LLR, LPNHE, LPSC
- DESY
- ETHZ
- INFN - MI, RTV, TO
- IPASCR
- JGU
- MPG-MPP
- TAU
- UiB
- VU

- Associated Partners - receive funding through beneficiaries
 - CERN: Brunel, Imperial, Minsk
 - DESY: U HD, U W
 - INFN: UniMIB
 - TAU: IFJPAN



	Title	Lead Ben.	Task	Month
D14.1	Fibre test benches	CERN	14.2.1	47
D14.2	Performance of test infrastructure for highly granular optical readout	MPG-MPP	14.2.2	40
D14.3	Advanced assembly chain for Si calorimeters	CNRS	14.3.1	36
D14.4	Very compact calorimeters	AGH-UST	14.3.2	57
D14.5	Common running of calorimeter prototypes	DESY	14.4.1	36
D14.6	Updated readout system	CNRS	14.4.2	44
D14.7	Electron beam welding demonstrator	CIEMAT	14.5.1	42
D14.8	Large leak-less system, thermal model	DESY	14.5.2	36

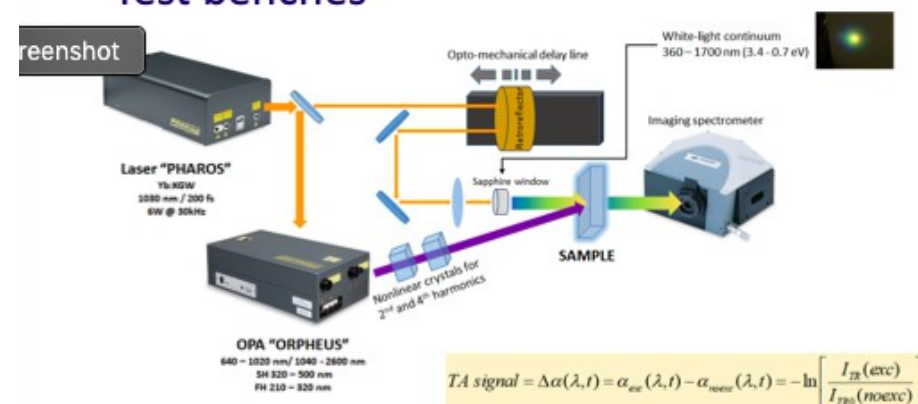
- 8/8 of deliverables completed
- Deliverable 14.4 completed on-time at the end of January 2020
- **Mission accomplished !** Well almost ...



AIDA²⁰²⁰

WP 14 – What has been achieved ?

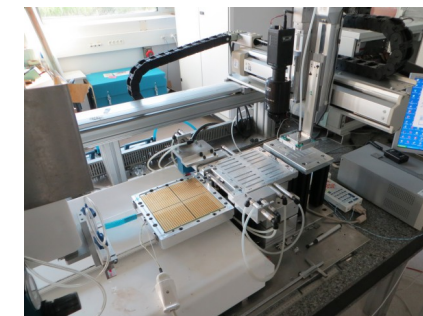
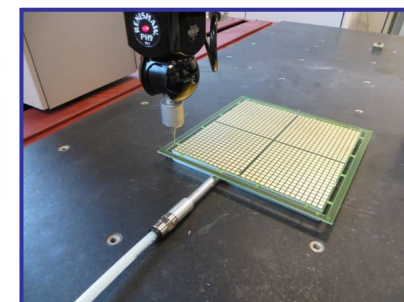
Test benches



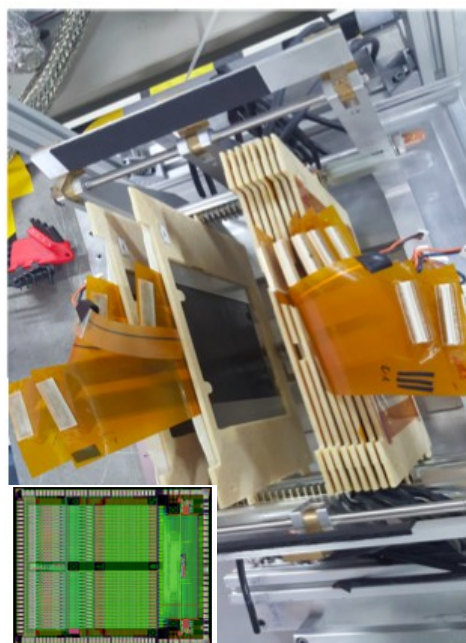
Cosmic and tile teststands



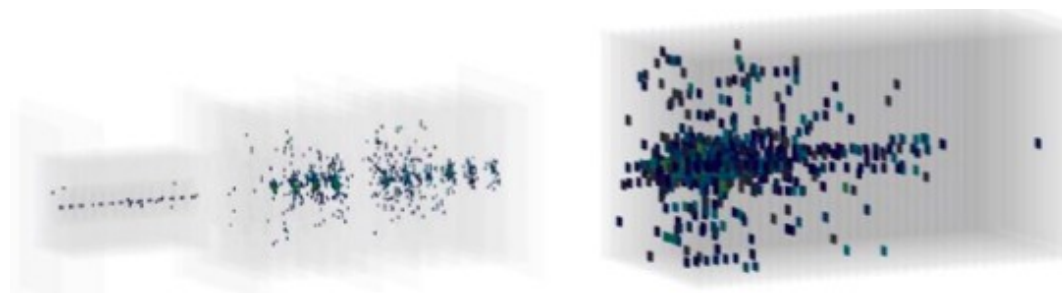
Detector assembly tools



Compact calorimetry



Common beam tests



Compact r/o



Electron beam welding



Cooling system(s)

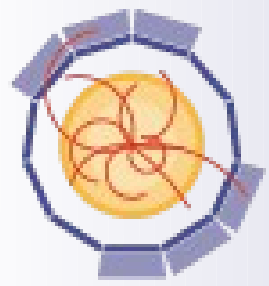


- **Mission accomplished ?!**
 - Well, almost ...
- 4th WP14 Face-to-Face Meeting on 13/2/20 at CERN (This meeting)
- P3 Periodical report 5/2018 – 4/2020 (covers D14.1, D14.2, D14.4, D14.6, D14.7)
- AIDA2020 Final Report
- Both reports are due by the end of June 2020
 - Essentially Frank's and my job but stay tuned for questions

WP	No. of journal publications	No. of conference/ workshop proceedings	Other publications	Total
WP2	1	0	7 press articles 11 "On track" newsletter issues 1 Academic dissertation	20
WP3	5	1	7 presentations 3 scientific notes	16
WP4	2	2	1 presentation 1 poster	6
WP5	2	2	7 presentations 2 scientific notes 2 posters	15
WP6	23	5	1 poster	29
WP7	20	10	13 presentations 1 scientific note 2 posters	46
WP8	4	3	0	7
WP9	2	0	9 presentations 1 scientific note 2 poster	14
WP13	5	5	4 presentations 3 posters	17
WP14	16	11	18 presentations 3 scientific notes 2 posters	50
WP15	4	8	20 presentations 10 scientific notes 13 posters	55
TOTAL	84	47	144	275
TARGET	60	50	-	180

- The publication record is good
... We are the 3rd best in the scoreboard with 41 pubs out of which 16 journal publications
- **We should finish on first place !!!**
- Expect more publications as we reach the end of AIDA2020
- Please send us your publications since Annual Meeting at Oxford
... in particular Journal Publications
... prefer OpenAccess Journals
Contact us in case of doubt where to publish
- AIDA2020 offers nice tool for publication query
<https://cds.cern.ch/collection/AIDA-2020?ln=en>

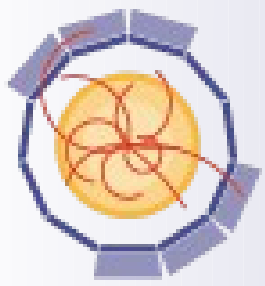
Source: <http://aida2020.web.cern.ch/science/publications>



AIDA²⁰²⁰

AIDA2020 Final Annual Meeting

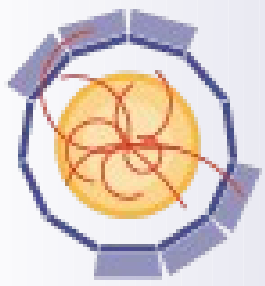
- 28/4/20 – 30/4/20 at Valencia
 - <https://indico.cern.ch/event/858784/overview>
- Registration is open
- 2 hours WP14 session
 - 28/4/20 4.30pm – 6.30pm
 - Mainly TL reports
 - Stay tuned for further instructions
- Mark your agendas



AIDA²⁰²⁰

Towards AIDAInnova

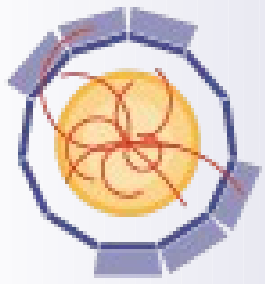
- ***The information is based on the Work Programme for 2018-2020, 2.July 2019***
 - The actual Call for the Innovation Pilots has been published in November
- Topic: **Innovation for Detector Technologies for Accelerators**
- Expected EC funding: **up to 10 M€** , Proposal **Deadline March 17, 2020**
- Objective:
 - Support **research infrastructure networks** developing and implementing a **common strategy/roadmap** including technological development required for **improving their services** through **partnership with industry**;
- Support **incremental innovation** and **cooperation with industry and academia** in areas such as scientific instrumentation
- Target : **Advanced Integrated Activities (i.e. the AIDA-2020 community)**, which have reached a high level of integration and can **focus on joint research developments**, here instrumentation for particle physics at accelerators
- Workpackage 8 on Calorimeters and ParticleID
 - WP Coordinators K. Krüger, R. Ferrari, R.P.
 - Many/most groups of AIDA2020 WP14 are part of WP8 but also of WP7
 - Call for EoI was heavily oversubscribed, (if at all) expect less funding than for AIDA2020
- In phase of proposal writing



AIDA²⁰²⁰

AIDAinnova WP8 – The big picture

- 3 Tasks (6 subtasks)
 - Towards next generation highly granular calorimeters
 - Towards next generation of light based highly granular calorimeters and fast timing detectors
 - Innovative solid-state light sensors and high-granular dual-readout fibre-sampling calorimetry
- 20 participants from 12 countries



AIDA²⁰²⁰

AIDA2020 WP14 – Towards the finishing line

- We are almost done ...
- We would like to thank you very much for the excellent cooperation in the past nearly five years
- It has been a pleasure to coordinate this workpackage