MC-PAD MIDTERM REVIEW

LJUBLJANA, 28 SEPTEMBER 2010

Christian Joram

Our mission:

MC-PAD is a multi-site network that provides excellent training opportunities to young researchers in the field of radiation detectors for the next generation of particle physics experiments and other applications.

9 academic partners, 5 associated partners (3 industrial)
12 research projects
1 - 3 ESR/ERs per project, 22 in total

MC-PAD projects

	Project Title
P1	Radiation Tolerant Mini-strip Tracking Detectors
P2	Hybrid Pixel Detectors
P3	Radiation Hard Crystals / 3D Detectors
P4	Micro Pattern Gas Detectors
P5	TPC with MPGD Readout
P6	Very Forward Calorimetry
P7	Advanced Photodetectors
P8	Photodetectors for High-B Fields
P9	Front-end Electronics for Hybrid Pixel Detectors
P10	Monolithic Detectors
P11	Front-end Electronics
P12	Optimization of Monte Carlo Tools and Comparison with Benchmark Data

MC-PAD project leaders

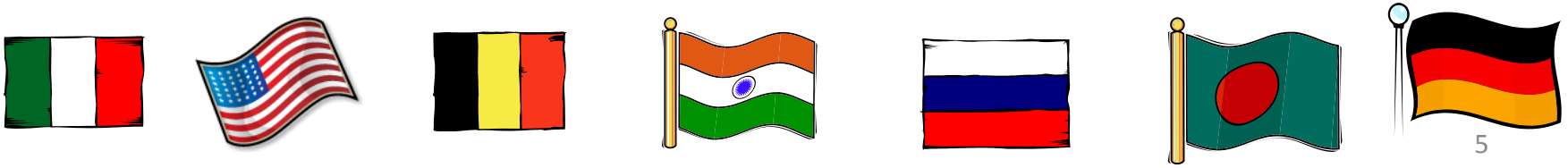
P1	Michael.Moll@cern.ch
P2	Tilman.Rohe@psi.ch
P3	Robert.Klanner@desy.de, Doris.eckstein@desy.de
P4	Leszek.Ropelewski@cern.ch
P5	Ties.Behnke@cern.ch
P6	Wolfgang.Lohmann@desy.de
P7	Christian.Joram@cern.ch
P8	Samo.korpar@ijs.si
P9	d77@nikhef.nl (Els Koffeman)
P10	Idzik@ftj.agh.edu.pl
P11	C.J.Schmidt@gsi.de
P12	Stefano.Miscetti@lnf.infn.it

Our 21 MC-PAD Researchers

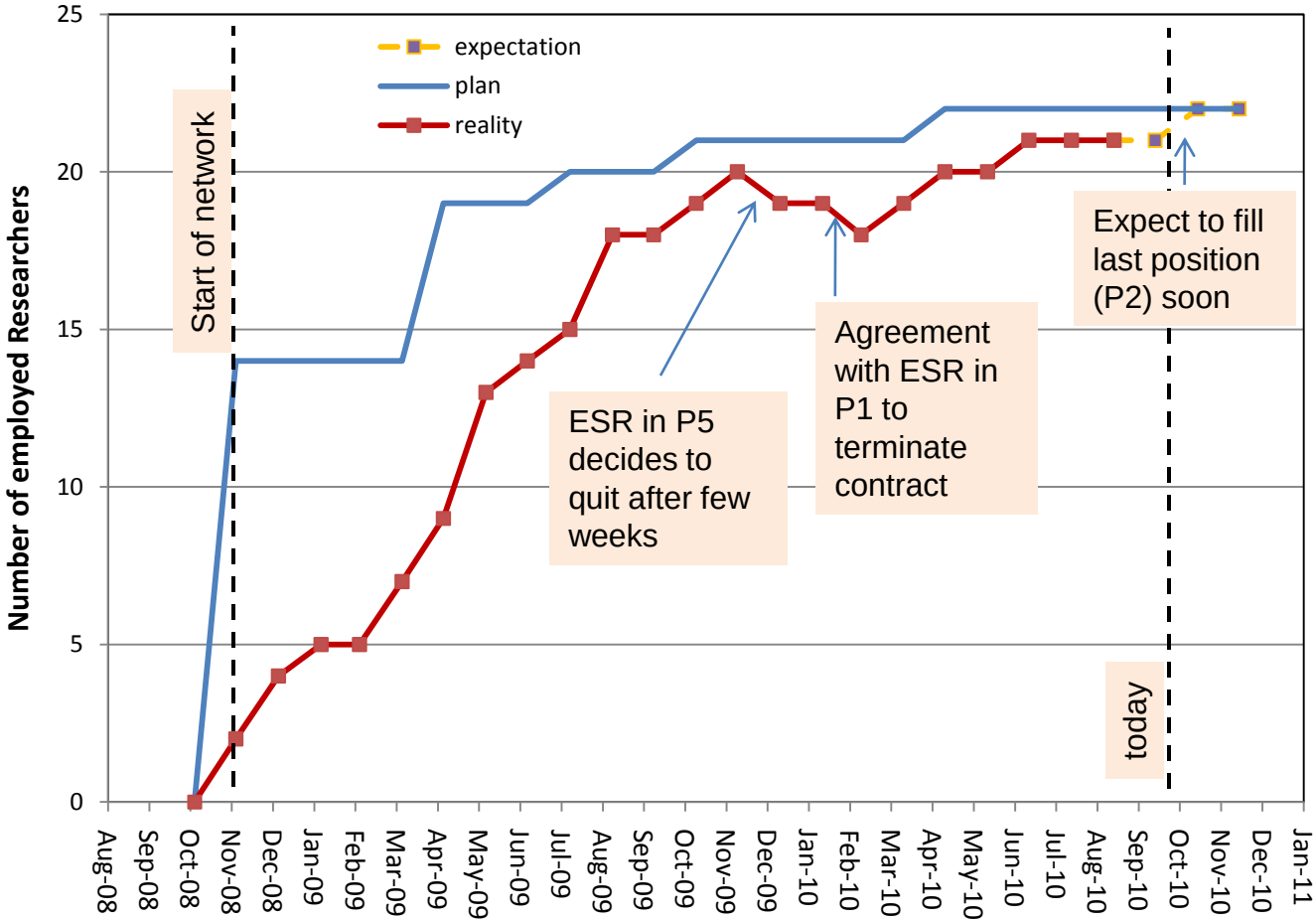
(in the order of recruitment)

Maria Tsagri (Greece)	ESR at CERN,	project P12,	start: 1 Dec 08
Marco Villa (Italy)	ESR at CERN,	project P4,	start: 1 Dec 08
Nicola Pacifico (Italy)	ESR at CERN,	project P1,	start: 1 Jan 09
Jonathan Aguilar (USA)	ESR at AGH (Cracow),	project P6,	start: 1 Jan 09
Ruben Verheyden (Belgium)	ESR at JSI (Ljubljana),	project P8,	start: 09 Feb 09.
Jennifer Sibille (USA)	ESR at PSI (Villigen),	project P2,	start: 1 April 09
Paolo Beltrame (Italy)	ER at CERN,	project P7,	start: 1 April 09
A K Prasoon (India)	ESR at AGH-UST (Cracow),	project P11,	start: 4 May 09
Rahul Arora (India)	ESR at GSI (Darmstadt),	project P5,	start: 11 May 09
Olga Novgorodova (Russia)	ESR at DESY (Zeuthen),	project P6,	start: 1 July 09
Shahinur Rahman (Bangladesh)	ER at GSI (Darmstadt),	project P11,	start : 1 June 09
Stefano Caiazza (Italy)	ESR at DESY (Hamburg),	project P5,	start: 1 June 2009.
Francesco Zappon (Italy)	ESR at NIKHEF (Amsterdam)	project P9,	start: 1 June 09.
Jiaguo Zhang (China)	ESR at U Hamburg,	project P2,	start 15 July 09.
Marco Milovanovic (Serbia)	ESR at JSI (Ljubljana),	project P3,	start: 1 August 09
Cristina Pirvutoiu (Rumania)	ESR at U Hamburg,	project P3,	start : 1 September 09
Imran Ahmed (India)	ESR at AGH-UST (Cracow),	project P10,	start: 1 September 09
Jing Dong (China)	ER at INFN Frascati,	project P4,	start: 15 November 09
Filimon Roukoutakis (Greece)	ER at INFN Frascati,	project P12,	start: 1 April 2010
Rolf Schoen (Germany)	ESR at NIKHEF (Amsterdam),	project P5,	start: 15 May 2010
Tomas Balog (Slovakia)	ESR at GSI (Darmstadt),	project P1,	start: 1 July 2010

Last position, ER at PSI, project P2 currently still unfilled.



Recruitment profile



Network and open training events

The **kick-off meeting** was held at CERN on 13 and 14 of January 2009

Open training event, focused on **Detector Simulation and Data Analysis**. 28 - 30 January 2010, University of Hamburg and DESY.

Photo to be updated

Network training event on **electronics** was held on 17 - 19 September 09. AGH / IFJ-PAN in Cracow

Network training event on **Processing and Radiation Hardness of Solid State Detectors.**

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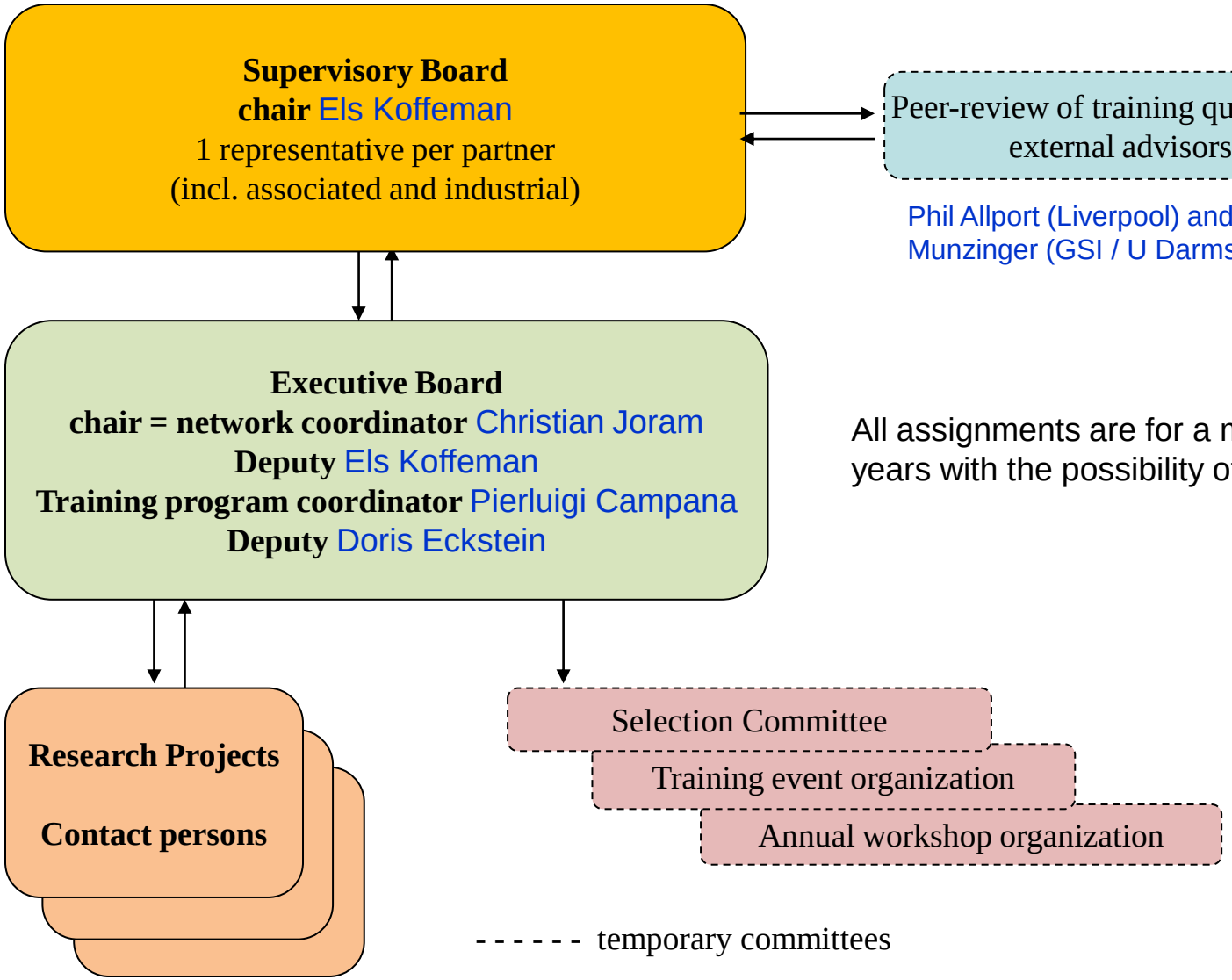
Midterm Review.

27 - 29 September 2010. Ljubljana, Slovenia.

… we will keep up the effort to maintain the rate of 2 events per year.

Management of the network.



Coordination, follow-up, dissemination

We have a public website www.cern.ch/mc-pad

… and a twiki page for internal use
https://twiki.cern.ch/twiki/bin/view/MCPAD/WebHome

The twiki page contains links to the activity logs which every Researcher maintains.

The coordination of the network is ensured through regular minuted phone meetings. http://indico.cern.ch/categoryDisplay.py?categId=1464

Since the official start of MC-PAD we had 23 such meetings. In total we had 50.

Exchange of students and secondments

… has started in 2010

P1: Secondment of Marko Milovanovic (JSI, Ljubljana) for one week, at CERN for experience sharing on Alibava-based CCE setup and EDGE-TCT setup

P2: Jennifer Sibille comes to CERN to for a test beam in the SPS H2 zone

P7/P8: Ruben Verheyden (JSI Ljubljana) participates to the AX-PET Testing campaign at CERN.

P12: Mary Tsagri (CERN) visits Frascati (Italy) and KLOE experiment in order to study simulations that have been done already and discuss about the possibility of doing the Geant4 simulation for KLOE

… but still to be intensified.

Visiting scientists

ID	**recruitment time**	**hosting participant**	**years of experience**	**scientific profile**	**VS arrangements**
1	m12	CERN	>10	Expert in photo detection and/or solid state detectors (design, simulation, testing, application)	August 2010. M. Rafecas (IFIC Valencia), 1 month in P7. Foreseen: F. Hartjes, 1 month in P1.
2	m12	DESY	>10	Expert in the field of tracking detectors and / or calorimeters	
3	m18	GSI	<10	Expert in detector FE electronics development, including ASIC's (design, testing, integration)	Edisher Tskhadze (Dubna, Russia)
4	m24	JSI	>10	Expert in photon detectors for PET imaging (novel sensor types, sensor fabrication, testing)	Shohei Nishida (KEK, Japan, autumn 2010
5	m24	AGH-UST	<10	Expert in VLSI electronics and / or in semiconductor detectors	Angelo Rivetti (INFN Torinao), summer 2010
6	m18	INFN	>10	Gas detectors expert (modelling, testing, electronics)	
7	m30	FOM	<10	Expert in signal development and amplification in gaseous media and state of the art frontend electronics	
8	m30	PSI	>10	Expert in VLSI electronics and / or in semiconductor detectors	
9	m33	UNI-HH	<10	Expert in rad-hard silicon materials and devices (characterization, testing and simulation)	

Challenges (1)

- Gender balance. The F/M ratio in MC-PAD is 5/16 (F=24%) - the Commission aims at 40% but we know that in the physical sciences we are lucky to reach 20% (interesting comparison with PARTNER which has a significant life science component and is around the 50/50 mark).

- The balance between spending the generous Column E allocation, i.e. attending training courses, schools, conferences and the researchers doing their scientific work. A well balanced compromise must be found – in every case individually tuned.

- Finding ERs (a) who meet the experience profile with that very narrow window of opportunity between 4 and 5 years, (b) who will be willing to come for a short period and perhaps have to move with family (often the case of Scandinavians who tend to start a family life much earlier than other countries in Europe).

Challenges (2)

Participation by private sector

So far, industry showed modest interest in network activities. Only one partner participated at kick-off meeting, none came to the annual meeting of the supervisory board in 2009, one partner is present here in Ljubljana.

In 2009, MC-PAD was busy with recruiting people and integrating them in the research activities. We made only limited effort to involve companies.

The participation of the private sector, i.e. secondment of Researchers to companies and presentation/lectures by companies at network events must be a priority for the second period.

THANKS !

- To the MC-PAD Researchers for presenting us their progress today.
- To the MC-PAD supervisors for guiding, teaching, encouraging, …
- to our Project Officer, Sergio Mastropierro, and Expert Reviewer, Dr. Malgosia Kaczmarek, for their help and advice in running and managing this network
- Last but not least, the European tax payers