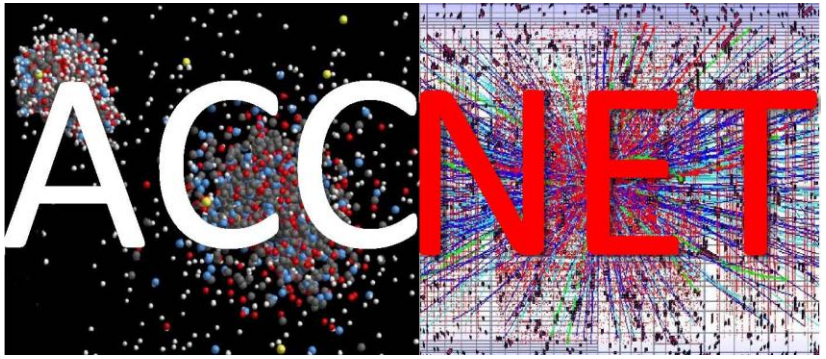


EuCARD WP4 - Accelerator Networks

coordinated by
Ralph Assmann, Jean-Marie De Conto, Mariusz Grecki, Jens Osterhoff, Walter Scandale, Peter Spiller, Ezio Todesco, Henri Videau, Wolfgang Weingarten (ret.), and Frank Zimmermann

EuCARD 3rd Annual Meeting,
Warsaw University of Technology, 25 April 2012

WP4 AccNet getting truly global?

Email 25.03.2012

There is a new registrant in 'EuCARD 3rd ANNUAL MEETING'. See information below:

Event: http://indico.cern.ch/conferenceDisplay.py?confId=206908
Registrant Id: 88

Personal Data

- Family Name: NKALUBO
- First Name: VINCENT
- Institution: RWANDA TECHNOLOGICAL INSTITUITE
- Mobile Phone (recommended): 000256711657714
- Phone: 000256711657714
- Email: swatuniversity@yahoo.com
- Address: 71173 clock tower
- City: **kampala**
- Country: **UGANDA**

Hello
Yes..I've just deleted their registration after having received an e-mail from our bank saying they've paid with a **false credit card....**
Thanks for your help
M.

ACCNET

Accelerator Science Networks

Coordination & Management

coordinated by Walter Scandale, IN2P3 ; Peter Spiller, GSI ; Frank Zimmermann, CERN

EURO-LUMI

accelerators & colliders performance

coordinated by
Frank Zimmermann &
Ezio Todesco, CERN

RFTECH

sc & nc rf technologies

coordinated by
Jean-Marie de Conto, UJF
Mariusz Grecki, DESY
(Wolfgang Weingarten, CERN)

EuroNNAc

novel accelerators

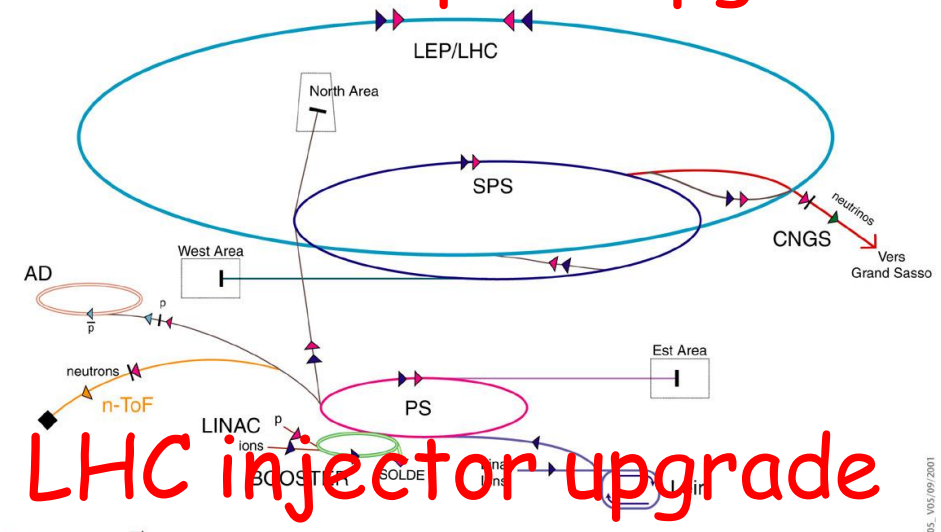
coordinated by
Ralph Assmann, CERN
Jens Osterhoff, DESY
Henri Videau, CNRS

EUROLUMI

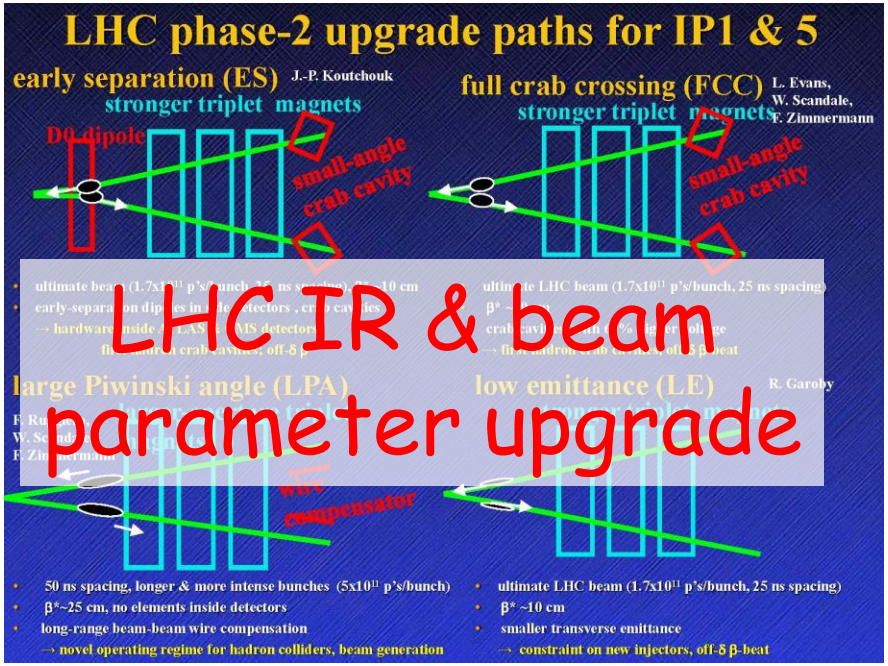
brings together experts in beam dynamics, magnets, collimation, RF, & experiments

FAIR

CERN complex upgrade



LHC injector upgrade



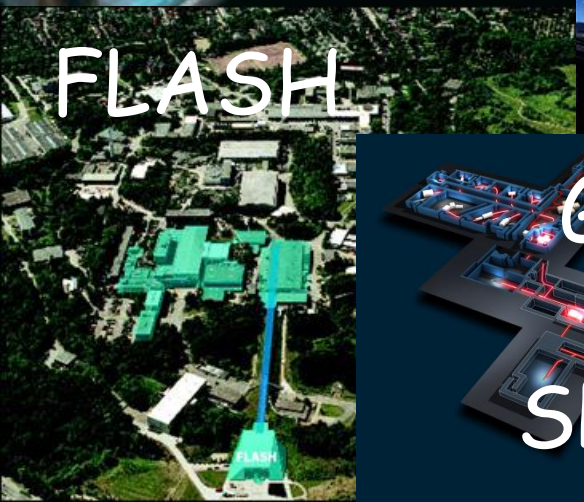
LHC IR & beam parameter upgrade

\+

initial initiative on plasma acceleration

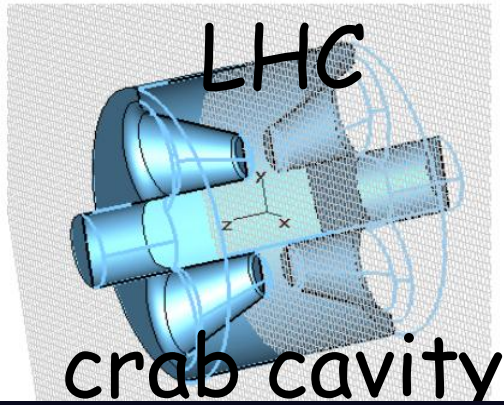
RFTECH

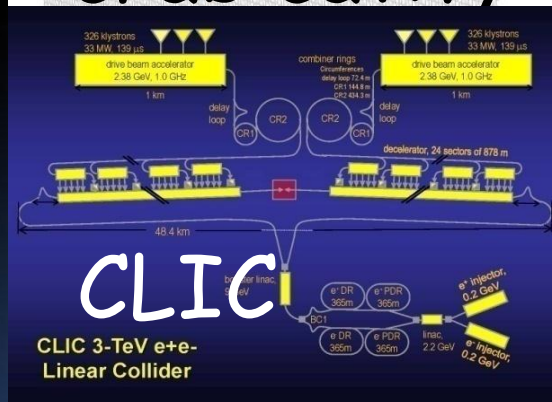
brings together RF experts from different labs, proton & electron accelerators, CLIC and ILC,… ; encompasses all aspects of RF technology, e.g. klystron development, RF power distribution system, cavity design, and low-level RF system, for linear accelerators, storage rings, and associated research infra-structures, including transversely deflecting (crab) cavities and financial aspects such as costing tools



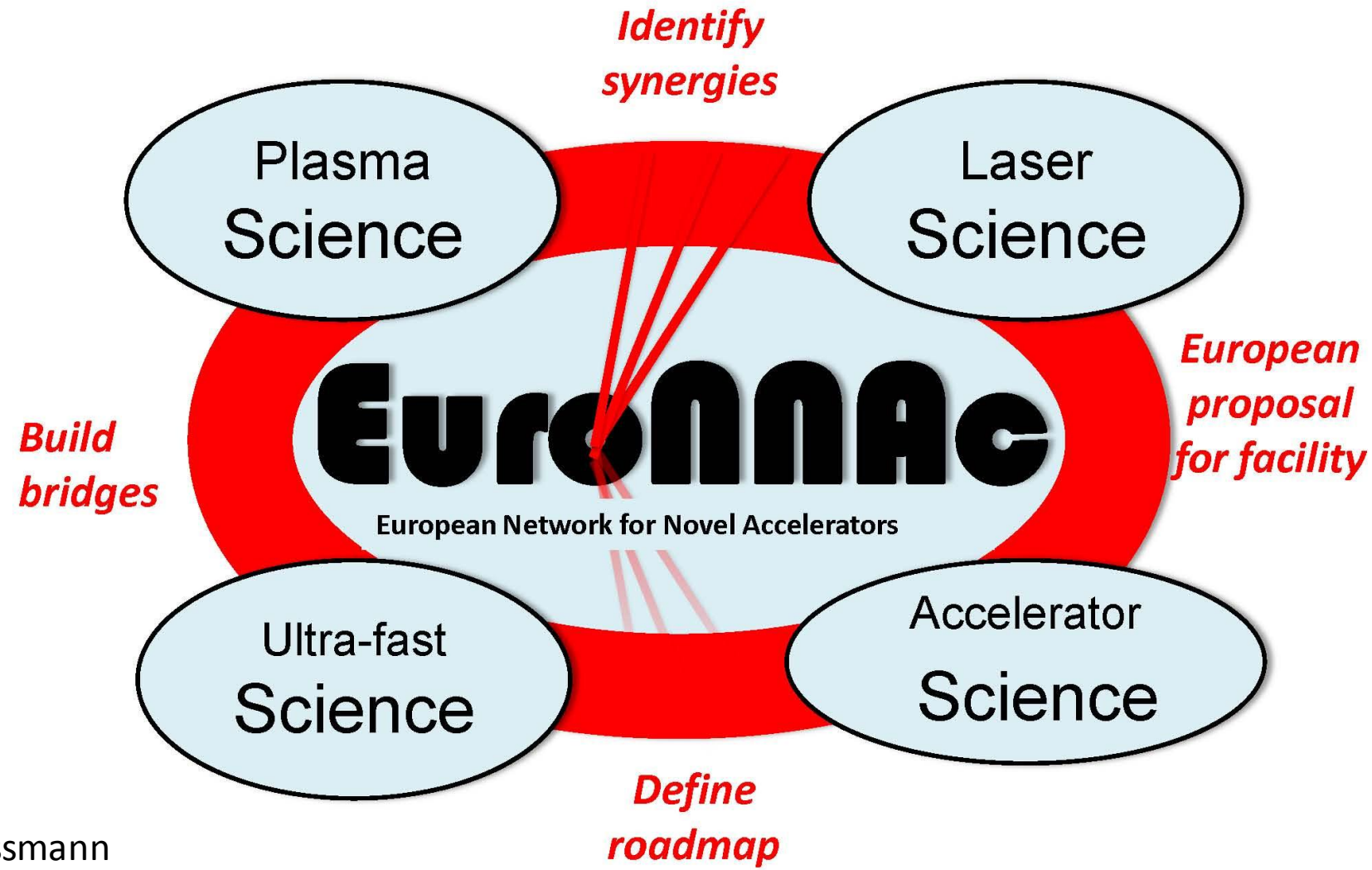
SPL

PS2, neutrinos, RIB





EuroNNAc will identify possible usage of advanced accelerator techniques in large-scale conventional facilities and to identify a roadmap towards an advanced accelerator facility for big science with applications in applied and fundamental research



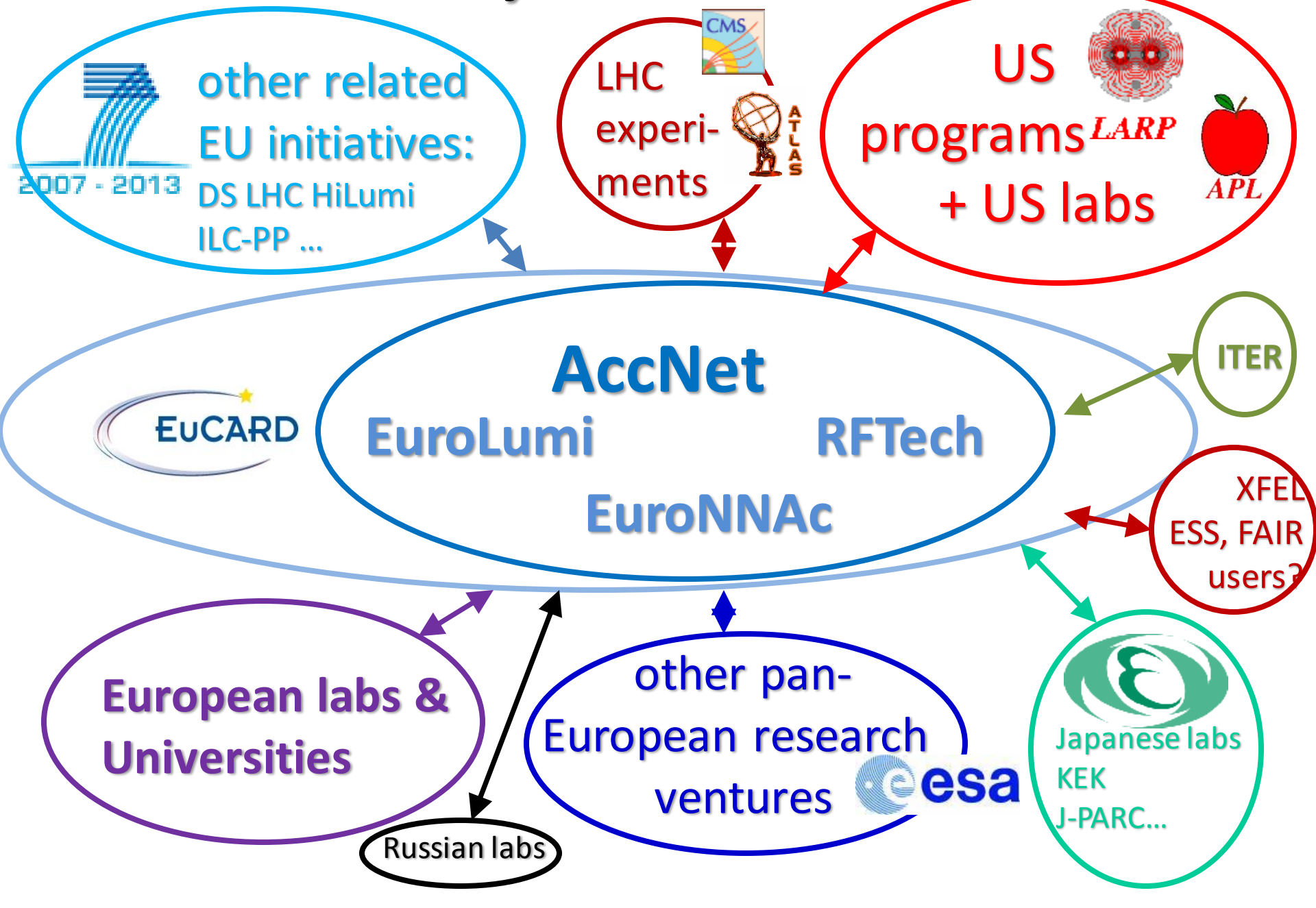
R. Assmann

AccNet tools

- **annual workshops**
- **topical meetings and mini-workshops**
- **capability of inviting or exchanging experts over periods of typically a week to a month**
- **exploratory studies & collaborations**
- **opportunities for students**
- **unique place of discussion with users**

→ ***exchange of ideas and expertise aimed identifying the most promising strategies and technologies***

AccNet is a catalyzer



AccNet web site

http://cern.ch/accnet/
new address

maintained & expanded
by Olivier Dadoun (LAL),
and
Frank Zimmermann (CERN)

early in 2011 (after retirement of Bernard Mouton) all AccNet web sites were transferred from LAL to a CERN server for easier access and maintenance

EuCARD

Accelerator Science Networks
EuroLumi, EuroNNac and RFTech

ACCNET

Coordinated by P. Spiller, W. Scandale and F. Zimmermann

AccNet is a Networking Activity (WP4) in the framework of EuCARD (European Coordination for Accelerator Research & Development)

Main Objectives	Network Structure	Activity Reports	WP4 Collaboration Workspace	Job Opportunities	Workshops	Literature and Presentations	Links

Notice: this site is under construction. Please accept our apologies for its incompleteness and yet missing information.

AccNet is composed of three networks

EuroLumi	EuroNNac	RFTech

Hot News

17-21 October 2011	LLRF-2011 Workshop, DESY - *NEW!*
20-21 June 2011	Workshop on Optics Measurement, Correction & Modelling "OMCM", CERN - *NEW!*
16-18 June 2011	MIXDES2011, Gliwice – *NEW!*
6-8 June 2011	Workshop on Linac Operation with Long Bunch Trains, DESY - *NEW!*
10 May 2011	EuCARD WP4 AccNet Steering & Coordination Meeting, CNRS headquarters, room K024, 16:00, Paris - *NEW!*

AccNet Article in EuCARD Newsletter no 8 (March 2011):
Proposed increase in energy takes LHC even further into the future

AccNet Articles in EuCARD Newsletter no 7 (December 2010):
A knack for novel acceleration techniques
Crystal clear ideas for beam collimation

AccNet Article in CERN Courier (24 February 2010)
Workshop pushes proton-driven plasma wakefield acceleration

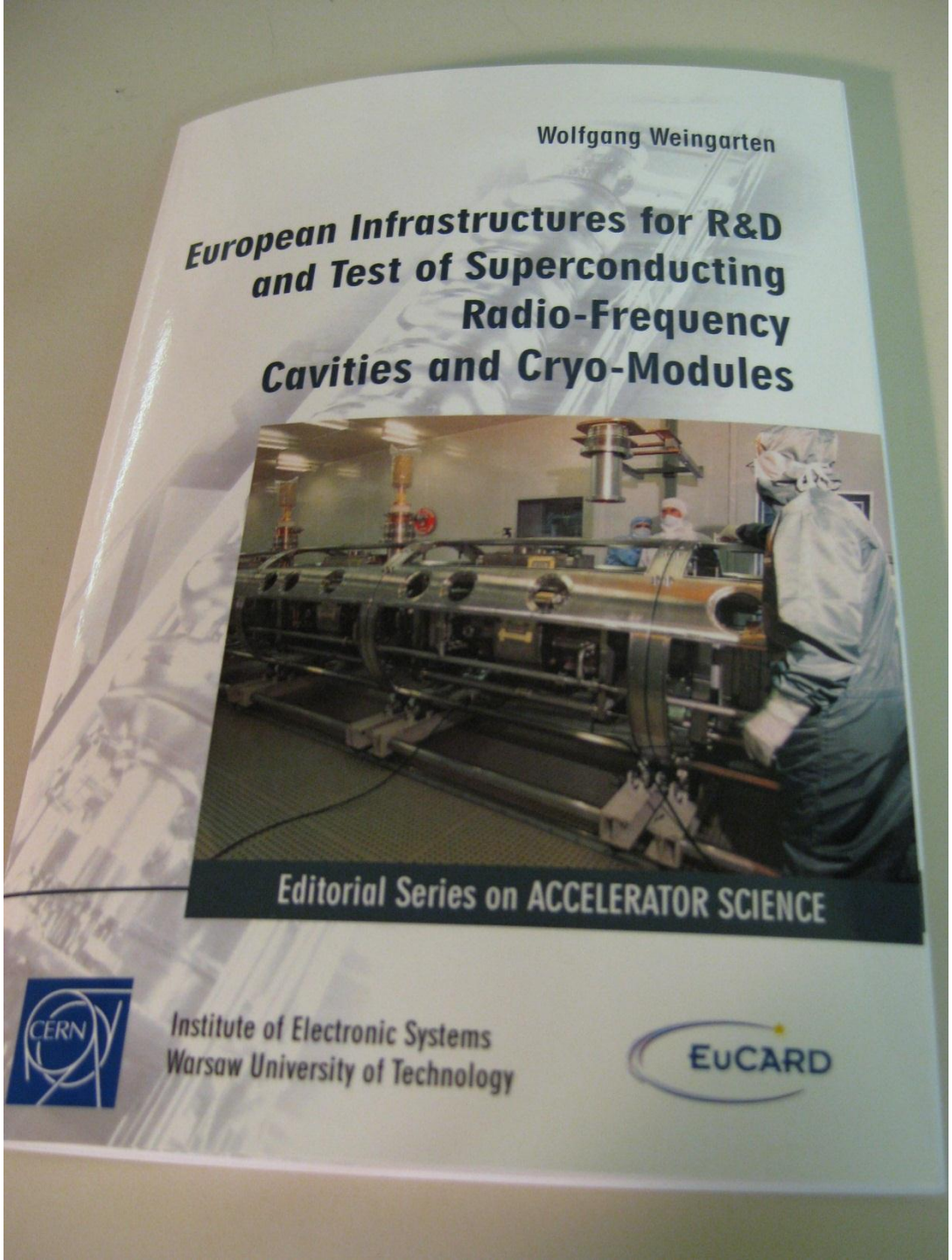
AccNet Deliverable D4.3.2

–

“Strategy/result for SRF test infrastructures”

–

has become a EuCARD monograph!



Retirement of RFTech Co-ordinator W. Weingarten

29.11.2011 *Many thanks & good luck, Wolfgang!*

AccNet achievements since April'11

- **RFTech co-sponsored workshop** on Advanced Techniques in LLRF for XFEL, Cracow 18-20.04.2011
- **3rd WP4 AccNet Steering & Coordination Meeting**, CNRS, 10.05.2011
- 1st **AccNet-EuroNNAc workshop**, May 2011
- **AccNet-RFTech co-sponsored MIXDES2011**, Gliwice, 16-18 June 2011
- **AccNet-RFTech co-sponsored Workshop LLRF-2011**, DESY, 17-21.10.'11
- **AccNet-EuroLumi Workshop** on **Optics Measurement, Correction & Modelling "OMCM"**, CERN, 20-21 June 2011
- **AccNet co-sponsored MulCoPim'11**, Valencia, 21-23 September 2011
- **AccNet Workshop LHC-CC11 on LHC Crab Cavities**, CERN 14-15.11.'11
- **3rd Annual RFTech meeting**, Rostock, 12 December 2011
- **RFTech co-sponsored LLRF System Integration WS**, WUT, 14-16.12.'11
- expansion of **collaborations with CINVESTAV/Mexico, ESA, ITER, Kyoto U.**... MulCoPim'2011; 1st MePAS; 3rd Mexican student at CERN
- **4th WP4 AccNet Steering & Coordination Meeting**, WUT, 24.04.2011

Advanced Techniques in LLRF for XFEL Workshop, Cracow 18-20.04.2011

38 participants from Poland, Germany & US, 35 talks including 2 invited talks

topics:

- towards CW operation of XFEL
- summary of 9 mA test at FLASH
- developement of uTCA based LLRF system (several talks)
- RF synchronization system for XFEL (several talks)
- LLRF software developement for XFEL
- quality management

3rd **general AccNet Steering meeting**, CNRS, May 2011

vendredi 13 mai 2011
metrofrance.com/paris
mini 10° / maxi 22°
qualité de l'air : moyenne

metro PARIS

TOUTE L'INFO DE LA CAPITALE ET DE SA RÉGION

Pourquoi les RER A et B sont en grève

De très fortes perturbations sont attendues aujourd'hui • Les conducteurs dénoncent une dégradation brutale des conditions de transport

1st **general AccNet EuroNNAc Workshop**

CERN, 3-6 May 2011

https://indico.cern.ch/internalPage.py?pageId=0&confId=115336

Participants: about 93 persons (from all over the world…)

About 46 presentations & discussions

Goal:
form the network and define the work towards a significant FP8 proposal for novel accelerator facilities in Europe.

Organizer: Ralph Assmann

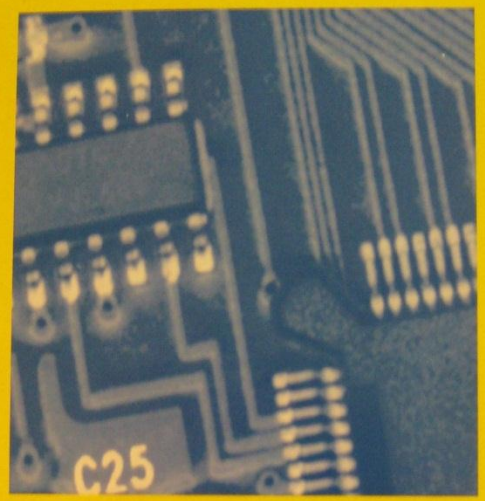
Accnet RFTech co-sponsored MIXDES2011

Proceedings

Proceedings of the 18th International Conference

MIXED DESIGN OF INTEGRATED CIRCUITS AND SYSTEMS

MIXDES 2011



Gliwice, Poland
16 - 18 June, 2011

Organised by:

Department of Microelectronics and Computer Science,
Technical University of Łódź, Poland

Institute of Electronics,
Silesian University of Technology, Poland

Institute of Microelectronics and Optoelectronics,
Warsaw University of Technology, Poland

in co-operation with:

Poland Section IEEE - CAS & ED Chapters

Section of Microelectronics
and Section of Signals, Electronic Circuits and Systems
of the Committee of Electronics and Telecommunication
of the Polish Academy of Sciences

IEEE

Electron Devices Society

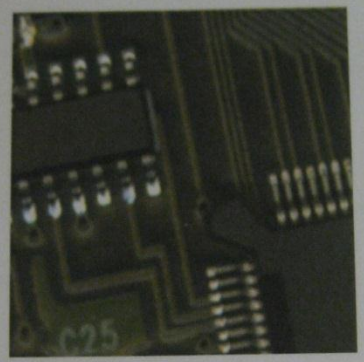
CAS

RFTech

Proceedings of the 18th International Conference

MIXED DESIGN OF INTEGRATED CIRCUITS AND SYSTEMS

MIXDES 2011



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Section of Microelectronics
and Section of Signals, Electronic Circuits and Systems
of the Committee of Electronics and Telecommunication
of the Polish Academy of Sciences

supported by:

RFTech Scientific Network

Compact Modelling Network

PAN

COMON

xTCA for Instrumentation

Module Management Controller for MicroTCA-based Controller Board

session specific to High Energy Physics and its applications, gathering interesting projects based on xTCA standards, developed for LLRF FLASH and XFEL (DESY) and CODAC (ITER)

AMC Vector Modulator for the LLRF System

seven papers about AMC vector modulator for LLRF System, records for xTCA Devices, Low Phase Noise PLL for femtosecond precision RF Field detection, uTCA-based controllers and optimization of associated software

J. WYCHOWANIAK, P. PEREK, D. MAKOWSKI, A. NAPIERALSKI (Tech. Univ. Łódź, POLAND)

EPICS-based Visualisation and Control in DAQ Systems

P. PRĘDKI, A. PIOTROWSKI, M. ORLIKOWSKI, T. KOZAK, G. JABŁOŃSKI, D. MAKOWSKI, A. NAPIERALSKI (Tech. Univ. Łódź, POLAND)

AccNet-RFTech "xTCA" session @ MIXDES2011

Low Phase Noise PLL Based LO Generation Module for Femtosecond Precision RF Field Detection

Ł. ZEMBALA, K. CZUBA (Warsaw Univ. of Techn., POLAND), M. HOFFMANN, F. LUDWIG, H.-C. WEDDIG (DESY, GERMAN
M. ŻUKOCIŃSKI (Warsaw Univ. of Techn., POLAND)

Performance Optimisation in Software for Data Acquisition Systems

A. PIOTROWSKI, M. ORLIKOWSKI, T. KOZAK, P. PRĘDKI, G. JABŁOŃSKI, D. MAKOWSKI, A. NAPIERALSKI (Tech. Univ. Łódź, POLAND)

AccNet-EuCARD Low-Level RF Workshop http://llrf2011.desy.de

17-20 October 2011, DESY Hamburg

Topics:

- Reviews of the low-level RF system at various laboratories
- Fast and/or digital low-level RF control for pulsed and CW operation
- Applications of the digital signal processing at accelerator
- Software development
- LLRF systems (requirements, performance reached, modeling)

Highlight: Linear Technology on the ADCs technology edge and their current performance

>118 participants from 16 countries , 9 industrial companies

44 talks including: **10 invited presentations** ; **4 tutorials** (on Control System Fundamentals, Receiver Fundamentals, FPGA Programming, Embedded system development); 6 lab-talks: CERN, DESY, KEK, FNAL, JLAB, Cornell; 1 industry talk (Linear Technology),;1 welcome talk (Reinhard Brinkmann on DESY accelerator activities); 22 contributed talks (7 hardware, 7 software, 8 systems); **49 posters**

Visit of DESY facilities (FLASH and PETRA) - FLASH was overbooked!

9 participants supported by RFTech

Organizer: Mariusz Grecki

EuCARD-AccNet Workshop Optics Measurements, Corrections and Modeling for High-Performance Storage Rings "OMCM"

20-22 June 2011, CERN

https://indico.cern.ch/conferenceDisplay.py?confId=132526

workshop summary published as EuCARD-CON-2012-004

Participants: about 59 persons (many institutes in Europe, US, and Japan)
46+3 presentations

Sessions: Motivation for HE machines, colliders, HI machines, light sources and damping rings; Experience from colliders, high energy and intensity machines - I + II; Experience from light sources and damping rings ; Techniques review – I & II; Modeling ; Beam diagnostics ; LHC complex present and future plans ; Prospects and future developments

Organizers:
Rama Calaga, Massimo Giovannozzi,
Rogelio Tomas, Frank Zimmermann

MULCOPIM '11

21, 22, 23 September 2011
Valencia, Spain

Particle Accelerators technical sponsors

ACCNET

EuCARD

esa

MulCoPim topics: multipactor components, multipactor Tx lines, multipactor dielectrics; corona, multipactor experimental, multipactior software, multipactor multicarrie; PIM, SEY, Accelerators

5th Joint EuCARD-AccNet – LARP – KEK – CI/DL workshop on LHC crab cavities

14-15 November 2011, CERN

https://indico.cern.ch/conferenceDisplay.py?confId=149614

workshop summary published as EuCARD-PUB-2012-001

Participants: about 52 persons (many institutes in Europe, US, and Japan)
34 presentations

Main results: convergence to 2 (3) compact crab-cavity designs; first Al prototypes; detailed cavity specifications will be prepared by spring 2012 based on initial set of HL-LHC parameters; beam test of the compact design in the SPS and the LHC are pre-requisites for a final installation in LHC Points 1 and 5.

Organizers:

Rama Calaga, Rogelio Tomas, Frank Zimmermann

3rd Annual RFTech meeting

12 December 2011, U Rostock

http://lpsc.in2p3.fr/Indico/internalPage.py?pageId=2&confId=646

Participants: 16 RF experts from DESY, CERN, U Rostock, GANIL, LPSC/CNRS, PSI, TU Lodz, TU Darmstadt

Topics:

- **electromagnetic field computation** (finite integration and finite elements methods, pertubative computation)
- **cavity RF models** (coupled multicell cavities with beam, cavity model and experimental validation for gradient flatness procedure).
- **Low Level RF and regulation.**
- **General topics**: RF panorama at CERN, activities at Darmstadt and GANIL – Spiral2)
- **Specific topics**: crab cavities.

Organizers: Ursula van Rienen, Jean-Marie De Conto, Mariusz Grecki

EuCARD-AccNet LLRF Collaboration meeting

14-16 December 2011, Warsaw University of Technology

https://indico.desy.de/conferenceDisplay.py?confId=4991

Participants: 35 LLRF experts (DESY, WUT, TUL,NCBJ,…)
Sessions: system overview and integration, emerging systems 1+2, status of system components, firmware and software developments

RFTech supported all participants of this meeting

About 40 presentations

Main topic: integration of hardware & software solutions for the LLRF and synchronization systems at FLASH and XFEL

Organizers:
Holger Schlarb, Frank Ludwig, Mariusz Grecki

AccNet publications

AccNet dissemination in the last year

- three outreach talks in Japan (KEK, Hiroshima U., Kyoto U.)
- invited presentations at ATLAS and CMS upgrade workshops
- invited talk at first Mexican Accelerator school

EuCARD AccNet documents

- about **100 in total**
  - **1 CERN Yellow Report**
  - **3 journal articles**
  - **> 31 conference presentations**
  - **~10 workshop summaries**
  - **1 PhD thesis**
  - **1 master thesis**
  - **2 EuCARD monographs**

not all in the database

AccNet talks & papers from 2011/12

many not yet in the database

R. Bartolini et al, **Summary of the AccNet-EuCARD Workshop on Optics Measurements, Corrections and Modelling for High-Performance Storage Rings "OMCM"**, EuCARD-CON-2012-004; G. Arduini et al, **5th LHC Crab Cavity Workshop, LHC-CC11 Workshop Summary Report**, EuCARD-PUB-2012-001; K. Ohmi et al, **Response of colliding beam-beam system to harmonic excitation due to crab-cavity rf phase modulation**, PRST-AB 14:111003(2011), EuCARD-PUB-2012-002; F. Zimmermann, **Machine Progress Towards Higher Luminosity**, CMS Upgrade Meeting, FNAL, Chicago, 7 November 2011; F. Zimmermann, **Hadron Colliders**, First Mexican Particle Accelerator School "MePAS," Guanajuato, 7 October 2011; R. Cimino, **A surface study on the origin of SEY reduction on accelerator walls**, CERN, 29 July 2011 ; F. Zimmermann, **Large Hadron Collider - Status & Future Plans**, Kyoto University, Kyoto, 22 July 2011; F. Zimmermann, **Large Hadron Collider - Status & Future Plans**, Hiroshima University, East Hiroshima, 19 July 2011; F. Zimmermann, **LHC Performance & Future Plans**, KEK, 1 July 2011 ; F. Zimmermann, **LHC Machine Status & Plans**, ATLAS week, CERN, Geneva, 20 June 2011 ; E. Todesco and F. Zimmermann (eds), **The Higher-Energy Large Hadron Collider**, Proceedings of the EuCARD-AccNet HE-LHC workshop, Malta, 14-16 October 2010, CERN, EuCARD-CON-2011-001 ; D. Shatilov, E. Levichev, E. Simonow, M. Zobov, **Application of Frequency Map Analysis to Beam-Beam Effects Study in Crab Waist Collision Scheme**, PRST-AB, 14, 014001 (2011) [WPs 4 & 11] ; R. Calaga (BNL), S. Myers (CERN), F. Zimmermann (CERN), **Summary of the 4th LHC Crab Cavity Workshop "LHC-CC10"**, EuCARD-REP-2011-001 (2011) ; F. Zimmermann, **HL-LHC: parameter space, constraints and possible options**, Proc. Chamonix 2011 workshop on LHC performance, CERN-ATS-2011-005 (2011) ; Rumolo, F. Zimmermann, and O. Boine-Frankenheim, **Summary of EuCARD-AccNet CERN-GSI Workshop on Electron Cloud**, CERN, Geneva, 7-8 March 2011; U. Iriso, **Electron Clouds Thresholds with 75 ns Bunch Spacing (draft)**, 11 February 2011

AccNet papers from PAC11, IPAC11 and MulCoPim11

many not yet in the database

O. Dominguez, U. Iriso, H. Maury, G. Rumolo, F. Zimmermann, "**Benchmarking Electron-Cloud Build-Up and Heat-Load Simulations against Large-Hadron-Collider Observations**," MulCoPim'2011; R. Calaga, T. Baer, J. Barranco, R. Tomas, J. Wenninger, F. Zimmermann, B. Yee-Rendon, "**Beam Losses Due to Abrupt Crab Cavity Failures in the LHC**," PAC'11 New York ; G. Xia, et al, "**A Proposed Experimental Test of Proton-Driven Plasma Wakefield Acceleration Based on CERN SPS**,' PAC11 New York ; G. Franchetti, F. Zimmermann, "**Electron-cloud Pinch Dynamics in Presence of Lattice Magnet Fields,**" IPAC11 San Sebastian ; G.H.I. Maury Cuna, G. Arduini, G. Rumolo, L.J. Tavian, F. Zimmermann, "**Simulation of Electron-cloud Build-Up for the Cold Arcs of the LHC and Comparison with Measured Data**," IPAC11 San Sebastian ; T. Baer, R. Calaga, R. Tomás, J. Tückmantel, J. Wenninger, F. Zimmermann, "**LHC Machine Protection against Very Fast Crab Cavity Failures** ," IPAC11 San Sebastian, EuCARD-CON-2011-048; C.O. Domínguez, F. Zimmermann, "Luminosity Optimization for a Higher-Energy LHC," IPAC11 San Sebastian; C.O. Domínguez, G. Arduini, V. Baglin, G. Bregliozzi, J.M. Jimenez, E. Métral, G. Rumolo, D. Schulte, F. Zimmermann, "**Electron Cloud Parameterization Studies in the LHC**," IPAC11 San Sebastian ; C.M. Bhat, F. Zimmermann, "**LHC Luminosity Upgrade with Large Piwinski Angle Scheme: A Recent Look**," IPAC11 San Sebastian ; S. Hillenbrand, R.W. Assmann, A.-S. Müller, T. Tückmantel, F. Zimmermann, "**Energy Spectrometer Studies for Proton-driven Plasma Acceleration,**" IPAC11 San Sebastian ; R.W. Assmann, I. Efthymiopoulos, S.D. Fartoukh, G. Geschonke, B. Goddard, C. Heßler, S. Hillenbrand, M. Meddahi, S. Roesler, F. Zimmermann, A. Caldwell, G.X. Xia, P. Muggli, "**Accelerator Studies on a Possible Experiment on Proton-driven Plasma Wakefields at CERN**," IPAC11 San Sebastian

EuroLumi exchanges & joint studies

Mexican PhD student Humberto Maury (CINVESTAV)

- **e-cloud simulations for LHC & HL-LHC**

Mexican master student Bruce Yee (CINVESTAV)

- **simulations of LHC crab-cavity failure scenarios**

Mexican master student Cristhian Valerio (CINVESTAV)

- **H- source**

Italo-german expert Giuliano Franchetti (GSI)

- **incoherent e-cloud effects & resonance trapping**

US-LARP physicist Chandra Bhat (FNAL)

- **generation & stability of long flat bunches for LHC**

US physicists Glenn Decker (ANL) and Mike Plum (SNS)

- **optics** diagnostics - **modeling for high-intensity proton rings**

Japanese expert Kazuhito Ohmi (KEK)

- **beam-beam & e-cloud simulation studies for LHC, HE-LHC & HL-LHC**

Italian expert Roberto Cimino (INFN-LNF)

- **e-cloud surface physics & mitigation, preparation of ECLOUD'12**

Russian and European experts S. Dabagov (INFN-LNF) – **crystal collimation**

planned AccNet workshops

- **EuroNNAc 2012 meeting, CERN, 3-6 May 2012**
- **AccNet-RFTech co-sponsored MIXDES2012**, Warsaw, 24-26 May 2012
- **AccNetEuroLumi – INFN - LER joint workshop on electron cloud effects & mitigation ECLOUD'12**, 5-9 June, Italy
- **AccNet-RFTech co-sponsored workshop on Higher-Order-Mode Diagnostics and Suppression in Superconducting Cavities**, HOMSC12, Daresbury, UK (June 25-27, 2012)
  http://www.cockcroft.ac.uk/events/HOMSC12/index.html
- **AccNet-EuroLumi co-sponsored conference ICAP'12**, 19-24.08.'12
- **AccNet-EuroLumi Workshop** on **dynamic vacuum at/near GSI**
- **AccNet-EuroLumi & CI joint workshop** on **Extreme Beams**?
- **AccNet-RFTech co-sponsored LLRF meeting,** early 08.2012 (in Lodz)
- **LHC crystal collimation workshop**, fall 2012?
- **4th Annual RFTech meeting**, Grenoble?, December 2012
- **AccNet-EuroLumi Workshop** on **LHC/FAIR beam instrumentation**?
- **2nd AccNet-EuroLumi workshop on the High-Energy LHC**, early 2012

additional proposed AccNet workshops

- **RFTech topical meeting on energy efficient systems**, Grenoble or CERN, during 2012
- **AccNet-EuroLumi Workshop on short bunch length for LHC**, CERN, fall 2012
- **AccNet Workshop LHC-CC12 on LHC Crab Cavities**, combined with HiLumi LHC workshop, Frascati, November 2012
- **AccNet-EuroLumi CERN-GSI joint workshop on magnet setting generation & application software**, fall 2012 or early 2013

EuroNNAc 2012 meeting

CERN, 2-4 May 2012

next week!

Goals:

a) Organize the three working groups (definition). Select **leader and deputy leader per working group**. Define **sub-task leaders**.

b) Define **strategies and detailed plans per working group**, aiming at a coherent proposal for one or a few European and international pilot facilities for advanced accelerators.

c) Prepare a **written report on novel acceleration and the EuroNNAc network**. A draft based on the EuroNNAc 2011 meeting can be discussed at EuroNNAc 2012 before publication in a journal (state-of-the-art, authorship, conclusions, strategic road map, ...).

d) Approve plans for a **European conference for advanced accelerators**, the first to take place in 2013. Define committees, scope, …

e) Prepare **input to European Strategy for Particle Physics**

ECLOUD'12

La Biodola, Isola d'Elba, Italy

http://www.hotelhermitage.it/

from 5 to 8 June 2012

topics: SEY models, e-cloud build & e-cloud effects in accelerators & space applications, beam induced multipactoring, surface properties, mitigation measures, microwave diagnostics, … electron clouds at LHC, FAIR, SuperB, KEKB, SuperKEKB, SPS, PS, ILC, CLIC, Cesr-TA, FNAL, RHIC, ESA satellites, …

AccNet supports invited key speakers from ESA & MIT

more information at:

http://www.infn.lnf.conference/ecloud12

contacts: Roberto Cimino, Frank Zimmermann

in memory of Francesco Ruggiero

International Computational Accelerator Physics Conference, ICAP'12

19-24.08.'12, Warnemünde

with dedicated EuCARD-AccNet session(s)

conference chair: Ursula van Rienen

AccNet highlights talks at EuCARD 2012

Compact Crab Cavities for LHC
Graeme Burt (Lancaster U./ CI) [w WP10]

The Achromatic Telescopic Squeezing scheme: first validations with beam in the LHC and very low beta* optics for HL-LHC *Stephane Fartoukh (CERN)*

Overview of the LLRF Developments for FLASH *Mariusz Grecki (DESY)* [w WP10]

use of resources

most/all AccNet mini-workshops have moderate expenses (<10 kCHF)

collaborators cover part of the costs

management with a lot of enthusiasm devotes extra time

AccNet success indicators

excellent attendance to AccNet workshops
from many European labs, universities, US laboratories, Japan, international organizations

impact:

- on most relevant topics
- initiated crab-cavity program for LHC
- e-cloud modeling & mitigation
- push for high-energy LHC

high cost efficiency ; exchange of ~20 expert visitors ; two theses, >31 conf. papers, 2 journal articles, 2 EuCARD monographs

AccNet conclusions

EuroLumi gives input to LHC upgrade

strategy for LHC crab cavities, HL-LHC parameters, "LPA" scenario, flat-beam crab-waist scenario (w WP11), e-cloud mitigation, HL-LHC e-cloud, revisions of LHC upgrade plans, energy upgrade

RFTech organizes RF community

EuroNNAc organizes novel acc. community

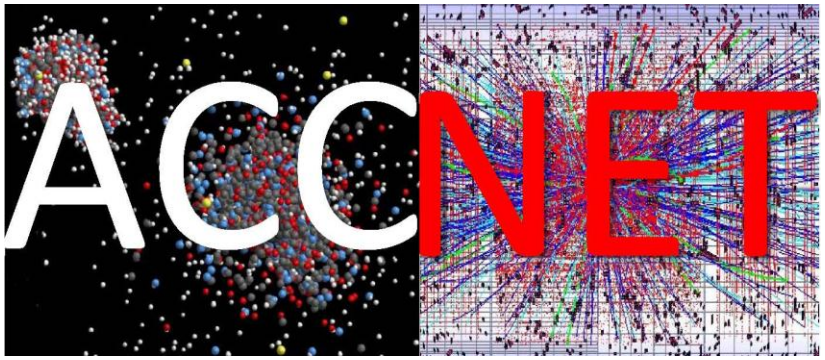
AccNet is breaking new grounds

plasma acceleration

crystal collimation

new contacts (ESA, CINVESTAV, VALSPACE, MIT, Kyoto U., Hiroshima U.)

EuCARD



coordination + management

EuroLumi

RFTech

Plasma Science

Laser Science

EuroNNAc

European Network for Novel Accelerators

Ultra-fast Science

Accelerator Science

pushes frontiers

for accelerators in Europe and around the world

Dziekuje!

Appendix

AccNet institutes & contacts

AccNet expenses & deliverables

AccNet EuroLumi institutes & contacts

Institute	Name
BNL	Calaga Rama
	Drees Angelika
	Fischer Wolfram
	Peggs Steve
CERN	Bottura Luca
	Todesco Ezio
	Zimmermann Frank
CI	Chattopadhyay Swapan
CNRS-LAL	Mouton Bernard
	Scandale Walter
	Variola Alessandro
CNRS-LPSC	Baylac Maud
CSIC - IFIC	Faus Golfe Angeles
DESY	Mais Helmut
FNAL	Bhat Chandra
	Sen Tanaji
	Shiltsev Vladimir
	Valishev Alexander

Institute	Name
GSI	Boine-Frankenheim Oliver
INFN-LNF	Biagini Marica
	Palumbo Luigi
	Spataro Bruno
INFN-NA	Vaccaro Vittorio
KEK	Ohmi Kazuhito
LBNL	Furman Miguel
MPP	Caldwell Allen
	Xia Guoxing
TEMF Darmstadt	Mueller Wolfgang
	Weiland Thomas
TUBE	Bruns Warner
	Henke Heino
UJF	De Conto Jean-Marie
UOM	Sammut Nicholas
UPSA	Ekelof Tord
USAN	Petracca Stefania

AccNet RFTech institutes & contacts

Institute	Name
BESSY Berlin	Knobloch Jens
BNL	Ben-Zvi Ilan
	Calaga Rama
CEA-DSM	Chel Stéphane
	Daël Antoine
	Devanz Guillaume
	Duperrier Romuald
CERN	Angoletta Maria Elena
	Brunner Olivier
	Calatroni Sergio
	Capatina Ofelia
	Chiaveri Enrico
	Garoby Roland
	Hofle Wolfgand
	Jensen Erk
	Junginger Tobias
	Montesinos Eric
	Ruber Roger
	Vretenar Maurizio
	Vullierme Bruno
	Weingarten Wolfgang
CI	McIntosh Peter
CNRS-IPNO	Bousson Sébastien
	Gardès Daniel
	Gassot Hui Min
	Olry Guillaume
CNRS-LAL	Mouton Bernard
	Variola Alessandro
Darmstadt University-IKP	Eichhorn Ralf

Institute	Name
WUT	Czuba Krzysztof
DESY	Elsen Eckhard
	Grecki Mariusz
	(Proch Dieter)
	(Simrock Stefan)
ESRF	Jacob Jorn
FZD	Teichert Jochen
Goettingen University	Quadt Arnulf
GSI	Huelsmann Peter
IFJ PAN	Wierba Wojchiech
INFN-LNF	Ghigo Andrea
INFN-Milano	Pagani Carlo
INFN-Roma	Tazzari Sergio
Institute for Nuclear Studies, Swierk	Nietubyc Robert
	Szcwinski Jaroslaw
	Wronka Slawomir
Karlsruhe University?	Ustinov Alexey?
LPNHEP (IN2P3 Jussieu)	Augustin Jean-Eudes
	Debu Pascal
Rostock University	Glock Hans-Walter
	van Rienen Ursula
Royal Holloway	Molloy Stephen
TEMF Darmstadt	Mueller Wolfgang
	Weiland Thomas
TUL	Makowski Dariusz
	Napieralski Andrzej
	Smage Bogna
UFJ and LPSC	De Conto Jean-Marie
Wuppertal University	Mueller Guenter

AccNet EuroNNAc institutes & contacts

Europe	Name			Affiliation
EuCARD, CERN	Dr.	Assmann*	Ralph	EuCARD/CERN
	Dr.	Geschonke	Gunther	CERN
	Dr.	Koutchouk	Jean-Pierre	EuCARD/CERN
	Dr.	Zimmermann	Frank	EuCARD/CERN
France	Dr.	Cros	Brigitte	LPGP -CNRS
	Prof. Dr.	Malka	Viktor	LOA
	Dr.	Martin	Philippe	CEA
	Prof. Dr.	Mourou	Gerard	ILE
	Dr.	Specka	Arnd	Ecole polytechnique
	Dr.	Videau*	Henri	Ecole polytechnique
Germany	Prof. Dr.	Caldwell	Allen	MPI-P Muenchen
	Dr.	Floettmann	Klaus	DESY
	Prof. Dr.	Gruener	Florian	LMU Muenchen/MPQ
	Dr.	Osterhoff*	Jens	University Hamburg, DESY
	Prof. Dr.	Sauerbrey	Roland	FZD Rossendorf
Italy	Dr.	Ferrario	Massimo	LNF
	Dr.	Ghigo	Andrea	INFN Frascati
	Prof. Dr.	Guiletti	Danilo	INFN Frascati
	Dr.	Serafini	Luca	INFN Frascati
Portugal	Prof. Dr.	Mendonca	Jose Tito	Instituto Superior Tecnico
Russia	Dr.	Kostyukov	Igor	Institute of Applied Physics
Sweden	Prof. Dr.	Wahlstroem	Claes-Goran	Lund University
Switzerland	Prof. Dr.	Rivkin	Leonid	EPFL, PSI
United Kingdom	Prof. Dr.	Jaroszynski	Dino	University of Strathclyde
	Dr.	Najmudin	Zulfikar	Imperial College
	Prof. Dr.	Neely	David	Rutherford Appleton Lab
	Prof. Dr.	Seryi	Andrei	John Adams Institute

**Coordinators*

Status 11.1.2011

Non-Europe	Name			Affiliation
China	Prof. Dr.	Sheng	Zhengming	Institute of Physics, CAS
India	Dr.	Naik	Prasad	RRCAT
Japan	Prof. Dr.	Yokoya	Kaoru	KEK
United States	Prof. Dr.	Chou	Weiren	ICFA/Fermilab
	Prof. Dr.	Joshi	Chan	University of California
	Prof. Dr.	Katsouleas	Thomas	Duke University
	Dr.	Leemans	Wim	LBNL
	Prof. Dr.	Muggli	Patric	USC
	Prof. Dr.	Raubenheimer	Tor	SLAC
	Prof. Dr.	Tajima	Toshiki	ICUIL/LMU

AccNet deliverables

Deliverables of tasks	Description/title	Nature	Delivery month	Status
4.1.1	Continually updated AccNet web site	O	M2	DONE, OK
4.1.2	AccNet Strategy for future proton & electron facilities in Europe	R	M48	on track
4.2.1	Continually updated EuroLumi web site	O	M2	DONE, OK
4.2.2	EuroLumi Strategy and issues for LHC IR, LHC injector and beam-parameter upgrade path(s), with comment on longer-term prospects, and for FAIR	R	M48	on track
4.3.1	Continually updated RFTECH web site	O	M2	DONE, OK
4.3.2	Strategy/result for SRF test infrastructures	R	M24	DONE, OK
4.3.3	RFTECH strategy/result for cavity design, LLRF & HPRF systems and design integration, and costing tools	R	M48	on track

completed AccNet deliverables

D.4.1.1 –Continually updated **AccNet web site** http://cern.ch/accnet/)
D.4.2.1 – A continually updated **EuroLumi web site** (http://cern.ch/accnet/Tasks/Eurolumi/)
D.4.3.1 – A continually updated **RFTech web site** (http://cernc.ch/accnet/Tasks/Rftech/)
D4.3.2 – **Strategy/result for SRF test infrastructures**: Complete

The AccNet web sites are documented in a **report** https://edms.cern.ch/file/1001866/4/EuCARD-Del-D4.1.1-D4.2.1-D4.3.1-1001866-v3.0.pdf
The completed deliverables are available from the link http://cern.ch/EuCARD/about/results/deliverables/ .

AccNet milestones

M.4.1.3

– 3rd **general AccNet Steering meeting** during the 2nd EuCARD Annual meeting at CNRS.

M4.2.3:

– Instead of a general annual EuroLumi workshop, **2 topical mini-workshops** have been organized and supported during the third year: **OMCM, LHC-CC11** (*note recent overlap with FP7 HiLumi*)

– **next major EuroLumi workshop in June 2012**

M4.3.3:

– 3rd annual **RFTECH workshop was held in Rostock, 12 December 2011**

AccNet expenses during last year

travel & per diem for **Mexican CINVESTAV visitors**
H. Maury (2 years), B. Yee (1 year), C. Valerio (1 year)

support of 5 PhD students for MIXDES2011 special session

travel support for **INFN expert** R. Cimino to discuss e-cloud mitigation and ECLOUD'12 preparation

travel support of **US experts** G. Decker (ANL) and M. Plum (SNS) to attend OMCM'11

support of **several workshops** (MulCoPim'11, Long Bunch Trains, LLRF System Integration, MIXDES2011)

support for AccNet workshops OMCM'11, LHC-CC11 & 3rd RFTech annual meeting

travel costs for **SC mtgs** and **EuCARD annual meetings**