18th REAL-TIME CONFERENCE 2012

June 11-15, 2012, Berkeley, CA

An interdisciplinary conference – realtime data acquisition and computing in the physical sciences applications.

Gamma Ray Energy Tracking In-Beam Array (GRETINA)

Key dates:

Deadline for abstract submission: **March 2, 2012**
Program available: **April 2, 2012**
Tutorials and xTCA Workshop: **June 9-10, 2012**

Applications Include:

High energy physics, Nuclear physics, Astrophysics and astroparticle physics, Nuclear fusion, Medical physics, Space instrumentation, Nuclear power instrumentation, Realtime security and safety, General radiation instrumentation.

Topics:

Realtime system architectures, Intelligent signal processing, Fast data transfer links and networks, Trigger systems, Data acquisition, Processing-farms, Control, monitoring, and test systems, Upgrades, Emerging realtime technologies, New standards, Realtime safety and security, Feedback on experiences.

Organizers:

General Chair: Sergio Zimmermann, LBNL
Scientific Program Chair: Réjean Fontaine, Université de Sherbrooke
Treasurer: Henrik von der Lippe, LBNL

RT2012.lbl.gov

E-mail: RT2012@lbl.gov

Sponsors:

IEEE NUCLEAR & PLASMA SCIENCES SOCIETY

Hosted by: Lawrence Berkeley National Laboratory, a national laboratory operated by the University of California for the U.S. Department of Energy

Location: Hotel Shattuck Plaza, Berkeley, CA

BERKELEY LAB

CSO2012TG

RT2012 Conference Information

On Site Registration

Onsite registration for 2012 Real Time will be available in the Hotel Lobby on Saturday and Sunday, and the foyer outside the Crystal Ballroom on Monday through Friday.

Registration hours are

Date	Hours
Saturday, June 9	8:00 – 17:00
Sunday, June 10	8:00 – 17:00
Monday, June 11	7:00 – 19:00
Tuesday, June 12	7:30 – 18:00
Wednesday, June 13	7:30 – 12:00
Thursday, June 14	8:00 – 18:00
Friday, June 15	8:00 – 12:00

Exhibit Hall Hours (Boiler Room)

Date	Hours
Monday, June 11	10:00 – 21:00
Tuesday, June 12	8:30 – 18:30

Wireless internet access is provided throughout the hotel for your convenience. Please use one of the following networks and password to gain access.

Networks: HotelShattuckPlaza, HSPBoilerA, HSPBoilerB, HSPBoilerC, HSPCrystal1, HSPCrystal2
Password: realtime

Coffee Breaks

Coffee breaks will be served at 10:40 and 15:30 (Monday, Tuesday, and Thursday) and at 10:40 (Wednesday and Friday) in the Courtyard.

Social Events

Welcome Reception, Hotel Shattuck Courtyard
Monday, June 11, 19:00 – 21:00

Wine Country Excursion (with ticket purchase)
Wednesday, June 13, 12:30 – 18:00

Tickets are $30 for registered attendees, $70 for a companion, and may be purchased at the registration desk. The fee includes a box lunch which will be distributed upon bus load in. The tour is limited to 100 people total: first come, first served.

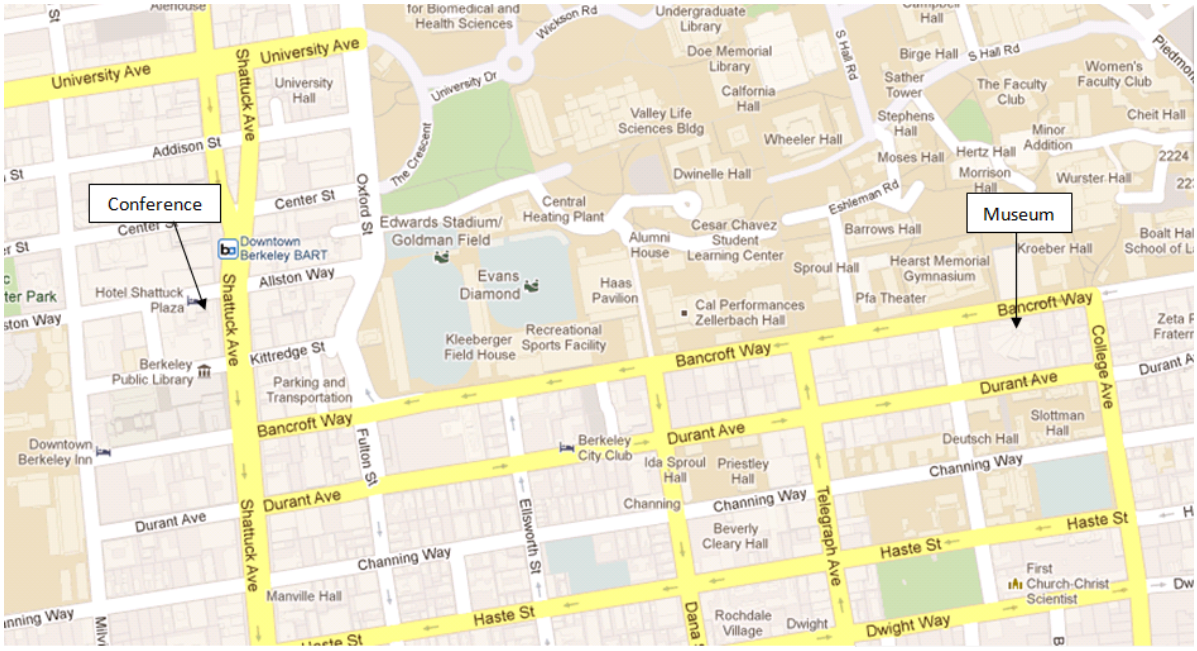
Coaches will depart the hotel at approximately 12:30 and will return around 18:00.

Real Time 2012 Banquet, Berkeley Art Museum
Thursday, June 14, 19:00pm - 22:00

2575 Bancroft Way
Berkeley, CA 94720
http://www.bampfa.berkeley.edu/
(510) 642-0808

A shuttle to and from the Berkeley Art Museum will be provided at the main entrance of the Hotel Shattuck. The shuttle will begin at 18:30 and run continuously, with the last bus departing the Museum at 22:00.

Map: Conference and Berkeley Art Museum



Please visit the RT2012 web site at http://rt2012.lbl.gov/onyourown.html or Berkeley Lab's web site at http://www.lbl.gov/visitor-info.html for additional information on places to go, restaurants, etc.

Program

Sat June 9	Sun June 10	Mon June 11		Tue June 12		Wed June 13	Thur June 14		Fri June 15	
Whitecotton/ Boiler	Whitecotton/ Boiler	Crystal Ball	Boiler	Crystal Ball	Boiler	Crystal Ball	Crystal Ball	Boiler	Crystal Ball	Boiler
			Set posters		Set posters			Set posters		Set posters
		Welcome							FPGA and Electronics Applied to RT Systems 2	
Tutorial	Tutorial	Opening		Triggers		DAQ 1 Medical	DAQ 2 Fusion			
Coffee Brk	Coffee Brk	Coffee Brk		Coffee Brk		Coffee Brk	Coffee Brk		Coffee Brk	
									Poster Session 4 (PD, DAQ, TS, CMTS)	Poster Section #4
Tutorial	Tutorial	Opening	Vendor/ Exhibits	Monitoring Signal processing 1	Vendor/ Exhibits	Upgrades 2	DAQ 3			
				Mini-Oral		Mini-Oral	Mini-Oral		FPGA and Electronics Applied to RT Systems 3	
Lunch	Lunch	Lunch		Lunch		Lunch	Lunch		Closing	
										Remove posters
Tutorial	Tutorial	New Standard Updates Emerging technologies TCA	Poster Section #1	Monitoring Signal processing 2	Poster Section #2	Excursion	DAQ 4	Poster Section #3		
		Mini-Oral		Mini-Oral			Mini-Oral			
Coffee Brk	Coffee Brk	Coffee Brk		Coffee Brk			Coffee Brk			
Tutorial	Tutorial	Poster Session 1 (PF, ISP, FDTL, ERT,FOE, RSA, RSS)		Poster Session 2 (PF, ISP, ERT,FOE, RSA)			Poster Session 3 (PD, DAQ, TS, CMTS)			
		Real Time system architecture		Upgrades 1			FPGA and Electronics Applied to RT Systems 1			
			Remove posters		Remove posters			Remove posters		
		Reception					Conference Dinner			

Abbreviations

PF	Processing Farm
ISP	Intelligent signal processing
FDLT	Fast data transfer links and networks
ERT	Emerging realtime technologies
NS	New standards
FOE	Feedback on experiences
RSA	Realtime system architectures
PD	Programmable devices
DAQ	Data acquisition
TS	Trigger systems
CMTS	Control, monitoring, and test systems
RSS	Realtime safety and security

RT2012 Tutorial sessions
Saturday June 9

ATCA AND MTCA FOR PHYSICS EXPERIMENTS I

Organizer: Ray Larsen, SLAC (xTCA Workshop Chair), along with Zheqiao Geng, SLAC (xTCA Program Chair) and Sergio Zimmermann, LBNL (RT2012 General Chair)

9:00-12h00 Boiler room
12h00-13h30, lunch
13h30-17h00, Boiler room

Workshop (no host) dinner (18h30-20h00)
Anh Hong
2067 University Ave., Berkeley, CA 94704

DATA ACQUISITION SYSTEMS

Organizer: Mariano Ruiz, Technical University of Madrid

13h00-18h00, Whitecotton room

Sunday June 10

ATCA AND MTCA FOR PHYSICS EXPERIMENTS II

Organizer: Ray Larsen, SLAC (xTCA Workshop Chair), along with Zheqiao Geng, SLAC (xTCA Program Chair) and Sergio Zimmermann, LBNL (RT2012 General Chair)

8:00-12h00 Boiler room
12h00-13h30, lunch
13h30-17h00, Boiler room

DATA ANALYSIS WITH GPU

Organizer: Hemant Shukla, Lawrence Berkeley National Laboratory

9:00-12h00 Whitecotton room
12h30-13h30, lunch
13h30-17h00, Whitecotton room

RT2012 Conference Program Details

Monday

Open 1 Welcome and Opening Session

Monday, June 11 8:30-10:40 Crystal Ballroom
Session Chair: Sergio Zimmermann, LBNL, United States, Stefan Ritt, PSI, Switzerland

Open 1-1 Welcome
S. Zimmermann, *LBNL, USA*

Open 1-2 (invited) Dark Energy from the Largest Galaxy Maps
D. Schlegel, *LBNL, USA*

Open 1-3 (invited) National Ignition Facility Integrated Computer Control Systems
C. Marshall, G. Brunton, A. Casey, R. Demaret, J. Fisher, T. Frazier, L. Lagin, B. Reed, R. Shelton, O. Edwards
Lawrence Livermore National Laboratory, USA

Open 1-4 (invited) LHC Trigger & DAQ - an Introductory Overview
N. Neufeld, *CERN, Switzerland*

Coffee break (10:40-11:05)

Opening Session 2

Monday, June 11 11:05-12:25 Crystal Ballroom
Session Chairs: William W. Moses, Lawrence Berkeley National Laboratory, United States Henrik von der Lippe, LBNL

Open 2-1 (invited) The Development of Large-Area Photodetectors with Sub-Millimeter and Sub-Nanosecond Space and Time Resolutions
H. J. Frisch
University of Chicago,: Enrico Fermi Institute and Physics Dept., United States

Open 2-2 (invited) Trigger in HEP: Selected Topics for Young Experimentalists
T. Liu, *FNAL, United States*

Lunch (12:25-13:40)

NSET New Standard, Emerging Technologies and TCA

Monday, June 11 13:40-14:40 Crystal Ballroom
Session Chairs: Zhen-An Liu, Inst. of High Energy Physics, Chinese Academy of Sciences, China, Raymond Larsen, SLAC, United States

NSET-1 HTML 5, Websockets and Sproutcore - Using Emerging Technologies to Control the Dark Energy Camera (DECam)
K. Honscheid, A. Elliott, K. Patton, E. Suchyta, *Ohio State University, United States*; E. Buckley Geer, *Fermi National Accelerator Laboratory, United States*

NSET-2 Recent Progress in Next-Generation Platform Standards for Physics Instrumentation and Controls
R. Larsen
SLAC National Accelerator Laboratory, United States

NSET-3 Scalable SpaceWire Backplane System Using uTCA
T. Yuasa[1], M. Nomachi[2], T. Takahashi[1], M. Ioki[3]
[1]Japan Aerospace Exploration Agency, Institute of Space and Astronautical Science, Japan; [2]Osaka University, Japan; [3]Institute for Unmanned Space Experiment Free Flyer, Japan

MN1 Mini-oral 1

Monday, June 11 14:40-15:30 Crystal Ballroom
Session Chairs: Christian Bohm, Univ Stockholm, Sweden, Denis Calvet, CEA

PS1-2 Automatic System-Level Synthesis for Heterogeneous Platforms
H. A. Andrade, K. Ravindran
National Instruments Corporation, United States

PS1-3 Monitoring and Improving the ALICE Data Taking Efficiency
V. Barroso[1], F. Carena[1], W. Carena[1], S. Chapeland[1], F. Costa[1], E. Denes[2], R. Divia[1], A. Grigore[3], G. Simonetti[4], C. Soos[1], A. Telesca[1], P. Vande Vyvre[1], B. von Haller[1]
[1]CERN, Switzerland; [2]Hungarian Academy of Sciences, Hungary; [3]Polytechnic University of Bucharest, Romania; [4]Universita Bari, Italy

PS1-4 Open-Standard Blade Systems Enable High Performance Applications
S. McClellan, *Texas State University, United States*; K. Austin, A. Deikman, *ZNYX Networks, United States*

PS1-5 An xTCA Compliant and FPGA Based Data Processing Unit for Trigger and Data Acquisition and Trigger Applications
J. Zhao, Z. Liu, H. Xu, *Insititue of High Energy and Physics, China*; W. Kuehn, *II.Physikalisches Institut, Justus-Liebig-Universitaet, Germany*

PS1-7 Performance Evaluation of 8-Channel ADC ATCA Card for Direct Sampling of 1.3 GHz Signals
S. Bou Habib, *ISE-WUT/DESY, Poland*

PS1-9 RF Backplane for MTCA.4 Based LLRF Control System
K. Czuba, *Warsaw University of Technology, Poland*; M. Hoffmann, T. Jezynski, F. Ludwig, H. Schlarb, *DESY, Germany*

PS1-15 Development and Calibration of a Real-Time Airborne Radioactivity Monitor Using Gamma-Ray Spectrometry on a Particulate Filter
R. Casanovas, J. J. Morant, M. Salvado
Universitat Rovira i Virgili, Spain

PS1-14 The XFEL RF Interlock System
M. Penno[1], H. Leich[1], T. Grevsmuehl[2], C. Rueger[1], K. Machau[2]
[1]DESY Zeuthen, Germany; [2]DESY Hamburg, Germany

PS1-17 Asynchronous and Synchronous Implementations of the Autocorrelation Function for the FPGA X-Ray Pixel Array Detector
M. S. Hromalik[1,2], K. S. Green[2], H. T. Philipp[2], M. T. W. Tate[2], S. M. Gruner[2,3]
[1]State University of New York at Oswego, United States; [2]Cornell University, United States; [3]Cornell High Energy Synchrotron Source (CHESS), United States

PS1-18 Real-Time Fast Controller Prototype for J-TEXT Tokamak
W. Zheng, G. Zhuang, M. Zhang, C. Weng, R. Liu, Y. He, T. Ding, X. Zhang
Huazhong University of Science & Technology, China

PS1-19 A Dedicated Processor for Monte Carlo Computation in Radiotherapy
C. Pili[1,2], V. Fanti[1,2], G. R. Fois[1,2], R. Marzeddu[1,2], P. Randaccio[1,2], S. Siddhanta[1,2], J. Spiga[1,2], A. Szostak[1,2]
[1]University of Cagliari, Italy; [2]INFN Sez. Cagliari, Italy

PS1-20 New RFX-Mod Feedback Control System Based on MARTe Real-Time Framework
G. Manduchi, A. Luchetta, C. Taliercio, A. Soppelsa
Consorzio RFX, Italy

PS1-25 A Single-FPGA Full-Time Beam Former
H. Deschamps, *Comissariat a l'Energie Atomique, France*

PS1-26 A Two-Stage Distributed Architecture Designed for DAQ of Thousands-Channel Physical Experiment
K. Song[1,2], P. Cao[1,2], J. Yang[1,2]
[1]University of Science & Technology of China, China; [2]State Key Laboratory of Particle Detection and Electronics, China

PS1-27 An Application Using MicroTCA for Real-Time Event Assembly
R. A. Rivera, *Fermilab, United States*

PS1-28 Digital Programmable Emulator and Analyzer of Radiation Detection Setups
A. Geraci, A. Abba, F. Caponio
Politecnico di Milano, Italy

PS1-12 Firmware Upgrade in xTCA Sytems
D. Makowski[1], A. Mielczarek[1], G. Jablonski[1], P. Predki[1], T. Jezynski[2], H. Schlarb[2], A. Napieralski[1]
[1]Technical University of Lodz, Poland; [2]Deutsche Elektronen-Synchotron, Germany

PS2-30 Advanced Light Source Control System Upgrade Intelligent Local Controller Redesign
E. Norum, *Lawrence Berkeley National Laboratory, USA*

PS1-6 Overview of the Data Acquisition Electronics and Concepts for Photon Experiments and Beamlines at the European XFEL
P. Gessler, C. Youngman, M. Kuster, B. Fernandes, O. Batindek
European X-Ray Free Electron Laser Facility GmbH, Germany

PS1-8 Vector Modulator Card for MTCA-Based LLRF Control System for Linear Accelerators
I. Rutkowski, K. Czuba, *Warsaw University of Technology, Poland*; D. Makowski, A. Mielczarek, *Technical University of Lodz, Poland*; H. Schlarb, F. Ludwig, *Deutsches Elektronen Synchrotron, Germany*

PS1-21 Real Time FPGA-Based Crosstalk Elimination for Multichannel Interferometry Systems in Fusion Diagnostics
S. Hernandez-Montero, J. A. Lopez-Martin, *Universidad Politecnica de Madrid, Spain*; M. Sanchez, L. Esteban, *CIEMAT, Spain*

PS1-23 Parallel Task Management Library for MARTe
D. F. Valcarcel[1], D. Alves[1], A. Neto[1], C. Reux[2], B. B. Carvalho[1], R. Felton[3], P. J. Lomas[3], J. Sousa[1], L. Zabeo[4], JET EFDA Contributors*[5]
[1]Associacao EURATOM/IST, Instituto de Plasmas e Fusao Nuclear, Instituto Superior Tecnico, UTL, Portugal; [2]Ecole Polytechnique, LPP, CNRS UMR 7648, France; [3]Euratom/CCFE Fusion Association, Culham Science Centre, UK; [4]ITER Organisation, France; [5]JET-EFDA, Culham Science Centre, UK

PS1-30 Ultra-Fast Streaming Camera Platform for Scientific Applications
M. Caselle, M. Balzer, S. Chilingaryan, A. Herth, A. Kopmann, U. Stevanovic, M. Vogelgesang
Karlsruhe Institute of Technology, Germany

PS1-1 Implementation of an ATCA/AXIe Board for Fast Control and Data Acquisition Systems of Nuclear Fusion Devices
A. J. N. Batista[1], C. Leong[2], V. Bexiga[2], A. P. Rodrigues[1], A. Combo[1], B. B. Carvalho[1], P. Ricardo[1], J. Fortunato[1], B. Santos[1], P. Carvalho[1], M. Correia[1], J. P. Teixeira[2], I. C. Teixeira[2], J. Sousa[1], B. Goncalves[1], C. A. F. Varandas[1]
[1]Instituto Superior Tecnico - Universidade Tecnica de Lisboa, Portugal; [2]INESC-ID, Portugal

PS1-11 Intelligent Platform Management Controller Software Architecture in ATCA Modules for Fast Control Systems

A. P. Rodrigues[1], M. Correia[1], A. J. N. Batista[1], P. R. Carvalho[1], B. Santos[1], B. B. Carvalho[1], J. Sousa[1], B. Goncalves[1], C. C. M. B. Correia[2], C. A. F. Varandas[1]
[1]Instituto Superior Tecnico - Universidade Tecnica de Lisboa, Portugal; [2]Universidade de Coimbra, Portugal

Coffee break (15:30-15:50)

PS1 Poster Session 1

Monday, June 11 15:50-17:00 Boiler room

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National Instruments Corporation, United States

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S. Bou Habib, *ISE-WUT/DESY, Poland*

PS1-8 Vector Modulator Card for MTCA-Based LLRF Control System for Linear Accelerators
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PS1-9 RF Backplane for MTCA.4 Based LLRF Control System
K. Czuba, *Warsaw University of Technology, Poland*; M. Hoffmann, T. Jezynski, F. Ludwig, H. Schlarb, *DESY, Germany*

PS1-10 Timing Distribution and Synchronization of an ATCA Fast Controller for Fusion Devices
M. Correia[1], J. Sousa[1], B. B. Carvalho[1], A. Combo[1], A. P. Rodrigues[1], A. J. N. Batista[1], B. Santos[1], P. R. F. Carvalho[1], B. Goncalves[1], C. M. B. A. Correia[2], C. A. F. Varandas[1]
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[1]Instituto Superior Tecnico - Universidade Tecnica de Lisboa, Portugal; [2]Universidade de Coimbra, Portugal

PS1-12 Firmware Upgrade in xTCA Sytems
D. Makowski[1], A. Mielczarek[1], G. Jablonski[1], P. Predki[1], T. Jezynski[2], H. Schlarb[2], A. Napieralski[1]
[1]Technical University of Lodz, Poland; [2]Deutsche Elektronen-Synchotron, Germany

PS1-13 Standalone First Level Event Selection Package for the CBM Experiment
I. Kisel[1,2,3], I. Kulakov[1,3], M. Zyzak[1,3]
[1]Goethe University Frankfurt, Germany; [2]FIAS Frankfurt Institute for Advanced Studies, Germany; [3]GSI Helmholtzzentrum fuer Schwerionenforschung, Germany

PS1-14 The XFEL RF Interlock System
M. Penno[1], H. Leich[1], T. Grevsmuehl[2], C. Rueger[1], K. Machau[2]
[1]DESY Zeuthen, Germany; [2]DESY Hamburg, Germany

PS1-15 Development and Calibration of a Real-Time Airborne Radioactivity Monitor Using Gamma-Ray Spectrometry on a Particulate Filter
R. Casanovas, J. J. Morant, M. Salvado
Universitat Rovira i Virgili, Spain

PS1-16 Using Data-Oriented Storage Method to Build a High-Parallel and High-Efficiency Disk Cluster
J. Wu, L. F. Liu, Z. Han, S. Chen, J. Shan, K. Y. Tian, J. Dong
University of Sci.&Tech. of China, China, 230026

PS1-17 Asynchronous and Synchronous Implementations of the Autocorrelation Function for the FPGA X-Ray Pixel Array Detector
M. S. Hromalik[1,2], K. S. Green[2], H. T. Philipp[2], M. T. W. Tate[2], S. M. Gruner[2,3]
[1]State University of New York at Oswego, United States; [2]Cornell University, United States; [3]Cornell High Energy Synchrotron Source (CHESS), United States

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PS1-20 New RFX-Mod Feedback Control System Based on MARTe Real-Time Framework
G. Manduchi, A. Luchetta, C. Taliercio, A. Soppelsa
Consorzio RFX, Italy

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S. Hernandez-Montero, J. A. Lopez-Martin, *Universidad Politecnica de Madrid, Spain*; M. Sanchez, L. Esteban, *CIEMAT, Spain*

PS1-22 A Real-Time Architecture for the Identification of Faulty Magnetic Sensors in the JET Tokamak
A. C. Neto[1], D. Alves[1], B. B. Carvalho[1], G. De Tommasi[2], H. Fernandes[1], P. J. Lomas[3], F. Maviglia[2], F. Sartori[4], A. V. Stephen[3], D. F. Valcarcel[1], L. Zabeo[5]
[1]EURATOM-IST, Portugal; [2]EURATOM-ENEA/CREATE, Italy; [3]EURATOM-CCFE, United Kingdom; [4]Fusion for Energy, Spain; [5]ITER Organisation, France

PS1-23 Parallel Task Management Library for MARTe
D. F. Valcarcel[1], D. Alves[1], A. Neto[1], C. Reux[2], B. B. Carvalho[1], R. Felton[3], P. J. Lomas[3], J. Sousa[1], L. Zabeo[4], JET EFDA Contributors*[5]

[1]*Associacao EURATOM/IST, Instituto de Plasmas e Fusao Nuclear, Instituto Superior Tecnico, UTL, Portugal;* [2]*Ecole Polytechnique, LPP, CNRS UMR 7648, France;* [3]*Euratom/CCFE Fusion Association, Culham Science Centre, UK;* [4]*ITER Organisation, France;* [5]*JET-EFDA, Culham Science Centre, UK*

PS1-24 A Real-Time Data Transmission Method Based on Linux for Physical Experimental Readout Systems

P. Cao[1,2], K. Song[1,2], J. Yang[1,2], K. Zhang[1,2]
[1]*State Key Laboratory of Particle Detection and Electronics, China;* [2]*University of Science and Technology of China, China*

PS1-25 A Single-FPGA Full-Time Beam Former

H. Deschamps, *Comissariat a l'Energie Atomique, France*

PS1-26 A Two-Stage Distributed Architecture Designed for DAQ of Thousands-Channel Physical Experiment

K. Song[1,2], P. Cao[1,2], J. Yang[1,2]
[1]*University of Science & Technology of China, China;* [2]*State Key Laboratory of Particle Detection and Electronics, China*

PS1-27 An Application Using MicroTCA for Real-Time Event Assembly

R. A. Rivera, *Fermilab, United States*

PS1-28 Digital Programmable Emulator and Analyzer of Radiation Detection Setups

A. Geraci, A. Abba, F. Caponio
Politecnico di Milano, Italy

PS1-29 Phase and Amplitude Drift Calibration of the RF Detectors in a MTCA.4 Based LLRF System

J. Piekarski[1], K. Czuba[1], M. Hoffmann[2], W. Jalmuzna[3], F. Ludwig[2], H. Schlarb[2], C. Schmidt[2], B. Yang[2]
[1]*Institute of Electronic Systems, Poland;* [2]*Deutsches Elektronen-Synchrotron, Germany;* [3]*Technical University of Lodz, Poland*

PS1-30 Ultra-Fast Streaming Camera Platform for Scientific Applications

M. Caselle, M. Balzer, S. Chilingaryan, A. Herth, A. Kopmann, U. Stevanovic, M. Vogelgesang
Karlsruhe Institute of Technology, Germany

PS1-31 The LHCb off-Site HLT Farm Demonstration

G. Liu, N. Neufeld, *CERN, Switzerland*

PS1-32 A New Generation of Real-Time Systems in the JET Tokamak

D. M. Alves[1], A. C. Neto[1], D. F. Valcrcel[1], R. Felton[2], J. M. Lopez[3], A. Barbalace[4], L. Boncagni[5], P. Card[2], A. Goodyear[2], S. Jachmich[6,7], P. J. Lomas[2], F. Maviglia[8], P. A. McCullen[2], A. Murari[4], M. Rainford[2], C. Reux[9], F. Rimini[2], F. Sartori[10], A. V. Stephen[2], J. Vega[11], R. Vitelli[12], L. Zabeo[13], K.-D. Zastrow[2]
[1]*Associao EURATOM/IST, Instituto de Plasmas e Fuso Nuclear - Laboratrio Associado, Portugal;* [2]*EURATOM/CCFE Fusion Association, Culham Science Centre, Abingdon, Oxon, OX14 3DB, United Kingdom;* [3]*CAEND.Universidad Politcnica de Madrid, Spain, Spain;* [4]*Associazione EURATOM-ENEA sulla Fusione, Consorzio RFX, Padova, Italy, Italy;* [5]*Associazione EURATOM/ENEA, 00040 Frascati, Italy, Italy;* [6]*Laboratory for Plasma Physics, Ecole Royale Militaire/Koninklijke Militaire School, EURATOM-Associat, Belgium;* [7]*EFDA-CSU, Culham Science Centre, Abingdon, OX14 3DB, UK, United Kingdom;* [8]*Associazione EURATOM-ENEA-CREATE, Univ. di Napoli Federico II, Via Claudio 21, 80125, Napoli, Italy, Italy;* [9]*Ecole Polytechnique, LPP, CNRS UMR 7648, 91128 Palaiseau, France, France;*[10]*Fusion for Energy, 08019 Barcelona, Spain, Spain;* [11]*Laboratorio Nacional de Fusion, Asociacion EURATOM-CIEMAT, Madrid, Spain, Spain;* [12]*Dipartimento di Informatica, Sistemi e Produzione, Universit di Roma Tor Vergata 00133 Rome, Italy, Italy;* [13]*ITER, St. Paul-Lez-Durance 13108, France, France*

RTSA Real Time System Architectures

Monday, June 11 17:00-18:40 Crystal Ballroom
Session Chairs: Ryosuke Itoh, KEK, Japan,
Klaus Honscheid, Ohio State University

RTSA-1 Auger ACCESS - Remote Monitoring and Controlling the Auger Experiment
T. Jejkal[1], H.-J. Mathes[1], J. Rautenberg[2], M. Kleifges[1], H. Gemmeke[1]
[1]Karlsruhe Institute of Technology, Germany; [2]University of Wuppertal, Germany

RTSA-2 Belle2Link: an Unified High Speed Data Collection with Slow Control in Belle II Experiment
Z.-A. Liu, D. Sun, J. Zhao, H. Lin, F. Guo, C. Wang, *Inst. of High Energy Physics, Chinese Academy of Sciences, China*; M. Nakao, R. Itoh, T. Higuchi, S. Y. Suzuki, *KEK, Japan*

RTSA-3 A System for Monitoring and Tracking the LHC Beam Spot Within the ATLAS High Level Trigger
R. Bartoldus, J. Cogan, A. Salnikov, E. Strauss, *SLAC, United States*; F. Winklmeier, *CERN, Switzerland*

RTSA-4 Data Flow and High Level Trigger of Belle II DAQ System
R. Itoh, T. Higuchi, M. Nakao, S. Y. Suzuki, *KEK, Japan*; S. Lee, *Korea University, Korea*

RTSA-5 A Prototype Clock System for LHAASO WCDA
L. Shang[1,2], K. Song[1,2], P. Cao[1,2], C. Li[1,2], S. Liu[1,2], Q. An[1,2]
[1]University of Science and Technology of China, China; [2]State Key Laboratory of Particle Detection and Electronics, China

Conference reception (Boiler Room) (19h00-20h30)

Tuesday

TRG Triggers

Tuesday, June 12 08:40-10:40 Crystal Ballroom
Session Chairs: Micheal LeVine, BNL, United States,
Lorne J. Levinson, Weizmann Institute of Science, Israel

TRG-1 A Hardware Tracker Finder (FTK) for ATLAS Trigger
G. Volpi, *INFN Frascati, U of Chicago*

TRG-2 The ALICE High Level Trigger: the 2011 Run Experience.
T. Kollegger (*), *FIAS/University of Frankfurt, Germany*

TRG-3 The evolution and performance of the ATLAS calorimeter-based triggers in 2011 and 2012
M. Wessels, *University of Heidelberg, KIP, Germany; ;* I. Radoslavova Hristova, *Humboldt-Universitaet zu Berlin, Germany*

TRG-4 Use of Expert System and Data Analysis Technologies in Automation of Error Detection, Diagnosis and Recovery for ATLAS Trigger-DAQ Controls Framework
A. Kazarov, *Petersburg Nuclear Physics Institute, NRC Kurchatov Institute, Russia*; G. Lehmann Miotto, L. Magnoni, *CERN, Switzerland*; A. Corso Radu, *University of California Irvine, USA*

TRG-5 Evolution and Performance of the ATLAS Trigger System with p-p Collisions at 7 TeV
T. Kono, *IFAE, Spain*

TRG-6 Recent Experience and Future Evolution of the CMS High Level Trigger System
A. C. Spataru[1], G. Bauer[2], U. Behrens[3], J. Branson[4], S. Bukowiec[1], O. Chaze[1], S. Cittolin[5,4], J. A. Coarasa[1], C. Deldicque[1], M. Dobson[1], A. Dupont[1], S. Erhan[4], D. Gigi[1], F. Glege[1], R. Gomez-Reino[1], C. Hartl[1], A. Holzner[4], L. Masetti[1], F. Meijers[1], E. Meschi[1], R. K. Mommsen[6], C. Nunez-Barranco-Fernandez[1], V. O'Dell[6], L. Orsini[1], C. Paus[2], A. Petrucci[1], M. Pieri[4], G. Polese[1], A. Racz[1], O. Raginel[2], H. Sakulin[1], M. Sani[4], C. Schwick[1], F. Stoeckli[2], K. Sumorok[2]
[1]CERN, Switzerland; [2]Massachusetts Institute of Technology, USA; [3]DESY, Germany; [4]University of California, California, USA; [5]Eidgenossische Technische Hochschule, Switzerland; [6]FNAL, USA

Coffee break (10:40-11:05)

MSP1 Monitoring and Signal Processing 1

Tuesday, June 12 11:05-12:25 Crystal Ballroom
Session Chairs: Mike E. Huffer, SLAC, United States,
Sascha M. Schmeling, CERN, Switzerland

MSP1-1 Novel, Highly-Parallel Software for the Online Storage System of the ATLAS Experiment at CERN: Design and Performances
T. Colombo[1,2], W. Vandelli[1]
[1]CERN, Switzerland; [2]Universita' di Pavia, Italy

MSP1-2 Advanced Visualization System for Monitoring the ATLAS TDAQ Network in Real-Time
S. Batraneanu, *University of California, Irvine, United States*; D. Campora Perez, *University of Seville, Spain*; B. Martin, D. Savu, S. Stancu, *CERN, Switzerland*; L. Leahu, *Politehnica University Bucharest, Romania*

MSP1-3 A High-Throughput Platform for Real-Time X-Ray Imaging
S. A. Chilingaryan[1], M. Vogelgesang[1], T. dos Santos Rolo[1], A. Mirone[2], A. Kopmann[1]
[1]Karlsruhe Institute of Technology, Germany; [2]European Synchrotron Radiation Facility, France

MSP1-4 Architecture and Operation of the Control System for ALICE Detector at CERN
P. Chochula, *CERN, Switzerland*

Lunch (12:25-13:40)

MSP2 Monitoring and Signal Processing 2

Tuesday, June 12 13:40-14:40 Crystal Ballroom
Session Chairs: Denis Calvet, CEA, and Stefan Ritt, PSI

MSP2-1 artdaq: An Event Filtering Framework for Fermilab Experiments
K. Biery, C. Green, J. Kowalkowski, M. Paterno, R. Rechenmacher
Fermi National Accelerator Lab, United States

MSP2-2 FPGA/NIOS Implementation of an Adaptive FIR Filter Using Linear Prediction to Reduce Narrow-Band RFI for Radio Detection of Cosmic Rays
Z. Szadkowski, *University of Lodz, Poland*; D. Fraenkel, A. M. van den Berg, *University of Groningen, Netherlands*

MSP2-3 FPGA-Based Algorithm for Center of Gravity Calculation of Clustered Signals
A. A. Ushakov[1], B. Mindur[2], T. Fiutowski[2], C. Schulz[1], F. Winklmeier[1]
[1]Helmholtz-Zentrum Berlin, Germany; [2]AGH University for Science and Technology, Poland

MO3 Mini-orals 3

Tuesday, June 12 14:40-15:40 Crystal Ballroom
Session Chairs: Micheal LeVine, BNL, United States,
Patrick Le Du, IPNL, France

PS2-3 A MAC Layer Congestion Control Method to Achieve High Network Performance for EAST Tokamak
K. Shi[1,2], Y. Shu[2], S. Lin[1], J. Luo[3]
[1]Tianjin University of Technology, China; [2]Tianjin University, China; [3]Academia Sinica, China

PS2-4 High Performance Event Building with InfiniBand Network in CBM Experiment
S. Linev
GSI Helmholtzzentrum fuer Schwerionenforschung, Germany

PS2-5 Modulator-Based, High Bandwidth Optical Links for HEP Experiments
W. S. Fernando, R. W. Stanek, D. G. Underwood, D. Lopez
Argonne National Lab, United States

PS2-9 A High Density Time-to-Digital Converter Prototype Module for BES□ End-Cap TOF Upgrade
H. Fan, C. Feng, W. Sun, C. Yin, S. Liu, Q. An
University of Science and Technology of China, China

PS2-10 Development of White Rabbit Interface for Synchronous Data Acquisition and Timing Control
Q. Du, G. Gong, W. Pan, H. Lu, *Tsinghua University, China*

PS2-18 Data Formatter System for the ATLAS Fast TracKer

J. Olsen, T. Liu, B. Penning, *Fermi National Accelerator Laboratory, United States*; H. L. Li, *University of Chicago, United States*

PS2-20 Commissioning and Performance of a Fast Level-2 Trigger System at VERITAS
B. Zitzer[1], A. Weinstein[2], M. Schroedter[3], M. Orr[3], M. Oberling[1], A. Kreps[1], F. Krennrich[2], G. Drake[1], K. Byrum[1], J. T. Anderson[1]
[1]Argonne National Laboratory, United States; [2]Iowa State University, United States; [3]Smithsonian Astrophysical Observatory, United States

PS2-21 The ATLAS Hadronic Tau Trigger
C. Cuenca Almenar, Andrew Karamaoun *Yale University, Switzerland*

PS2-24 Multifunction-Timing Card lTTEV2 for CoDaC Systems of Wendelstein 7-X
J. Schacht, *Max-Planck-Institute for Plasmaphysics, Germany*; J. Skodzik, *University Rostock, Germany*

PS2-26 HAWC TeV Gamma Ray Observatory Trigger System
M. DuVernois, *University of Wisconsin, United States*

PS2-27 Development of the Control Card for the Digitizers of the Second Generation Electronics of AGATA
D. Barrientos[1,2,3], V. Gonzalez[3], M. Bellato[2], A. Gadea[1], D. Bazzacco[2], J. M. Blasco[3], D. Bortolato[2], F. J. Egea[1,3], R. Isocrate[2], A. Pullia[4], G. Rampazzo[2], E. Sanchis[3], A. Triossi[2]
[1]Instituto de Fisica Corpuscular (CSIC-UV), Spain; [2]Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy; [3]Departamento Ingeniera Electronica, Universitat de Valencia, Spain; [4]Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy

PS2-29 Evolution and Performance of Electron and Photon Triggers in ATLAS in the Year 2011
A. Tricoli, *CERN, Switzerland*; T. Kono, *DESY, Germany*; V. Solovyev, *B.P. Konstantinov Petersburg Nuclear Physics Institute, Russia*

PS2-2 Low Power, Accurate Time Synchronization MAC Protocol for Real-Time Wireless Data Acquisition
J. Zhang, J. Wu, Z. Han, L. Liu, K. Tian
University of Science and Technology of China, China

PS2-6 Waveform Timing Algorithms with a 5 GS/s Fast Pulse Sampling Module
J. Wang[1,2], L. Zhao[1,2], C. Feng[1,2], Y. Zhang[1,2], S. Liu[1,2], Q. An[1,2]
[1]University of Science and Technology of China, China; [2]Department of Modern Physics, University of Science and Technology of China, China

PS2-1 High Performance FPGA-Based DMA Interface for PCIe
H. Kavianipour, S. Muschter, C. Bohm
Stockholm University, Sweden

PS2-12 Real-Time Data Analysis Using the WaveDREAM Data Acquisition System
H. Friederich[1,2], G. Davatz[1,2], U. Gendotti[1], H. Meyer[1], D. Murer[1,2]
[1]Arktis Radiation Detectors Ltd, Switzerland; [2]ETH Zurich, Institute for Particle Physics, Switzerland

PS2-15 VHDL Design of Digital Adaptive Filters for PANDA Signal Processing
M. Greco, M. P. Bussa, M. Destefanis, M. Maggiora, S. Spataro
University of Torino and INFN, Italy

PS2-11 A High-Resolution Time-to-Digital Converter Based on Multi-Phase Clock Implement in Field-Programmable-Gate-Array
Z. Yin, S. Liu, X. Hao, S. Gao, Q. An
University of Science and Technology of China, China

PS2-17 Optimization of the detection of very inclined showers using a spectral DCT trigger in arrays of surface detectors
Z. Szadkowski, *University of Lodz, Poland*

PS2-19 COTS Real Time Quench Detection System for Superconducting Magnets
R. Rajagopal, *Verivolt LLC., United States*; S. Wunder, *National Instruments, United States*

PS2-28 FPGA Implementation of the 32-Point DFT for a Wavelet Trigger of Cosmic Rays Experiments
Z. Szadkowski, *University of Lodz, Poland*

PS2-22 The ATLAS Muon Trigger Performance in Proton-Proton Collisions at Sqrt(s)=7 TeV
K. Nagano, *KEK, Japan*; K. Black, *Boston University, US*; T. Matsushita, *Kobe University, Japan*

Coffee break (15:30-15:50)

PS2 Poster Session 2

Tuesday, June 12 15:50-17:10 Boiler room

PS2-1 High Performance FPGA-Based DMA Interface for PCIe
H. Kavianipour, S. Muschter, C. Bohm
Stockholm University, Sweden

PS2-2 Low Power, Accurate Time Synchronization MAC Protocol for Real-Time Wireless Data Acquisition
J. Zhang, J. Wu, Z. Han, L. Liu, K. Tian
University of Science and Technology of China, China

PS2-3 A MAC Layer Congestion Control Method to Achieve High Network Performance for EAST Tokamak
K. Shi[1,2], Y. Shu[2], S. Lin[1], J. Luo[3]
[1]Tianjin University of Technology, China; [2]Tianjin University, China; [3]Academia Sinica, China

PS2-4 High Performance Event Building with InfiniBand Network in CBM Experiment
S. Linev
GSI Helmholtzzentrum fuer Schwerionenforschung, Germany

PS2-5 Modulator-Based, High Bandwidth Optical Links for HEP Experiments
W. S. Fernando, R. W. Stanek, D. G. Underwood, D. Lopez
Argonne National Lab, United States

PS2-6 Waveform Timing Algorithms with a 5 GS/s Fast Pulse Sampling Module
J. Wang[1,2], L. Zhao[1,2], C. Feng[1,2], Y. Zhang[1,2], S. Liu[1,2], Q. An[1,2]
[1]University of Science and Technology of China, China; [2]Department of Modern Physics, University of Science and Technology of China, China

PS2-7 The Study of Multi-Channel High Precision Pulse Synchronizer
F. Li[1,2], G. Jin[1,2]
[1]State Key Laboratory of Particle Detection and Electronics, China; [2]University of Science and Technology of China, China

PS2-8 Sophisticated Online Analysis in ADC Boards
P. Wuestner[1], A. Erven[1], W. Erven[1], G. Kemmerling[1], H. Kleines[1], P. Kulessa[2], P. Marciniewski[3], H. Ohm[1], K. Pysz[1], V. Serdyuk[1], S. van Waasen[1], P. Wintz[1]
[1]Research Centre Juelich, Germany; [2]Institute of Nuclear Physiks PAN, Poland; [3]Uppsala University, Sweden

PS2-9 A High Density Time-to-Digital Converter Prototype Module for BES□ End-Cap TOF Upgrade
H. Fan, C. Feng, W. Sun, C. Yin, S. Liu, Q. An
University of Science and Technology of China, China

PS2-10 Development of White Rabbit Interface for Synchronous Data Acquisition and Timing Control
Q. Du, G. Gong, W. Pan, H. Lu, *Tsinghua University, China*

PS2-11 A High-Resolution Time-to-Digital Converter Based on Multi-Phase Clock Implement in Field-Programmable-Gate-Array
Z. Yin, S. Liu, X. Hao, S. Gao, Q. An
University of Science and Technology of China, China

PS2-12 Real-Time Data Analysis Using the WaveDREAM Data Acquisition System
H. Friederich[1,2], G. Davatz[1,2], U. Gendotti[1], H. Meyer[1], D. Murer[1,2]
[1]Arktis Radiation Detectors Ltd, Switzerland; [2]ETH Zurich, Institute for Particle Physics, Switzerland

PS2-13 DSP Based Smart Sensorless Stepping Motor Driver for LHC Collimators
A. Masi, M. Butcher, R. Losito, R. Picatoste Ruilope
CERN, Switzerland

PS2-14 High Accuracy Reading Algorithm for Ironless Linear Position Sensor
A. Masi, A. Danisi, M. Di Castro, R. Losito
CERN, Switzerland

PS2-15 VHDL Design of Digital Adaptive Filters for PANDA Signal Processing
M. Greco, M. P. Bussa, M. Destefanis, M. Maggiora, S. Spataro
University of Torino and INFN, Italy

PS2-16 Experience with the Custom-Developed ATLAS Trigger Monitoring and Reprocessing Infrastructure
V. Bartsch, *University of Sussex, United Kingdom*; S. George, *Royal Holloway University of London, United Kingdom*; M. zur Nedden, *Humboldt-Universitaet zu Berlin, Germany*

PS2-17 Optimization of the detection of very inclined showers using a spectral DCT trigger in arrays of surface detectors
Z. Szadkowski, *University of Lodz, Poland*

PS2-18 Data Formatter System for the ATLAS Fast TracKer
J. Olsen, T. Liu, B. Penning, *Fermi National Accelerator Laboratory, United States*; H. L. Li, *University of Chicago, United States*

PS2-19 COTS Real Time Quench Detection System for Superconducting Magnets
R. Rajagopal, *Verivolt LLC., United States*; S. Wunder, *National Instruments, United States*

PS2-20 Commissioning and Performance of a Fast Level-2 Trigger System at VERITAS
B. Zitzer[1], A. Weinstein[2], M. Schroedter[3], M. Orr[3], M. Oberling[1], A. Kreps[1], F. Krennrich[2], G. Drake[1], K. Byrum[1], J. T. Anderson[1]
[1]Argonne National Laboratory, United States; [2]Iowa State University, United States; [3]Smithsonian Astrophysical Observatory, United States

PS2-21 The ATLAS Hadronic Tau Trigger
C. Cuenca Almenar, Andrew Karamaoun, *Yale University, Switzerland*

PS2-22 The ATLAS Muon Trigger Performance in Proton-Proton Collisions at Sqrt(s)=7 TeV
K. Nagano, *KEK, Japan*; K. Black, *Boston University, US*; T. Matsushita, *Kobe University, Japan*

PS2-24 Multifunction-Timing Card lTTEV2 for CoDaC Systems of Wendelstein 7-X
J. Schacht, *Max-Planck-Institute for Plasmaphysics, Germany*; J. Skodzik, *University Rostock, Germany*

PS2-25 The ATLAS Jet Trigger
M. Campanelli, *university college london, United Kingdom*; L. Lopes, *Laboratorio de Instrumentacao e Fisica Experimental de Particulas (PT), Portugal*

PS2-26 HAWC TeV Gamma Ray Observatory Trigger System
M. DuVernois, *University of Wisconsin, United States*

PS2-27 Development of the Control Card for the Digitizers of the Second Generation Electronics of AGATA
D. Barrientos[1,2,3], V. Gonzalez[3], M. Bellato[2], A. Gadea[1], D. Bazzacco[2], J. M. Blasco[3], D. Bortolato[2], F. J. Egea[1,3], R. Isocrate[2], A. Pullia[4], G. Rampazzo[2], E. Sanchis[3], A. Triossi[2]
[1]Instituto de Fisica Corpuscular (CSIC-UV), Spain; [2]Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy; [3]Departamento Ingeniera Electronica, Universitat de Valencia, Spain; [4]Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy

PS2-28 FPGA Implementation of the 32-Point DFT for a Wavelet Trigger of Cosmic Rays Experiments
Z. Szadkowski, *University of Lodz, Poland*

PS2-29 Evolution and Performance of Electron and Photon Triggers in ATLAS in the Year 2011

A. Tricoli, *CERN, Switzerland*; T. Kono, *DESY, Germany*; V. Solovyev, *B.P. Konstantinov Petersburg Nuclear Physics Institute, Russia*

PS2-30 Advanced Light Source Control System Upgrade Intelligent Local Controller Redesign
E. Norum, *Lawrence Berkeley National Laboratory, USA*

Design Considerations of Ad-Hoc Wireless Building Radiation Monitoring Network for Nuclear Accident Emergency Response Applications
H.-H. Tseng, *Institute of Nuclear Energy Research, Taiwan*; H.-I. Lin, T.-P. Wang, T.-C. Hung, *National Taipei University of Technology, Taiwan*

UPG1 Upgrades 1

Tuesday, June 12 17:15-18:15 Crystal Ballroom
Session Chairs: Martin Purschke, BNL, United States,
David J. Abbott, Jefferson Lab, United States

UPG1-1 MEP V2, the New Event Building Protocol for the Upgraded LHCb Experiment
R. Schwemmer, N. Neufeld, G. Liu, *CERN, Switzerland*

UPG1-2 A New Readout Control System for the LHCb Upgrade at CERN
F. Alessio, R. Jacobsson, *CERN, Switzerland*

UPG1-3 Topological and Central Trigger Processor for 2014 LHC luminosities
J. T. Childers, G. Anders, B. Bauss, D. Berge, V. B□uscher, R. Degele, E. Dobson, A. Ebling, N. Ellis, P. Farthouat, C. Gabaldon, B. Gorini, S. Haas, W. Ji, M. Kaneda, S. Maettig, A. Messina, C. Meyer, S. Moritz, T. Pauly, R. Pottgen, U. Sch□afer, E. Simioni, R. Spiwoks, S. Tapprogge, T. Wengler, V. Wengler, *CERN, Switzerland*

Wednesday

DAQ1 Data Acquisition 1 / Medical Imaging

Wednesday, June 13 08:30-10:40 Crystal Ballroom
Session Chairs: Martin Grossmann, PSI; Marc Weber, Karlsruher Institüt für Technologie

DAQ1-1 (invited) The Trend of Data Path Structures for Data Acquisition Systems (DAQ) in Positron Emission Tomography (PET) Systems
E. Kim, P. D. Olcott, K. J. Hong, J. Y. Yeom, C. S. Levin
Stanford University, USA

DAQ1-2 Design of a Real-Time FPGA-Based DAQ for the LabPET II, an APD-Based Scanner Dedicated to Small Animal PET Imaging
L. Njejimana, M.-A. Tetrault, L. Arpin, A. Burghgraeve, P. Maille, J.-C. Lavoie, C. Paulin, K. C. Koua, H. Bouziri, S. Panier, M. W. Ben Attouch, M. Abidi, J.-F. Pratte, R. Lecomte, R. Fontaine
Universite de Sherbrooke, Canada

DAQ1-3 A Building Block for Nuclear Medicine Imaging Systems Data Acquisition
T. K. Lewellen, R. S. Miyaoka, D. DeWitt, S. Hauck
University of Washington, United States

DAQ1-4 3D Ultrasound Computer Tomography for Breast Cancer Diagnosis
M. Balzer, M. Birk, R. Dapp, A. Menshikov, M. Zapf, H. Gemmeke, N. Ruiter
KIT, Germany

DAQ1-5 FPGA-Based Multi-Channel DAQ Systems with External PCI Express Link to GPU Compute Servers
T. Bergmann[1], D. Bormann[1], M. A. Howe[2], M. Kleifges[1], A. Kopmann[1], N. Kunka[1], A. Menshikov[1], D. Tcherniakhovski[1]
[1]Karlsruhe Institute of Technology, Germany; [2]University of North Carolina, USA

DAQ1-6 Field-Programmable Gate Array (FPGA) Firmware for the Fermilab E906 (SeaQuest) Trigger
J. Wu, *FNAL, IL*; S.-H. Shiu, *Institute of Physics, Academia Sinica, Taiwan*

Coffee break (10:40-11:05)

UPG2 Upgrades 2

Wednesday, June 13 11:05-12:05 Crystal Ballroom
Session Chairs: Ted Liu, FNAL, United States,
Frank Winklmeier, CERN, Switzerland

UPG2-1 The Generic Evaluation Tool for the LHCb Event Builder Network Upgrade
G. Liu, N. Neufeld, *CERN, Switzerland*

UPG2-2 Upgrade Project and Plans for the ATLAS Detector and Trigger
F. Pastore, R. Vari
Royal Holloway University of London, United Kingdom

UPG2-3 Associative Memories for L1 Track Triggering in LHC Environment
D. Magalotti[1], E. Pedreschi[1], A. Annovi[1], P. Giannetti[1], M. Piendibene[1,2], G. Broccolo[3], F. Palla[1,3], R. Dell'Orso[1], F. Ligabue[3], S. Taroni[1,4], L. Servoli[1], A. Nappi[1,4]
[1]INFN, Italy; [2]Universit di Pisa, Italy; [3]Scuola Normale Superiore, Italy; [4]Universita' degli studi di Perugia, Italy

MO4 Mini-orals 4

Wednesday, June 13 12:05-12:25 Crystal Ballroom
Session Chairs: Niko Neufeld, CERN, Switzerland,
Rejean Fontaine, U. Sherbrooke, Canada

PS3-1 Readout Electronics and Data Acquisition of a Time of Flight Detector for Positron Emission Tomography
J. Y. Yeom, V. Spanoudaki, K. J. Hong, C. S. Levin
Stanford University, United States

PS3-3 Design of the Trigger Interface and Distribution Board for CEBAF 12 GeV Upgrade
W. Gu, D. Abbott, C. Cuevas, G. Heyes, E. Jastrzembski, B. Moffit, B. Raydo, J. Wilson, H. Dong, S. Kaneta, N. Nganga, C. Timmer, V. Gyurjyan
Jefferson Lab, United States

PS3-14 The Readout Electronics of the Micromegas-Based Large Time Projection Chamber Prototype for the International Linear Collider
D. Calvet, D. Attie, D. Besin, P. Colas, R. Joannes, A. Le Coguie, S. Lhenoret, I. Mandjavidze, M. Riallot, W. Wang, E. Zonca
CEA-IRFU, France

PS3-18 Design of an Optical Uplink with 10GBit/s Link Between PCIe and MicroTCA
H. Kleines, P. Wüstner, A. Ackens, M. Drochner, P. Kämmerling, S. van Waasen, M. Ramm
Forschungszentrum Jülich, Germany

PS3-21 Development of an AMC Module MMC
P. Kaemmerling, M. Drochner, H. Kleines, S. van Waasen, M. Ramm, A. Ackens
Forschungszentrum Juelich, Germany

PS4-10 New strategy for the control of low frequency large band mechanical suspensions and inertial platforms
F. Barone[1,2], F. Acernese[1,2], R. De Rosa[3,2], G. Giordano[1], R. Romano[1,2]
[1]Universita'di Salerno, Italy; [2]Istituto Nazionale di Fisica Nucleare, Italy; [3]Universita' di Napoli Federico II, Italy

PS3-39 SEUs Tolerance in FPGAs Based Digital LLRF System for XFEL
M. K. Grecki, *DESY, Hamburg, Germany*

PS3-41 Multiple Register Synchronization with a High-Speed Serial Link Using the Aurora Protocol
D. Barrientos[1,2,3], V. Gonzalez[3], M. Bellato[2], A. Gadea[1], D. Bazzacco[2], J. M. Blasco[3], D. Bortolato[2], F. J. Egea[1,3], R. Isocrate[2], A. Pullia[4], G. Rampazzo[2], E. Sanchis[3], A. Triossi[2]
[1]Instituto de Fisica Corpuscular (CSIC-UV), Spain; [2]Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy; [3]Departamento Ingeniera Electronica, Universitat de Valencia, Spain; [4]Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy

PS3-42 Graphical User Interface for Serial Protocols Through a USB Link
D. Barrientos[1,2,3], V. Gonzalez[3], M. Bellato[2], A. Gadea[1], D. Bazzacco[2], J. M. Blasco[3], D. Bortolato[2], F. J. Egea[1,3], R. Isocrate[2], A. Pullia[4], G. Rampazzo[2], E. Sanchis[3], A. Triossi[2]
[1]Instituto de Fisica Corpuscular (CSIC-UV), Spain; [2]Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy; [3]Departamento Ingeniera Electronica, Universitat de Valencia, Spain; [4]Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy

EXC Excursion

Wednesday, June 13 12:30-18:00

Thursday

DAQ2 Data Acquisition 2 / Fusion

Thursday, June 14 08:30-10:40 Crystal Ballroom
Session Chairs: Carlos Varandas, Instituto de Plasmas e Fuso Nuclear, Kay Rehlich, DESY, Germany

DAQ2-1 (invited) Trends on Control and Data Acquisition in Fusion Devices: Towards High Availability
B. Goncalves
Associao Euratom-IST, Instituto de Plasmas e Fuso Nuclear-Laboratrio Associado, Instituto Superi, Portugal

DAQ2-2 Feedforward Power Distortion Correction in RF Power Delivery Systems for Plasma Processing Systems
D. J. Coumou, *MKS, ENI Products, United States*

DAQ2-3 Prototyping Control and Data Acquisition for the ITER Neutral Beam Test Facility
A. Luchetta[1], G. Manduchi[1], A. Soppelsa[1], C. Taliercio[1], F. Paolucci[2], F. Sartori[2], P. Barbato[1], M. Breda[1], R. Capobianco[1], F. Molon[1], M. Moressa[1], S. Polato[1], P. Simionato[1], E. Zampiva[1]
[1]Consorzio RFX - CNR, Italy; [2]Fusion for Energy, Spain

DAQ2-4 Real-Time Processing System for the JET Hard X-Ray and Gamma-Ray Profile Monitor Enhancement
A. M. Fernandes[1], R. C. Pereira[1], A. Neto[1], D. F. Valcarcel[1], J. Sousa[1], B. B. Carvalho[1], V. Kiptily[2], B. Syme[2], P. Blanchard[3], A. Murari[4], C. M. B. A. Correia[5], C. A. F. Varandas[1], JET-EFDA Contributors[6]
[1]Instituto Superior Tecnico, Universidade Tecnica de lisboa, Portugal; [2]Culham Science Centre, UK; [3]Ecole Polytechnique Federale de Lausanne (EPFL), CRPP, Switzerland; [4]Consorzio RFX, Italy; [5]Dept. de Fisica, Universidade de Coimbra, Portugal; [6]See the Appendix of F. Romanelli et al., Proceedings of the 23rd IAEA Fusion Energy Conference 2010, Korea

DAQ2-5 Study of Radiation Damage in Front-End Electronics Components
T. Higuchi, M. Nakao, R. Itoh, S. Y. Suzuki, *High Energy Accelerator Research Organization, Japan*; E. Nakano, *Osaka City University, Japan*

DAQ2-6 Readout Hardware and Firmware Architecture of the HFT PXL Detector at STAR
J. Schambach[1], L. Greiner[2], T. Stezelberger[2], X. Sun[2], M. Szelezniak[2,3], C. Vu[2]
[1]University of Texas at Austin, United States; [2]Lawrence Berkeley National Laboratory, United States; [3]IPHC (Institut Pluridisciplinaire Hubert Curien), France

Coffee break (10:40-11:05)

DAQ3 Data Acquisition 3

Thursday, June 14 11:05-12:25 Crystal Ballroom
Session Chair: Masaharu Nomachi, Osaka Univ., Japan, and Riccardo Paoletti, University of Siena and INFN Pisa

DAQ3-1 The Belle II Pixel Detector Data Acquisition and Reduction System
B. Spruck[1], T. Gessler[1], W. Kuehn[1], S. Lange[1], H. Lin[2], Z. Liu[2], D. Muenchow[1], H. Xu[1,2], J. Zhao[2]
[1]University Giessen, Germany; [2]Institute of High Energy Physics, China

DAQ3-2 Design Concepts for a Hierarchical Synchronized Data Acquisition Network for CBM
F. Lemke, U. Bruening, *University of Heidelberg, Germany*

DAQ3-3 Electromagnetic Calorimeter Trigger for PANDA Experiment
Z.-A. Liu, Q. Wang, H. Xu, J. Zhao, H. Lin, *Inst. of High Energy Physics, Chinese Academy of Sciences, China*; T. Gessler, S. Lange, D. Muenchow, B. Spruck, W. Kuehn, *Justus-Libig-universitat Giessen, Germany*

DAQ3-4 Implementation and First Results of the Real-Time Computing System for the Gamma Ray Energy Tracking in-Beam Nuclear Array (GRETINA)
C. M. Campbell[1], I.-Y. Lee[1], M. Cromaz[1], D. Doering[1], C. Lionberger[1], D. C. Radford[2], T. Stezelberger[1], S. Zimmermann[1]
[1]Lawrence Berkeley National Laboratory, United States; [2]Oak Ridge National Laboratory, United States

Lunch (12:25-13:40)

DAQ4 Data Acquisition 4

Thursday, June 14 13:40-14:40 Crystal Ballroom
Session Chairs: Pierre Andre Amaudruz, Triumf, Canada, Bruno Goncalves, IPFN, Lisbon, Portugal, Portugal

DAQ4-1 Extending the IceCube DAQ System by Integration of the Generic, High-Speed Sorter Module TESS
C. C. W. Robson, *Stockholms universitet, Sweden*; K. Hanson, *Universit Libre de Bruxelles, Belgium*

DAQ4-2 Readout of GEM Stacks with the CERN SRS System
M. L. Purschke
Brookhaven National Laboratory, United States

DAQ4-3 GPS Timing and Control System for the HAWC Experiment
A. U. Abeysekara, D. Edmunds, J. T. Linnemann, T. N. Ukwatta
Michigan State University, United States

MO6 Mini-orals 6

Thursday, June 14 14:40-15:40 Crystal Ballroom
Session Chair: Guenter Eckerlin, DESY, Germany, Jean Pierre Martin, U. Montreal, Canada

PS3-24 Research of Long Distance Clock Distribution System
Y. Yang, K. Hanson, T. Meures
Interuniversity Insitute for High Energies (IIHE), Brussels, Belgium

PS3-25 Development of the Data Acquisition System of a Large TPC for the ILC
G. W. P. De Lentdecker, E. Verhagen, Y. Yang, *Universite Libre de Bruxelles, Belgium*; L. Jonsson, B. Lundberg, U. Mjornmark, A. Oskarsson, L. Osterman, E. Stenlund, *Lund University, Sweden*

PS3-26 Real-Time Performance of Commercial Intel-Based VME Controllers for the CODA Data Acquisition System
B. J. Moffit, *Jefferson Lab, United States*

PS3-27 A Readout System Utilizing the APV25 ASIC for the Forward GEM Tracker in STAR
G. J. Visser[1], J. T. Anderson[2], B. Buck[3], A. S. Kreps[2], T. Ljubicic[4]
[1]Indiana University, United States; [2]Argonne National Laboratory, United States; [3]Massachusetts Institute of Technology, United States; [4]Brookhaven National Laboratory, United States

PS3-28 A Comprehensive Zero-Copy Architecture for High Performance Distributed Data Acquisition over Advanced Network Technologies for the CMS Experiment
A. Petrucci[1], G. Bauer[2], U. Behrens[3], J. Branson[4], S. Bukowiec[1], O. Chaze[1], S. Cittolin[5], J. A. Coarasa Perez[1], C. Deldicque[1], M. Dobson[1], A. Dupont[1], S. Erhan[6], D. Gigi[1], F. Glege[1], R. Gomez - Reino[1], C. Hartl[1], A. Holzner[4], L. Masetti[1], F. Meijers[1], E. Meschi[1], R. Mommsen[7], C. Nunez-Barranco-Fernandez[1], V. O'Dell[7], L. Orsini[1], C. Paus[2], M. Pieri[4], G. Polese[1], A. Racz[1], O. Raginel[2], H. Sakulin[1], M. Sani[4], C. Schwick[1], A. C. Cristian Spataru[1], F. Stoeckli[2], K. Sumorok[2]
[1]CERN, Switzerland; [2]Massachusetts Institute of Technology, USA; [3]DESY, Germany; [4]University of California, San Diego, USA; [5]Eidgenssische Technische Hochschule, Switzerland; [6]University of California, Los Angeles, USA; [7]FNAL, USA

PS1-29 Phase and Amplitude Drift Calibration of the RF Detectors in a MTCA.4 Based LLRF System
J. Piekarski[1], K. Czuba[1], M. Hoffmann[2], W. Jalmuzna[3], F. Ludwig[2], H. Schlarb[2], C. Schmidt[2], B. Yang[2]
[1]Institute of Electronic Systems, Poland; [2]Deutsches Elektronen-Synchrotron, Germany; [3]Technical University of Lodz, Poland

PS3-35 Implementation of Intelligent Data Acquisition Systems for Fusion Experiment Using EPICS and FlexRIO Technology
D. Sanz[1], M. Ruiz[1], R. Castro[2], J. Vega[2], J. M. Lopez[1], E. Barrera[1], N. Utzel[3], P. Makijarvi[3]
[1]Universidad Politecnica de Madrid, Spain; [2]Asociacion EURATOM/CIEMAT, Spain; [3]ITER Org., France

PS3-36 DEAP-3600 Dark Matter Experiment Data Acquisition and Trigger System
A. J. Muir, *TRIUMF, Vancouver, Canada*

PS4-1 A General Self-Organization Tree-Based Energy-Balance Routing Protocol for Wireless Sensor Network
Z. Han, J. Wu, J. Zhang, L. Liu, K. Tian
University of Science and Technology of China, China,230026

PS4-9 Experiences with the MTCA.4 Solution for the EuXFEL Clock and Control System
E. Motuk, M. Postranecky, M. Warren, M. Wing
University College London, United Kingdom

PS4-12 Timing and Triggering System for the European XFEL Project - a Double Sized AMC Board
A. Hidvegi[1], P. Gessler[2], H. Kay[3], K. Rehlich[3], C. Bohm[1]
[1]Stockholm University, Sweden; [2]European X-Ray Free Electron Laser Facility GmbH, Germany; [3]Deutsches Elektronen-Synchrotron (DESY), Germany

PS4-14 Directive Multi-Channel Beta Probe for Detecting Small Tumors
S. J. Jeon, J. H. Park, K. S. Joo
Myongji University, South Korea

PS4-20 High-Precision Accelerator RF Control for the European XFEL
H. Schlarb[1], F. Ludwig[1], M. Hoffmann[1], T. Jezynski[1], J. Branlard[1], C. Schmidt[1], M. Grecki[1], V. Ayvazyan[1], S. Pfeiffer[1], K. Czuba[2], A. Piotrowski[3], O. Hensler[1], W. Jalmuzna[3], D. Makowski[3], L. Butkoswki[2], W. Cichalewski[3], I. Kudla[1], J. Piekarski[2], K. Przygoda[3], I. Rutkowski[2], D. Sikora[2], J. Szewinksi[1], W. Wierba[1], B. Yang[1], L. Zembala[2], S. B. Habib[2]
[1]DESY, Germany; [2]WUT, Polen; [3]Uni of Lodz, Polen

PS3-22 Minimizing Dead Time of the Belle II Data Acquisition System with Pipelined Trigger Flow Control
M. Nakao[1], C. Lim[2], M. Friedl[3], T. Uchida[1]
[1]KEK, High Energy Accelerator Research Organization, Japan; [2]Yonsei University, Korea; [3]HEPHY, Austrian Academy of Sciences, Austria

PS4-2 Real Time Control System of Active Reflector of FAST
X.-C. Deng[1,2], W.-Q. Wu[1,2], M.-C. Luo[1,2], H.-T. Shen[3], L.-C. Zhu[3], P.-Y. Tang[1,2], J.-J. Liu[1,2], F. Li[1,2], G. Jin[1,2], J. Wang[1,2]
[1]Univ. of Sci. & Tech. of China, China; [2]State Key Laboratory of Technologies of Particle Detection and Electronics, china; [3]National Astronomical Observatories,, china

PS3-20 Upgrading the Backend of the Pipeline Readout System for Belle II
S. Y. Suzuki, T. Higuchi, M. Nakao, R. Itoh, Y. Igarashi, *KEK, Japan*

PS3-31 Communication Architecture of DAQ-Middleware
Y. Nagasaka, *Hiroshima Institute of Technology, Japan*; H. Sendai, E. Inoue, *High Energy Accelerator Research Organization, Japan*; T. Koutoku, N. Ando, *The National Institute of Advanced Industrial Science and Technology, Japan*; S. Ajimura, *Osaka University, Japan*; M. Wada, *Bee Beans Technologies Co. Ltd., Japan*

PS3-34 Advanced Linux PCI Services (ALPS) for Rapid Prototyping of PCI-Based DAQ Electronics
S. A. Chilingaryan, M. Caselle, A. Kopmann, U. Stevanovic, M. Vogelgesang
Karlsruhe Institute of Technology, Germany

PS3-37 A 16-Channel 15 ps TDC Implemented in a 65 nm FPGA
L. Zhao[1,2], X. Hu[1,2], S. Liu[1,2], J. Wang[1,2], Q. An[1,2]
[1]University of Science and Technology of China, China; [2]Department of Modern Physics, University of Science and Technology of China, China

PS3-5 Design and Implementation of DAQ Readout System for Daya Bay Reactor Neutrino Experiment
X. Ji, F. Li, K. Zhu
Institute of High Energy Physics, Chinese Academy of Sciences, China

PS3-16 An FPGA Based GEMROC ASIC Readout System
B. Mindur, W. Dabrowski, T. Fiutowski, P. Wiacek, A. Zielinska
AGH University of Science and Technology, Poland

PS3-23 Development of New Data Acquisition System at Super-Kamiokande for Nearby Supernova Bursts
T. Tomura[1], Y. Hayato[1], M. Ikeno[2], M. Nakahata[1], S. Nakayama[1], Y. Obayashi[1], K. Okumura[1], M. Shiozawa[1], S. Y. Suzuki[2], T. Uchida[2], S. Yamada[3], T. Yokozawa[1]
[1]University of Tokyo, Japan; [2]High Energy Accelerator Research Organization (KEK), Japan; [3]Tohoku University, Japan

PS4-11 Superconducting Cavities Automatic Loaded Quality Factor Control at FLASH
W. Cichalewski, *Technical University of Lodz, Poland*; J. Branlard, H. Schlarb, N. Walker, *Deutsches Elektronen Synchrotron, Germany*; J. Carwardine, *Argonne National Laboratory, USA*

PS3-2 A Prototype of Underground Muon Counters Triggered from the Pierre Auger Surface Detectors Built on Unified Altera Platform
Z. Szadkowski, *University of Lodz, Poland*

PS3-32 Implementation of the Disruption Predictor APODIS in JET Real Time Network Using the MARTe Framework
J. M. Lopez[1], J. Vega[2], D. Alves[3], S. Dormido-Canto[4], A. Murari[5], J. M. Ramirez[4], R. Felton[6], M. Ruiz[1], G. D. Arcas[1], and JET-EFDA Contributors[7]
[1]Universidad Politecnica de Madrid., Spain; [2]Asociacion EURATOM CIEMAT para Fusion, Spain; [3]Instituto de Plasmas e Fusao Nuclear. Instituto Superior Tecnico, Univ. Tecnica de, Portugal; [4]Universidad de Educacion a Distancia, Spain; [5]Consorzio RFX-Associazione EURATOM ENEA per la Fusione, Italy; [6]EURATOM/CCFE Fusion Association, Culham Science Center OX14 3DB, United Kingdom; [7]See Appendix of F. Romanelli et al Proc. 23rd IAEA Fusion Energy Conference 2010, Korea

PS4-18 Recent Developments in Control Software for Optical Synchronization Applications at DESY
P. Prędki, T. Kozak, A. Napieralski
Technical University of Lodz, Poland

Coffee break (15:40-16:00)

PS3 Poster Session 3

Thursday, June 14 16:00-17:20 Boiler room

PS3-1 Readout Electronics and Data Acquisition of a Time of Flight Detector for Positron Emission Tomography
J. Y. Yeom, V. Spanoudaki, K. J. Hong, C. S. Levin
Stanford University, United States

PS3-2 A Prototype of Underground Muon Counters Triggered from the Pierre Auger Surface Detectors Built on Unified Altera Platform
Z. Szadkowski, *University of Lodz, Poland*

PS3-3 Design of the Trigger Interface and Distribution Board for CEBAF 12 GeV Upgrade
W. Gu, D. Abbott, C. Cuevas, G. Heyes, E. Jastrzembski, B. Moffit, B. Raydo, J. Wilson, H. Dong, S. Kaneta, N. Nganga, C. Timmer, V. Gyurjyan
Jefferson Lab, United States

PS3-4 A Correlation Measurement System for Ghost Imaging Experiment
L. Chen[1,2], M. Zheng[1,2], L. Zhang[1,2], G. Jin[1,2]
[1]University of Science and Technology of China, China; [2]State Key Laboratory of Particle Detection and Electronics, China

PS3-5 Design and Implementation of DAQ Readout System for Daya Bay Reactor Neutrino Experiment
X. Ji, F. Li, K. Zhu
Institute of High Energy Physics, Chinese Academy of Sciences, China

PS3-6 ATLAS IBL BOC Prototype Evaluation
N. Schroer, *ZITI - University of Heidelberg, Germany*

PS3-7 High-Speed Data Acquisition System of Microwave Reflectometry Based on LabVIEW for Long Pulse Operation
S. Li, Y. Chen, F. Wang, Y. Wang, W. Huang, X. Sun
Institute of Plasma Physics, CAS, China

PS3-8 Clock Distribution Board for the 4πβ-γ Coincidence Counting System
H. Wang[1,2], K. Song[1,2], J. Yang[1,2], P. Cao[1,2], K. Zhang[1,2]
[1]University of Science and Technology of China, China; [2]the State Key Laboratory of Particle Detection and Electronics, China

PS3-9 Implementation of High-Speed USB Interface in Data Acquisition System for KTX
W. Lv[1,2], K. Song[1,2], J. Yang[1,2], P. Cao[1,2], L. Dong[1,2]
[1]University of Science and Technology of China, China; [2]the State Key Laboratory of Particle Detection and Electronics, China

PS3-10 An FPGA-Based Readout Module for the DAQ Subsystem of the DSSC Detector at the European XFEL
T. Gerlach, A. Kugel, *Heidelberg University, Germany*

PS3-11 Development of a High Resolution PXI Based Data Acquisition System for Electron Momentum Spectrometer
Y. Huang, S. Liu, J. Wang, X. Hu, C. Feng, Q. An
University of Science and Technology of China, China

PS3-12 A Fast Data Streaming System Using PCI Express for EAST Tokamak
F. Wang, S. Li, Y. Wang, X. Sun
Institute of Plasma Physics, Chinese Academy Sciences, China

PS3-13 A High Speed High Resolution Digital Platform for the 4πβ-γ Coincidence Counting System
K. Zhang[1,2], K. Song[1,2], J. Yang[1,2], P. Cao[1,2], H. Wang[1,2]
[1]University of Science and Techonology of China, China; [2]the State Key Laboratory of Particle Detection and Electronics, China

PS3-14 The Readout Electronics of the Micromegas-Based Large Time Projection Chamber Prototype for the International Linear Collider
D. Calvet, D. Attie, D. Besin, P. Colas, R. Joannes, A. Le Coguie, S. Lhenoret, I. Mandjavidze, M. Riallot, W. Wang, E. Zonca
CEA-IRFU, France

PS3-15 Design of a Low-Noise Analog Signal Processing Circuit for CZT Detectors
B. Gan, T. Wei, W. Gao, D. Gao, *Northwestern Polytechnical University, China*; Y. Hu, *University of Strasbourg/CNRS, France*

PS3-16 An FPGA Based GEMROC ASIC Readout System
B. Mindur, W. Dabrowski, T. Fiutowski, P. Wiacek, A. Zielinska
AGH University of Science and Technology, Poland

PS3-17 Design and Test of a High-Speed Flash ADC Mezzanine Card for High-Resolution and Timing Performance for Nuclear Structure Experiments
X. Egea Canet[1,2], E. Sanchis[2], V. Gonzalez[2], A. Gadea[1], J. M. Blasco[2], D. Barrientos[1,2], J. J. Valiente Dobon[3], M. Tripon[4], A. Boujrad[4], C. Houarner[4], M. Jastrząb[5], G. de Angelis[3], M. N. Erduran[6], S. Erturk[7], T. Huyuk[1], G. Jaworski[8,9], J. Nyberg[10], M. Palacz[9], G. de France[4], A. di Nitto[11], A. Pipidis[3], R. Tarnowski[9], R. Wadsworth[12], A. Triossi[3]
[1]IFIC (Institut de fisica corpuscular), Spain; [2]UV (Universitat de Valncia), Spain; [3]INFN, Laboratori Nazionali di Legnaro, Italy; [4]Grand Accelerateur National d'Ions Lourds, France; [5]Niewdoczanski Institute of nuclear physics, Polish Academy of Sciences, Poland; [6]Instanbul Sabahattin Zaim university Instanbul, Turkey; [7]Nigde Universitesi, Turkey; [8]Warzaw university of technology, Poland; [9]University of Warzaw, Poland; [10]Uppsala University, Sweden; [11]INFN, Sezione di Napoli, Italy; [12]University of York, United Kingdom

PS3-18 Design of an Optical Uplink with 10GBit/s Link Between PCIe and MicroTCA
H. Kleines, P. Wüstner, A. Ackens, M. Drochner, P. Kämmerling, S. van Waasen, M. Ramm
Forschungszentrum Jülich, Germany

PS3-19 Real-Time Data Acquisition for Long-Distance Reflective Ghost Imaging Experiment with Thermal Light
F. Wen[1,2], F. Li[1,2], Q. Wang[1,2], G. Jin[1,2]
[1]University of Science and Technology of China, China; [2]State Key Laboratory of Particle Detection and Electronics, China

PS3-20 Upgrading the Backend of the Pipeline Readout System for Belle II
S. Y. Suzuki, T. Higuchi, M. Nakao, R. Itoh, Y. Igarashi
KEK, Japan

PS3-21 Development of an AMC Module MMC
P. Kaemmerling, M. Drochner, H. Kleines, S. van Waasen, M. Ramm, A. Ackens
Forschungszentrum Juelich, Germany

PS3-22 Minimizing Dead Time of the Belle II Data Acquisition System with Pipelined Trigger Flow Control
M. Nakao[1], C. Lim[2], M. Friedl[3], T. Uchida[1]
[1]KEK, High Energy Accelerator Research Organization, Japan; [2]Yonsei University, Korea; [3]HEPHY, Austrian Academy of Sciences, Austria

PS3-23 Development of New Data Acquisition System at Super-Kamiokande for Nearby Supernova Bursts
T. Tomura[1], Y. Hayato[1], M. Ikeno[2], M. Nakahata[1], S. Nakayama[1], Y. Obayashi[1], K. Okumura[1], M. Shiozawa[1], S. Y. Suzuki[2], T. Uchida[2], S. Yamada[3], T. Yokozawa[1]
[1]University of Tokyo, Japan; [2]High Energy Accelerator Research Organization (KEK), Japan; [3]Tohoku University, Japan

PS3-24 Research of Long Distance Clock Distribution System
Y. Yang, K. Hanson, T. Meures
Interuniversity Insitute for High Energies (IIHE), Brussels, Belgium

PS3-25 Development of the Data Acquisition System of a Large TPC for the ILC

G. W. P. De Lentdecker, E. Verhagen, Y. Yang, *Universite Libre de Bruxelles, Belgium*; L. Jonsson, B. Lundberg, U. Mjornmark, A. Oskarsson, L. Osterman, E. Stenlund, *Lund University, Sweden*

PS3-26 Real-Time Performance of Commercial Intel-Based VME Controllers for the CODA Data Acquisition System
B. J. Moffit, *Jefferson Lab, United States*

PS3-27 A Readout System Utilizing the APV25 ASIC for the Forward GEM Tracker in STAR
G. J. Visser[1], J. T. Anderson[2], B. Buck[3], A. S. Kreps[2], T. Ljubicic[4]
[1]Indiana University, United States; [2]Argonne National Laboratory, United States; [3]Massachusetts Institute of Technology, United States; [4]Brookhaven National Laboratory, United States

PS3-28 A Comprehensive Zero-Copy Architecture for High Performance Distributed Data Acquisition over Advanced Network Technologies for the CMS Experiment
A. Petrucci[1], G. Bauer[2], U. Behrens[3], J. Branson[4], S. Bukowiec[1], O. Chaze[1], S. Cittolin[5], J. A. Coarasa Perez[1], C. Deldicque[1], M. Dobson[1], A. Dupont[1], S. Erhan[6], D. Gigi[1], F. Glege[1], R. Gomez - Reino[1], C. Hartl[1], A. Holzner[4], L. Masetti[1], F. Meijers[1], E. Meschi[1], R. Mommsen[7], C. Nunez-Barranco-Fernandez[1], V. O'Dell[7], L. Orsini[1], C. Paus[2], M. Pieri[4], G. Polese[1], A. Racz[1], O. Raginel[2], H. Sakulin[1], M. Sani[4], C. Schwick[1], A. C. Cristian Spataru[1], F. Stoeckli[2], K. Sumorok[2]
[1]CERN, Switzerland; [2]Massachusetts Institute of Technology, USA; [3]DESY, Germany; [4]University of California, San Diego, USA; [5]Eidgenssische Technische Hochschule, Switzerland; [6]University of California, Los Angeles, USA; [7]FNAL, USA

PS3-29 A Novel Data Acquisition Scheme Based on a Low-Noise Front-End ASIC and a High-Speed ADC for CZT-Based Small-Animal PET Imaging
W. Gao, D. Gao, B. Gan, L. Wang, F. Xue, T. Wei, *Northwestern Polytechnical University, China*; Y. Hu, *UMR 7178 CNRS/UDS, France*

PS3-31 Communication Architecture of DAQ-Middleware
Y. Nagasaka, *Hiroshima Institute of Technology, Japan*; H. Sendai, E. Inoue, *High Energy Accelerator Research Organization, Japan*; T. Koutoku, N. Ando, *The National Institute of Advanced Industrial Science and Technology, Japan*; S. Ajimura, *Osaka University, Japan*; M. Wada, *Bee Beans Technologies Co. Ltd., Japan*

PS3-32 Implementation of the Disruption Predictor APODIS in JET Real Time Network Using the MARTe Framework
J. M. Lopez[1], J. Vega[2], D. Alves[3], S. Dormido-Canto[4], A. Murari[5], J. M. Ramirez[4], R. Felton[6], M. Ruiz[1], G. D. Arcas[1], and JET-EFDA Contributors[7]
[1]Universidad Politecnica de Madrid., Spain; [2]Asociacion EURATOM CIEMAT para Fusion, Spain; [3]Instituto de Plasmas e Fusao Nuclear. Instituto Superior Tecnico, Univ. Tecnica de, Portugal; [4]Universidad de Educacion a Distancia, Spain; [5]Consorzio RFX-Associazione EURATOM ENEA per la Fusione, Italy; [6]EURATOM/CCFE Fusion Association, Culham Science Center OX14 3DB, United Kingdom; [7]See Appendix of F. Romanelli et al Proc. 23rd IAEA Fusion Energy Conference 2010, Korea

PS3-33 A Versatile High Speed Data Acquisition Module with Four 10G Ethernet Links
I. Sheviakov, M. Zimmer
Deutsches Elektronen-Synchrotron, Germany

PS3-34 Advanced Linux PCI Services (ALPS) for Rapid Prototyping of PCI-Based DAQ Electronics
S. A. Chilingaryan, M. Caselle, A. Kopmann, U. Stevanovic, M. Vogelgesang
Karlsruhe Institute of Technology, Germany

PS3-35 Implementation of Intelligent Data Acquisition Systems for Fusion Experiment Using EPICS and FlexRIO Technology
D. Sanz[1], M. Ruiz[1], R. Castro[2], J. Vega[2], J. M. Lopez[1], E. Barrera[1], N. Utzel[3], P. Makijarvi[3]
[1]Universidad Politecnica de Madrid, Spain; [2]Asociacion EURATOM/CIEMAT, Spain; [3]ITER Organizarion, France

PS3-36 DEAP-3600 Dark Matter Experiment Data Acquisition and Trigger Sytem
A. J. Muir, *TRIUMF, Canada*

PS3-37 A 16-Channel 15 ps TDC Implemented in a 65 nm FPGA
L. Zhao[1,2], X. Hu[1,2], S. Liu[1,2], J. Wang[1,2], Q. An[1,2]

[1]*University of Science and Technology of China, China;* [2]*Department of Modern Physics, University of Science and Technology of China, China*

PS3-38 Development of High Resolution TDC Implemented in Radiation Tolerant FPGAs for Aerospace Application
X. Qin[1,2], C. Feng[1,2], L. Zhao[1,2], D. Zhang[1,2], X. Hao[1], S. Liu[1,2], Q. An[1,2]
[1]*University of Science and Technology of China, China;* [2]*State Key Laboratory of Technologies of Particle Detection & Electronics, China*

PS3-39 SEUs Tolerance in FPGAs Based Digital LLRF System for XFEL
M. K. Grecki, *DESY, Hamburg, Germany*

PS3-40 Maximum Likelihood Estimation and Non-Linear Least Squares Fitting with Levenberg-Marquardt Algorithm Implementation in FPGA Devices for High Resolution Hodoscopy
J. M. Blasco, E. Sanchis, V. Gonzalez, J. D. Martin, X. Egea, D. Barrientos, D. Granero
Universidad de Valencia, Spain

PS3-41 Multiple Register Synchronization with a High-Speed Serial Link Using the Aurora Protocol
D. Barrientos[1,2,3], V. Gonzalez[3], M. Bellato[2], A. Gadea[1], D. Bazzacco[2], J. M. Blasco[3], D. Bortolato[2], F. J. Egea[1,3], R. Isocrate[2], A. Pullia[4], G. Rampazzo[2], E. Sanchis[3], A. Triossi[2]
[1]*Instituto de Fisica Corpuscular (CSIC-UV), Spain;* [2]*Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy;* [3]*Departamento Ingeniera Electronica, Universitat de Valencia, Spain;* [4]*Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy*

PS3-42 Graphical User Interface for Serial Protocols Through a USB Link
D. Barrientos[1,2,3], V. Gonzalez[3], M. Bellato[2], A. Gadea[1], D. Bazzacco[2], J. M. Blasco[3], D. Bortolato[2], F. J. Egea[1,3], R. Isocrate[2], A. Pullia[4], G. Rampazzo[2], E. Sanchis[3], A. Triossi[2]
[1]*Instituto de Fisica Corpuscular (CSIC-UV), Spain;* [2]*Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy;* [3]*Departamento Ingeniera Electronica, Universitat de Valencia, Spain;* [4]*Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy*

PS3-43 SEU Effects on Power Consumption in Xilinx FPGAs
A. Aloisio[1,2], V. Bocci[2], G. Chiodi[2], R. Giordano[1,2], V. Izzo[2], L. Sterpone[3], M. Violante[3]
[1]*University of Naples 'Federico II' and INFN, Italy;* [2]*INFN, Italy;* [3]*Politecnico di Torino, Italy*

PS3-44 Online Software Time Calibration for a Continuous Air Shower Array
S. Mastroianni, *INFN, Italy*; M. Iacovacci, *Universit, Italy*

FERT1 FPGA and Electronics Applied to Realtime Systems 1

Thursday, June 14 17:20-18:20 Crystal Ballroom
Session Chairs: Jean-Francois C. Genat, CNRS/IN2P3/LPNHE, France, Mike E. Huffer, SLAC, United States

FERT1-1 Research of real-time time interval measurement and non-linear phase adjustment of photon pairs in entanglement swapping experiment
Z. Sang[1,2], X. Jiang[2,3], F. Li[1,2], H. Zhang[2,3], T. Zhao[2,3], G. Jin[1,2]
[1]*State Key Laboratory of Particle Detection and Electronics, China;* [2]*University of Science and Thechnology of China, China;* [3]*Hefei National Laboratory for Physical Science at Microscale, China*

FERT2-5 A Stepped-Up Tree Encoder for 10-ps Wave Union TDC
X. Hu[1,2], L. Zhao[1,2], S. Liu[1,2], J. Wang[1,2], Q. An[1,2]
[1]*University of Science and Technology of China, China;* [2]*Department of Modern Physics, University of Science and Technology of China, China*

FERT1-3 A Low-Resolution, GSa/s Streaming Digitizer for a Correlation-Based Trigger System
K. Nishimura[1], M. Andrew[1], Z. Cao[1], M. Cooney[1], P. Gorham[1], L. Macchiarulo[1], L. Ritter[1], A. Romero-Wolf[2], G. Varner[1]
[1]University of Hawaii at Manoa, United States; [2]Jet Propulsion Laboratory, United States

Conference dinner (19h00-22h00)
Berkeley Art Museum
2626 Bancroft Way, Berkeley, CA

Friday

FERT2 FPGA and Electronics Applied to Realtime Systems 2

Friday, June 15 08:30-10:40 Crystal Ballroom
Session Chairs: Jinyan Wu, FNAL, United States,
Gary Varner, Hawaii Univ., United States

FERT2-1 (invited) Status and Perspectives of Fast Waveform Digitizers
R. Paoletti, *University of Siena and INFN Pisa, Italy*

FERT2-2 Hardware Timebase Calibration in the Multi-GSa/s LABRADOR-4 ASIC
G. S. Varner, M. Z. Andrew, Z. Cao, K. A. Nishimura, P. W. Gorham
Hawaii Univ., United States

FERT2-3 Time Interval Analyzer with FPGA-Based TDC for Free Space Quantum Key Distribution: Principle and Validation with Prototype Setup
Q. Shen[1], S. Liao[1], S. Liu[1], J. Wang[1], W. Liu[2], C. Peng[1], Q. An[1]
[1]University of Science and Technology of China, China; [2]Ningbo University, China

FERT2-4 128 Channels of Multi-GSa/s Waveform Sampling and Digitization in an 800 cm^3 Package
M. Z. Andrew, C. N. Lim, K. A. Nishimura, L. J. Ridley, G. S. Varner
University of Hawaii, United States

FERT1-2 A Compact Dosimeter for Space Applications
C. Deneau[1], J.-R. Vaille[1,2], F. Bezerra[3], E. Lorfevre[3], R. Ecoffet[3], L. Dusseau[1]
[1]Universite Montpellier 2, France; [2]Universite de Nimes, France; [3]Centre National d'Etudes Spatiales, France

FERT2-6 A Silicon Diode Based Detector for Radiation Measurement in High Altitude Natural Environment
D. Pantel[1], J.-R. Vaille[1], F. Wrobel[1], L. Dilillo[2], J.-M. Galliere[2], J.-L. Autran[3], P. Cocquerez[4], P. Chadoutaud[4], F. Saigne[1]
[1]Universite Montpellier 2, France; [2]LIRMM, France; [3]IM2NP, France; [4]CNES, France

Coffee break (10:40-11:05)

PS4 Poster Session 4

Friday, June 15 11:05-11:35 Crystal Ballroom

PS4-1 A General Self-Organization Tree-Based Energy-Balance Routing Protocol for Wireless Sensor Network
Z. Han, J. Wu, J. Zhang, L. Liu, K. Tian
University of Science and Technology of China, China,230026

PS4-2 Real Time Control System of Active Reflector of FAST
X.-C. Deng[1,2], W.-Q. Wu[1,2], M.-C. Luo[1,2], H.-T. Shen[3], L.-C. Zhu[3], P.-Y. Tang[1,2], J.-J. Liu[1,2], F. Li[1,2], G. Jin[1,2], J. Wang[1,2]
[1]Univ. of Sci. & Tech. of China, China; [2]State Key Laboratory of Technologies of Particle Detection and Electronics, china; [3]National Astronomical Observatories,, china

PS4-3 IPMI Test Software for MicroTCA Developments

M. Drochner, P. Kaemmerling, H. Kleines, S. v.Waasen
FZJ/ZEL, Germany

PS4-4 The Research and Design of the Data Acquisition System and the Control System of KTX
J. An, K. Song, P. Cao, J. Yang
the State Key Laboratory of Particle Detection and Electronics, China

PS4-5 Conception Design and Key Issues on Remote Participation in EAST Tokamak
X. Sun, F. Wang, S. Li, Y. Wang
Institute of Plasma Physics, Chinese Academy of Sciences, China

PS4-6 A Prototype GUI for the Multi-Channel Sensor Data Acquisition and Monitoring System of KTX
L. Dong[1,2], K. Song[1,2], J. Yang[1,2], P. Cao[1,2], D. Mao[1,2], W. Lv[1,2]
[1]University of Science and Technology of China, China; [2]State Key Laboratory of Particle Detection and Electronics, China

PS4-7 Axisymmetric Magnetic Control in ITER
L. Zabeo[1], G. Ambrosino[2], M. Cavinato[3], Y. Gribov[1], D. Humpreys[4], J. A. Snipes[1], M. Walker[4], A. Kavin[5], V. Lukash[6], G. Vayakis[1]
[1]ITER Organisation, France; [2]CREATE/ENEA/Euratom Association, Universita' di Napoli Federico II, Italy; [3]Fusion for Energy (F4E), Spain; [4]General Atomics, USA; [5]D.V.Efremov Scientific Research Institute, Russia; [6]Kurchatov Institute, Russia

PS4-8 Present Status of the ITER Real-Time Plasma Control System Development
A. Winter, P. Makijarvi, S. Simrock, J. Snipes, A. Wallander, L. Zabeo
ITER Organization, France

PS4-9 Experiences with the MTCA.4 Solution for the EuXFEL Clock and Control System
E. Motuk, M. Postranecky, M. Warren, M. Wing
University College London, United Kingdom

PS4-10 New strategy for the control of low frequency large band mechanical suspensions and inertial platforms
F. Barone[1,2], F. Acernese[1,2], R. De Rosa[3,2], G. Giordano[1], R. Romano[1,2]
[1]Universita'di Salerno, Italy; [2]Istituto Nazionale di Fisica Nucleare, Italy; [3]Universita' di Napoli Federico II, Italy

PS4-11 Superconducting Cavities Automatic Loaded Quality Factor Control at FLASH
W. Cichalewski, *Technical University of Lodz, Poland*; J. Branlard, H. Schlarb, N. Walker, *Deutsches Elektronen Synchrotron, Germany*; J. Carwardine, *Argonne National Laboratory, USA*

PS4-12 Timing and Triggering System for the European XFEL Project - a Double Sized AMC Board
A. Hidvegi[1], P. Gessler[2], H. Kay[3], K. Rehlich[3], C. Bohm[1]
[1]Stockholm University, Sweden; [2]European X-Ray Free Electron Laser Facility GmbH, Germany; [3]Deutsches Elektronen-Synchrotron (DESY), Germany

PS4-13 Secure and Reliable Remote Access for the European XFEL Control System
C. C. W. Robson, C. Bohm, *Stockholms universitet, Sweden*; K. Rehlich, R. Kammering, *Deutsches Elektronen-Synchrotron, Germany*

PS4-14 Directive Multi-Channel Beta Probe for Detecting Small Tumors
S. J. Jeon, J. H. Park, K. S. Joo
Myongji University, South Korea

PS4-15 MicroTCA for the European XFEL: a Hardware and Software Report
K. Rehlich, *DESY, Germany*

PS4-17 High-Performance Scalable Information Service for the ATLAS Experiment.
S. Kolos, *University if California Irvine, USA*

PS4-18 Recent Developments in Control Software for Optical Synchronization Applications at DESY
P. Prędki, T. Kozak, A. Napieralski
Technical University of Lodz, Poland

PS4-19 The New Generation of the LHC Accelerator Radiation Monitoring System
A. Masi, M. Brugger, M. Donze`, G. Spiezia, P. Peronnard

CERN, Switzerland

PS4-20 High-Precision Accelerator RF Control for the European XFEL
H. Schlarb[1], F. Ludwig[1], M. Hoffmann[1], T. Jezynski[1], J. Branlard[1], C. Schmidt[1], M. Grecki[1], V. Ayvazyan[1], S. Pfeiffer[1], K. Czuba[2], A. Piotrowski[3], O. Hensler[1], W. Jalmuzna[3], D. Makowski[3], L. Butkoswki[2], W. Cichalewski[3], I. Kudla[1], J. Piekarski[2], K. Przygoda[3], I. Rutkowski[2], D. Sikora[2], J. Szewinksi[1], W. Wierba[1], B. Yang[1], L. Zembala[2], S. B. Habib[2]
[1]DESY, Germany; [2]WUT, Polen; [3]Uni of Lodz, Polen

PS4-22 Development of an ATCA Based Data Acquisition System for High Speed, Direct Detection X-Ray Pixel Sensors
J. Joseph, D. Contarato, P. Denes, D. Doering, P. McVittie, *Lawrence Berkeley National Laboratory, United States*; J. Weizeorick, *Argonne National Laboratory, United States*

PS4-23 Data Acquisition System Based on Time-Interleaved Analog-to-Digital Conversion for Time-of-Flight Mass Spectrometer
X. Hu, L. Zhao, W. Zheng, S. Liu, Q. An
University of Science and Technology of China, China

FPGA and Electronics Applied to Realtime Systems 3

Friday, June 15 11:35-12:15 Crystal Ballroom
Session Chairs: W. E. Norum, Lawrence Berkeley National Laboratory, United States, and Tomasz Jezynski, DESY

FERT3-1 Real-Time Clustering for Pixel Detectors: the Dce3 ASIC for the PXD Detector in the Belle II Experiment @KEK
A. Wassatsch, R. Richter
Max-Planck-Institut fuer Physik, Germany

FERT3-2 Quantization Analysis of the Infrared Interferometer of the TJ-II for Its Optimized FPGA-Based Implementation
L. Esteban[1], J. A. Lopez[2], E. Sedano[2], M. Sanchez[1]
[1]Centro de Investigaciones Energticas Medioambientales y Tecnolgicas, Spain; [2]Universidad Politecnica de Madrid, Spain

Closing Session

Friday, June 15 12:15-12:45 Crystal Ballroom
Session Chair: Sergio Zimmermann, LBNL, United States

Closing-1 RT2014
M. Nomachi, *Osaka University, Japan*

Closing-2 Closing Talk
S. Zimmermann, *LBNL, USA*