

2012 18th IEEE-NPSS Real Time Conference

(RT 2012)

**Berkeley, California, USA
9-15 June 2012**



**IEEE Catalog Number: CFP12RTC-PRT
ISBN: 978-1-4673-1082-6**

2012 18th IEEE-NPSS Real Time Conference Proceedings

Open 1 Welcome and Opening Session

Open 1-4

(invited) LHC Trigger & DAQ - an Introductory Overview

N. Neufeld

CERN, Switzerland

NSET New Standard, Emerging Technologies and TCA

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. Yuasa¹, M. Nomachi², T. Takahashi¹, M. Ioki³

¹Japan Aerospace Exploration Agency, Institute of Space and Astronautical Science, Japan; ²Osaka University, Japan; ³Institute for Unmanned Space Experiment Free Flyer, Japan

RTSA Real Time System Architectures

RTSA-1

Auger ACCESS - Remote Monitoring and Controlling the Auger Experiment

T. Jeikal, on behalf of the Pierre Auger Collaboration

Karlsruhe Institute of Technology, Germany;

RTSA-3

A System for Monitoring and Tracking the LHC Beam Spot within the ATLAS High Level Trigger

R. Bartoldus¹, J. Cogan¹, A. Salnikov¹, E. Strauss¹, F. Winklmeier² on behalf of the ATLAS Collaboration

¹SLAC, United States; ²CERN, Switzerland

RTSA-4

Data Flow and High Level Trigger of Belle II DAQ System

R. Itoh¹, T. Higuchi¹, M. Nakao¹, S. Y. Suzuki¹, S. Lee²

¹KEK, Japan; ²Korea 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}

¹University of Science and Technology of China, China; ²State Key Laboratory of Particle Detection and Electronics, China

PS1 Poster Session 1

PS1-1

Implementation of an ATCA/AXIe Board for Fast Control and Data Acquisition Systems of Nuclear Fusion Devices

A. J. N. Batista¹, C. Leong², V. Bexiga², A. P. Rodrigues¹, A. Combo¹, B. B. Carvalho¹, P. Ricardo¹, J. Fortunato¹, B. Santos¹, P. Carvalho¹, M. Correia¹, J. P. Teixeira², I. C. Teixeira², J. Sousa¹, B. Goncalves¹, C. A. F. Varandas¹

¹Instituto Superior Tecnico - Universidade Tecnica de Lisboa, Portugal; ²INESC-ID, Portugal

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. Barroso¹, F. Carena¹, W. Carena¹, S. Chapeland¹, F. Costa¹, E. Denes², R. Divia¹, A. Grigore³, G. Simonetti⁴, C. Soos¹, A. Telesca¹, P. Vande Vyvre¹, B. von Haller¹

¹CERN, Switzerland; ²Hungarian Academy of Sciences, Hungary; ³Polytechnic University of Bucharest, Romania;

⁴Universita Bari, Italy

PS1-4

Open-Standard Blade Systems Enable High Performance Applications ''')\$

S. McClellan¹, K. Austin², A. Deikman²,

¹Texas State University, United State; ²ZNYX Networks, United States

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

PS1-8

Vector Modulator Card for MTCA-Based LLRF Control System for Linear Accelerators ''**\$

L. Rutkowski¹, K. Czuba¹, D. Makowski², A. Mielczarek², H. Schlarb³, F. Ludwig³,

¹Warsaw University of Technology, Poland; ²Technical University of Lodz, Poland; ³Deutsches Elektronen Synchrotron, Germany

PS1-9

RF Backplane for MTCA.4 Based LLRF Control System ''***

K. Czuba¹, M. Hoffmann², T. Jezynski², F. Ludwig², H. Schlarb²

¹Warsaw University of Technology, ²Poland; DESY, Germany

PS1-10

Timing Distribution and Synchronization of an ATCA Fast Controller for Fusion Devices ''+\$

M. Correia¹, J. Sousa¹, B. B. Carvalho¹, A. Combo¹, A. P. Rodrigues¹, A. J. N. Batista¹, B. Santos¹, P. R. F. Carvalho¹, B. Goncalves¹, C. M. B. A. Correia², C. A. F. Varandas¹

¹Instituto Superior Tecnico - Universidade Tecnica de Lisboa, Portugal; ²Universidade de Coimbra, Portugal

PS1-11

Intelligent Platform Management Controller Software Architecture in ATCA Modules for Fast Control Systems ''+&

A. P. Rodrigues¹, M. Correia¹, A. J. N. Batista¹, P. R. Carvalho¹, B. Santos¹, B. B. Carvalho¹, J. Sousa¹, B. Goncalves¹, C. C. M. B. Correia², C. A. F. Varandas¹

¹Instituto Superior Tecnico - Universidade Tecnica de Lisboa, Portugal; ²Universidade de Coimbra, Portugal

PS1-12

Firmware Upgrade in xTCA Sytems ''+)

D. Makowski¹, A. Mielczarek¹, G. Jablonski¹, P. Predki¹, T. Jezynski², H. Schlarb², A. Napieralski¹

¹Technical University of Lodz, Poland; ²Deutsche Elektronen-Synchotron, Germany

PS1-13

Standalone First Level Event Selection Package for the CBM Experiment ''', '

J. Kisel^{1,2,3}, I. Kulakov^{1,3}, M. Zyzak^{1,3}

¹Goethe University Frankfurt, Germany; ²FIAS Frankfurt Institute for Advanced Studies, Germany; ³GSI Helmholtzzentrum fuer Schwerionenforschung, Germany

PS1-14

The XFEL RF Interlock System''', -

M. Penno¹, H. Leich¹, T. Grevsmuehl², C. Rueger¹, K. Machau²

¹DESY Zeuthen, Germany; ²DESY 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. Green², H. T. Philipp², M. T. W. Tate², S. M. Gruner^{2,3}

¹State University of New York at Oswego, United States; ²Cornell University, United States; ³Cornell High Energy Synchrotron Source (CHESS), United States

PS1-18

Real-Time Fast Controller Prototype for J-TEXT Tokamak

W. Zheng, M. Zhang, G. Zhuang, 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}

¹University of Cagliari, Italy; ²INFN Sez. Cagliari, Italy

PS1-20

New RFX-Mod Feedback Control System Based on MARTE Real-Time Framework

G. Manduchi, A. Luchetta, C. Taliere, A. Soppelsa
Consorzio RFX, Italy

PS1-21

Real Time FPGA-Based Crosstalk Elimination for Multichannel Interferometry Systems in Fusion Diagnostics

S. Hernandez-Montero¹, J. A. Lopez-Martin¹, M. Sanchez², L. Esteban², CIEMAT, Spain

¹Universidad Politecnica de Madrid, Spain; ²CIEMAT, Spain

PS1-22

A Real-Time Architecture for the Identification of Faulty Magnetic Sensors in the JET Tokamak

A. C. Neto¹, D. Alves¹, B. B. Carvalho¹, G. De Tommasi², R. Felton³, H. Fernandes¹, P. J. Lomas³, F. Maviglia², F. G. Rimini³, F. Sartori⁴, A. V. Stephen³, D. F. Valcarcel¹, L. Zabeo⁵

¹EURATOM-IST, Portugal; ²EURATOM-ENEA/CREATE, Italy; ³EURATOM-CCFE, United Kingdom; ⁴Fusion for Energy, Spain; ⁵ITER Organisation, France

PS1-23

Parallel Task Management Library for MARTE

D. F. Valcarcel¹, D. Alves¹, A. Neto¹, C. Reux², B. B. Carvalho¹, R. Felton³, P. J. Lomas³, J. Sousa¹, L. Zabeo⁴, JET EFDA Contributors*⁵

¹Associação EURATOM/IST, Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, UTL, Portugal; ²Ecole Polytechnique, LPP, CNRS UMR 7648, France; ³Euratom/CCFE Fusion Association, Culham Science Centre, UK; ⁴ITER Organisation, France; ⁵JET-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}

¹State Key Laboratory of Particle Detection and Electronics, China; ²University of Science and Technology of China, China

PS1-25

A Single-FPGA Real-time Dual Beam-Former with FX Correlation Capabilities. First Results at the Nançay

Radio Telescope with the FAN Antenna Array

H. Deschamps¹, C. Viou², J. Pezzani², P. Abbon¹, R. Ansari², C. Beigbeder², D. Breton², T. Cacérés², D. Charlet², C. Flouzat¹, P. Kestener¹, C. Magneville¹, B. Mansoux², C. Pailler², M. Taurigna², and C. Yèche¹

¹Commissariat à l'Energie Atomique, IRFU, France; ²Observatoire de Paris, Unité Scientifique de Nançay, France; ²CNRS-IN2P3-LAL, 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}

¹University of Science & Technology of China, China; ²State 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

PS1-30

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

LHCb Online in the Cloud: Off-site Computing Resources for the LHCb High Level Trigger

G. Liu, N. Neufeld,

CERN, Switzerland

PS1-32

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

D. M. Alves¹, A. C. Neto¹, D. F. Valcrrel¹, R. Felton², J. M. Lopez³, A. Barbalace⁴, L. Boncagni⁵, P. Card², A. Goodyear², S. Jachmich^{6,7}, P. J. Lomas², F. Maviglia⁸, P. A. McCullen², A. Murari⁴, M. Rainford², C. Reux⁹, F. Rimini², F. Sartori¹⁰, A. V. Stephen², J. Vega¹¹, R. Vitelli¹², L. Zabeo¹³, K.-D. Zastrow²

¹Associao EURATOM/IST, Instituto de Plasmas e Fuso Nuclear - Laboratrio Associado, Portugal; ²EURATOM/CCFE Fusion Association, Culham Science Centre, Abingdon, Oxon, OX14 3DB, United Kingdom; ³CAEND.Universidad Politcnica de Madrid, Spain, Spain; ⁴Associazione EURATOM-ENEA sulla Fusione, Consorzio RFX, Padova, Italy, Italy; ⁵Associazione EURATOM/ENEA, 00040 Frascati, Italy, Italy; ⁶Laboratory for Plasma Physics, Ecole Royale Militaire/Koninklijke Militaire School, EURATOM-Associat, Belgium; ⁷EFDA-CSU, Culham Science Centre, Abingdon, OX14 3DB, UK, United Kingdom; ⁸Associazione EURATOM-ENEA-CREATE, Univ. di Napoli Federico II, Via Claudio 21, 80125, Napoli, Italy, Italy; ⁹Ecole Polytechnique, LPP, CNRS UMR 7648, 91128 Palaiseau, France, France; ¹⁰Fusion for Energy, 08019 Barcelona, Spain, Spain; ¹¹Laboratorio Nacional de Fusion, Asociacion EURATOM-CIEMAT, Madrid, Spain, Spain; ¹²Dipartimento di Informatica, Sistemi e Produzione, Universit di Roma Tor Vergata 00133 Rome, Italy, Italy; ¹³ITER, St. Paul-Lez-Durance 13108, France, France

TRG Triggers

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

I. Radoslavova Hristova², on behalf of the ATLAS Collaboration

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. Kazarov¹, G. Lehmann Miotto², L. Magnoni², A. Corso Radu³

¹Petersburg Nuclear Physics Institute, ²NRC Kurchatov Institute, Russia; CERN, Switzerland; ³University 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. Spataru¹, G. Bauer², U. Behrens³, J. Branson⁴, S. Bukowiec¹, O. Chaze¹, S. Cittolin^{5,4}, J. A. Coarasa¹, C. Deldicque¹, M. Dobson¹, A. Dupont¹, S. Erhan⁴, D. Gigi¹, F. Glege¹, R. Gomez-Reino¹, C. Hartl¹, A. Holzner⁴, L. Masetti¹, F. Meijers¹, E. Meschi¹, R. K. Mommsen⁶, C. Nunez-Barranco-Fernandez¹, V. O'Dell⁶, L. Orsini¹, C. Paus², A. Petrucci¹, M. Pieri⁴, G. Polese¹, A. Racz¹, O. Raginel², H. Sakulin¹, M. Sani⁴, C. Schwick¹, F. Stoeckli², K. Sumorok²
¹CERN, Switzerland; ²Massachusetts Institute of Technology, USA; ³DESY, Germany; ⁴University of California, California, USA; ⁵Eidgenossische Technische Hochschule, Switzerland; ⁶FNAL, USA

MSP1 Monitoring and Signal Processing 1

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. Vandelli¹

¹CERN, Switzerland; ²Universita' di Pavia, Italy

MSP1-2

Advanced Visualization System for Monitoring the ATLAS TDAQ Network in Real-Time

S. Batraneanu¹, D. Campora Perez², B. Martin³, D. Savu³, S. Stancu³, L. Leahu⁴

¹University of California, Irvine, United States; ²University of Seville, Spain; ³CERN, Switzerland; ⁴Politehnica University Bucharest, Romania

MSP1-4

Architecture and Operation of the Control System for ALICE Detector at CERN

P. Chochula

CERN, Switzerland

MSP2 Monitoring and Signal Processing 2

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. Szadkowski¹, D. Fraenkel², A. M. van den Berg²

¹University of Lodz, Poland; ²University of Groningen, Netherlands

MSP2-3

FPGA-Based Algorithm for Center of Gravity Calculation of Clustered Signals

A. A. Ushakov¹, B. Mindur², T. Fiutowski², C. Schulz¹, F. Winklmeier¹

¹Helmholtz-Zentrum Berlin, Germany; ²AGH University for Science and Technology, Poland

UPG1 Upgrades 1

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. Bouscher, 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. Schwafer, E. Simioni, R. Spiwoaks, S. Tapprogge, T. Wengler, V. Wengler
CERN, Switzerland

PS2 Poster Session 2

PS2-1

High Performance FPGA-Based DMA Interface for PCIe *& %

H. Kaviani, 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. Shu², S. Lin¹, J. Luo³
¹Tianjin University of Technology, China; ²Tianjin University, China; ³Academia Sinica, China

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}
¹University of Science and Technology of China, China; ²Department 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}, L. Chen^{1,2}, F. Liang^{1,2}, G. Jin^{1,2}
¹University of Science and Technology of China, China; ²State Key Laboratory of Particle Detection and Electronics, China

PS2-8

Sophisticated Online Analysis in ADC Boards **** \$*

P. Wuestner¹, A. Erven¹, W. Erven¹, G. Kemmerling¹, H. Kleines¹, P. Kulesa², P. Marciniowski³, H. Ohm¹, K. Pysz¹, V. Serdyuk¹, S. van Waasen¹, P. Wintz¹
¹Research Centre Juelich, Germany; ²Institute of Nuclear Physics PAN, Poland; ³Uppsala University, Sweden

PS2-9

A High Density Time-to-Digital Converter Prototype Module for BESIII 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. Gendotti¹, H. Meyer¹, D. Murer^{1,2}

¹Arktis Radiation Detectors Ltd, Switzerland; ²ETH 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. Bartsch¹, S. George², M. zur Nedden³

¹University of Sussex, United Kingdom; ²Royal Holloway University of London, United Kingdom; ³Humboldt-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. Olsen¹, T. Liu¹, B. Penning¹, H. L. Li²

¹Fermi National Accelerator Laboratory, United States; ²University of Chicago, United States

PS2-20

Commissioning and Performance of a Fast Level-2 Trigger System at VERITAS

B. Zitzer¹, A. Weinstein², M. Schroedter³, M. Orr³, M. Oberling¹, A. Kreps¹, F. Krennrich², G. Drake¹, K. Byrum¹, J. T. Anderson¹

¹Argonne National Laboratory, United States; ²Iowa State University, United States; ³Smithsonian Astrophysical Observatory, United States

PS2-22

The ATLAS Muon Trigger Performance in Proton-Proton Collisions at Sqrt(s)=7 TeV

K. Nagano¹, K. Black², T. Matsushita³

¹KEK, Japan; ²Boston University, USA; ³Kobe University, Japan

PS2-24

Multifunction-Timing Card ITTEV2 for CoDaC Systems of Wendelstein 7-X

J. Schacht¹, J. Skodzik²

¹Max-Planck-Institute for Plasmaphysics, Germany; ²University Rostock, Germany

PS2-25

The ATLAS Jet Trigger

M. Campanelli¹, L. Lopes²

¹University College London, United Kingdom; ²Laboratorio de Instrumentacao e Fisica Experimental de Particulas (PT), Portugal

PS2-27

Development of the Control Card for the Digitizers of the Second Generation Electronics of AGATA

D. Barrientos^{1,2,3}, V. Gonzalez³, M. Bellato², A. Gadea¹, D. Bazzacco², J. M. Blasco³, D. Bortolato², F. J. Egea^{1,3}, R. Isocrate², A. Pullia⁴, G. Rampazzo², E. Sanchis³, A. Triossi²

¹Instituto de Fisica Corpuscular (CSIC-UV), Spain; ²Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy;

³Departamento Ingeniera Electronica, Universitat de Valencia, Spain; ⁴Istituto 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. Tricoli¹, T. Kono², V. Solovyev³

¹CERN, Switzerland; ²DESY, Germany; ³B.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

DAQ1 Data Acquisition 1 / Medical Imaging

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 architecture for the LabPET II, an APD-based Scanner dedicated to small animal PET imaging ^{***}(%&

L. Nieiimana, 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. Rüter

KIT, Germany

DAQ1-5

FPGA-Based Multi-Channel DAQ Systems with External PCI Express Link to GPU Compute Servers ^{***}(&

T. Bergmann¹, D. Bormann¹, M. A. Howe², M. Kleifges¹, A. Kopmann¹, N. Kunka¹, A. Menshikov¹, D. Tcherniakhovski¹

¹Karlsruhe Institute of Technology, Germany; ²University of North Carolina, USA

DAQ1-6

Field-Programmable Gate Array (FPGA) Firmware for the Fermilab E906 (SeaQuest) Trigger ^{***}(&

J. Wu¹, S.-H. Shiu²

¹FNAL, USA; ²Institute of Physics, Academia Sinica, Taiwan

UPG2 Upgrades 2

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. Magalotti¹, E. Pedreschi¹, A. Annovi¹, P. Giannetti¹, M. Piendibene^{1,2}, G. Broccolo³, F. Palla^{1,3}, R. Dell'Orso¹, F. Ligabue³, S. Taroni^{1,4}, L. Servoli¹, A. Nappi^{1,4}

¹INFN, Italy; ²Universit di Pisa, Italy; ³Scuola Normale Superiore, Italy; ⁴Universita' degli studi di Perugia, Italy

DAQ2 Data Acquisition 2 / Fusion

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. Luchetta¹, G. Manduchi¹, A. Soppelsa¹, C. Taliercio¹, F. Paolucci², F. Sartori², P. Barbato¹, M. Breda¹, R. Capobianco¹, F. Molon¹, M. Moressa¹, S. Polato¹, P. Simionato¹, E. Zampiva¹

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. Fernandes¹, R. C. Pereira¹, A. Neto¹, D. F. Valcarcel¹, J. Sousa¹, B. B. Carvalho¹, V. Kiptily², B. Syme², P. Blanchard³, A. Murari⁴, C. M. B. A. Correia⁵, C. A. F. Varandas¹, JET-EFDA Contributors⁶

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. Higuchi¹, M. Nakao¹, R. Itoh¹, S. Y. Suzuki¹, E. Nakano²

¹*High Energy Accelerator Research Organization, Japan*; ²*Osaka City University, Japan*

DAQ2-6

Readout Hardware and Firmware Architecture of the HFT PXL Detector at STAR ((+%

J. Schambach¹, L. Greiner², T. Stezelberger², X. Sun², M. Szelezniak^{2,3}, C. Vu²

¹*University of Texas at Austin, United States*; ²*Lawrence Berkeley National Laboratory, United States*; ³*IPHC (Institut Pluridisciplinaire Hubert Curien), France*

DAQ3 Data Acquisition 3

DAQ3-1

The Belle II Pixel Detector Data Acquisition and Reduction System ((* +

B. Spruck¹, T. Gessler¹, W. Kuehn¹, S. Lange¹, H. Lin², Z. Liu², D. Muenchow¹, H. Xu^{1,2}, J. Zhao²

¹*University Giessen, Germany*; ²*Institute of High Energy Physics, China*

DAQ3-2

Design Concepts for a Hierarchical Synchronized Data Acquisition Network for CBM ((, %

E. Lemke, U. Bruening,

University of Heidelberg, Germany

DAQ4 Data Acquisition 4

DAQ4-1

Extending the IceCube DAQ System by Integration of the Generic, High-Speed Sorter Module TESS ((, ,

C. C. W. Robson¹, K. Hanson²

¹*Stockholms Universitet, Sweden*; ²*Universté Libre de Bruxelles, Belgium*

DAQ4-2

Readout of GEM Stacks with the CERN SRS System ((- &

M. L. Purschke

Brookhaven National Laboratory, United States

FERT1 FPGA and Electronics Applied to Realtime Systems 1

FERT1-1

Real-time measurement and adjustment of random phase in frequency-nondegenerate 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*

FERT1-2

A Compact Dosimeter for Space Applications

C. Deneau¹, J.-R. Vaill^{1,2}, F. Bezerra³, E. Lorfevre³, R. Ecoffet³, L. Dusseau¹

¹Universite Montpellier 2, France; ²Universite de Nimes, France; ³Centre National d'Etudes Spatiales, France

FERT1-3

A Low-Resolution, GSa/s Streaming Digitizer for a Correlation-Based Trigger System

K. Nishimura¹, M. Andrew¹, Z. Cao¹, M. Cooney¹, P. Gorham¹, L. Macchiarulo¹, L. Ritter¹, A. Romero-Wolf², G. Varner¹

¹University of Hawaii at Manoa, United States; ²Jet Propulsion Laboratory, United States

PS3 Poster Session 3

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 Water Cherenkov 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. Jastrzembki, 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}

¹University of Science and Technology of China, China; ²State 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

PS3-8

Clock Distribution Board for the $4\pi\beta\text{-}\gamma$ Coincidence Counting System

H. Wang^{1,2}, K. Song^{1,2}, J. Yang^{1,2}, P. Cao^{1,2}, K. Zhang^{1,2}

¹University of Science and Technology of China, China; ²the 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}

¹University of Science and Technology of China, China; ²the 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

PS3-13**A High Speed High Resolution Digital Platform for the $4\pi\beta\text{-}\gamma$ Coincidence Counting System** *) &K. Zhang^{1,2}, K. Song^{1,2}, J. Yang^{1,2}, P. Cao^{1,2}, H. Wang^{1,2}¹University of Science and Technology of China, China; ²the 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

PS3-16**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. Sanchis², V. Gonzalez², A. Gadea¹, J. M. Blasco², D. Barrientos^{1,2}, J. J. Valiente Dobon³, M. Tripon⁴, A. Boujrad⁴, C. Houamer⁴, M. Jastrzab⁵, G. de Angelis³, M. N. Erduran⁶, S. Erturk⁷, T. Huyuk¹, G. Jaworski^{8,9}, J. Nyberg¹⁰, M. Palacz⁹, G. de France⁴, A. di Nitto¹¹, A. Pipidis³, R. Tarnowski⁹, R. Wadsworth¹², A. Triossi³¹IFIC (Institut de fisica corpuscular), Spain; ²UV (Universitat de Valncia), Spain; ³INFN, Laboratori Nazionali di Legnaro, Italy; ⁴Grand Accelérateur National d'Ions Lourds, France; ⁵Niewdoczanski Institute of nuclear physics, Polish Academy of Sciences, Poland; ⁶Istanbul Sabahattin Zaim university Istanbul, Turkey; ⁷Nigde Universitesi, Turkey; ⁸Warsaw university of technology, Poland; ⁹University of Warsaw, Poland; ¹⁰Uppsala University, Sweden; ¹¹INFN, Sezione di Napoli, Italy; ¹²University of York, United Kingdom**PS3-18****Design of an Optical Uplink with 10GBit/s Link Between PCIe and MicroTCA** **) , *H. Kleines, P. Wstner, A. Ackens, M. Drochner, P. Kmmmerling, 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}¹University of Science and Technology of China, China; ²State 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. Nakao¹, C. Lim², M. Friedl³, T. Uchida¹¹KEK, High Energy Accelerator Research Organization, Japan; ²Yonsei University, Korea; ³HEPHY, Austrian Academy of Sciences, Austria**PS3-23****Development of New Data Acquisition System at Super-Kamiokande for Nearby Supernova Bursts** **) * \$'T. Tomura¹, Y. Hayato¹, M. Ikeno², M. Nakahata¹, S. Nakayama¹, Y. Obayashi¹, K. Okumura¹, M. Shiozawa¹, S. Y. Suzuki², T. Uchida², S. Yamada³, T. Yokozawa¹¹University of Tokyo, Japan; ²High Energy Accelerator Research Organization (KEK), Japan; ³Tohoku University, Japan

PS3-24

Development of a Clock Distribution System for Sub-Nanosecond Time Synchronization over Long Distances ***\$,

Y. Yang, K. Hanson, T. Meures

Interuniversity Institute 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 Lentdecker¹, E. Verhagen¹, Y. Yang¹, L. Jonsson², B. Lundberg², U. Mjornmark², A. Oskarsson², L. Osterman², E. Stenlund²

¹*Universite Libre de Bruxelles, Belgium;* ²*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. Visser¹, J. T. Anderson², B. Buck³, A. S. Kreps², T. Ljubicic⁴

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. Petrucci¹, G. Bauer², U. Behrens³, J. Branson⁴, S. Bukowiec¹, O. Chaze¹, S. Cittolin⁵, J. A. Coarasa Perez¹, C. Deldicque¹, M. Dobson¹, A. Dupont¹, S. Erhan⁶, D. Gigi¹, F. Glege¹, R. Gomez - Reino¹, C. Hartl¹, A. Holzner⁴, L. Masetti¹, F. Meijers¹, E. Meschi¹, R. Mommsen⁷, C. Nunez-Barranco-Fernandez¹, V. O'Dell⁷, L. Orsini¹, C. Paus², M. Pieri⁴, G. Polese¹, A. Racz¹, O. Raginel², H. Sakulin¹, M. Sani⁴, C. Schwick¹, A. C. Cristian Spataru¹, F. Stoeckli², K. Sumorok²

¹*CERN, Switzerland;* ²*Massachusetts Institute of Technology, USA;* ³*DESY, Germany;* ⁴*University of California, San Diego, USA;* ⁵*Eidgenossische 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. Gao¹, D. Gao¹, B. Gan¹, L. Wang¹, Q. Zheng¹, F. Xue¹, T. Wei¹, Y. Hu²

¹*Northwestern Polytechnical University, China;* ²*UMR 7178 CNRS/UDS, France*

PS3-31

Communication Architecture of DAQ-Middleware ***' +

Y. Nagasaka¹, H. Sendai², E. Inoue², T. Koutoku³, N. Ando³, S. Ajimura⁴, M. Wada⁵

¹*Hiroshima Institute of Technology, Japan;* ²*High Energy Accelerator Research Organization, Japan;* ³*The National Institute of Advanced Industrial Science and Technology, Japan;* ⁴*Osaka University, Japan;* ⁵*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. Lopez¹, J. Vega², D. Alves³, S. Dormido-Canto⁴, A. Murari⁵, J. M. Ramirez⁴, R. Felton⁶, M. Ruiz¹, G. D. Arcas¹, and JET-EFDA Contributors⁷

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

PS3-35**Implementation of Intelligent Data Acquisition Systems for Fusion Experiment Using EPICS and FlexRIO****Technology *** (+**

D. Sanz¹, M. Ruiz¹, R. Castro², J. Vega², J. M. Lopez¹, E. Barrera¹, N. Utzel³, P. Makijarvi³

¹Universidad Politécnica de Madrid, Spain; ²Asociación EURATOM/CIEMAT, Spain; ³ITER Organization, France

PS3-36**DEAP-3600 Dark Matter Experiment Data Acquisition and Trigger System ***)**

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}

¹University of Science and Technology of China, China; ²Department 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. Hao¹, S. Liu^{1,2}, Q. An^{1,2}

¹University of Science and Technology of China, China; ²State 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. Gonzalez³, M. Bellato², A. Gadea¹, D. Bazzacco², J. M. Blasco³, D. Bortolato², F. J. Egea^{1,3}, R. Isocrate², A. Pullia⁴, G. Rampazzo², E. Sanchis³, A. Triossi²

¹Istituto de Fisica Corpuscular (CSIC-UV), Spain; ²Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy;

³Departamento Ingeniera Electronica, Universitat de Valencia, Spain; ⁴Istituto 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. Gonzalez³, M. Bellato², A. Gadea¹, D. Bazzacco², J. M. Blasco³, D. Bortolato², F. J. Egea^{1,3}, R. Isocrate², A. Pullia⁴, G. Rampazzo², E. Sanchis³, A. Triossi²

¹Istituto de Fisica Corpuscular (CSIC-UV), Spain; ²Istituto de Fisica Nucleare (INFN), Sezione di Padova, Italy;

³Departamento Ingeniera Electronica, Universitat de Valencia, Spain; ⁴Istituto de Fisica Nucleare (INFN), Sezione di Milano, Italy

PS3-43**SEU Effects on Power Consumption in Xilinx FPGAs **** - \$**

A. Aloisio^{1,2}, V. Bocci², G. Chiodi², R. Giordano^{1,2}, V. Izzo², L. Sterpone³, M. Violante³

¹University of Naples 'Federico II' and INFN, Italy; ²INFN, Italy; ³Politecnico di Torino, Italy

PS3-44**Online Software Time Calibration for a Continuous Air Shower Array **** -)**

S. Mastroianni¹, M. Iacovacci²

¹INFN Napoli, Italy; ²Universita' Federico II and INFN sez. di Napoli, Italy

FERT2 FPGA and Electronics Applied to Realtime Systems 2

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. Shen¹, S. Liao¹, S. Liu¹, J. Wang¹, W. Liu², C. Peng¹, Q. An¹

¹University of Science and Technology of China, China; ²Ningbo University, China

FERT2-4

128 Channels of Multi-GSa/s Waveform Sampling and Digitization in an 800 cm³ Package

M. Z. Andrew, C. N. Lim, K. A. Nishimura, L. J. Ridley, G. S. Varner

University of Hawaii, United States

FERT2-5

A Stepped-Up Tree Encoder for the 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}

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

FERT2-6

A Silicon Diode Based Detector for Radiation Measurement in High Altitude Natural Environment

D. Pantel¹, J.-R. Vaillat¹, F. Wrobel¹, L. Dilillo², J.-M. Galliere², J.-L. Autran³, P. Cocquerez⁴, P. Chadoutaud⁴, F. Saigne¹

¹Universite Montpellier 2, France; ²LIRMM, France; ³IM2NP, France; ⁴CNES, France

PS4 Poster Session 4

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. Shen³, L.-C. Zhu³, P.-Y. Tang^{1,2}, J.-J. Liu^{1,2}, F. Li^{1,2}, G. Jin^{1,2}, J. Wang^{1,2}

¹Univ. of Sci. & Tech. of China, China; ²State Key Laboratory of Technologies of Particle Detection and Electronics, China; ³National 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

PS4-6

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}

¹University of Science and Technology of China, China; ²State Key Laboratory of Particle Detection and Electronics, China

PS4-7

Axisymmetric Magnetic Control in ITER

L. Zabeo¹, G. Ambrosino², M. Cavinato³, Y. Gribov¹, D. Humphreys⁴, J. A. Snipes¹, M. Walker⁴, A. Kavin⁵, V. Lukash⁶, G. Vayakis¹

¹ITER Organisation, France; ²CREATE/ENEA/Euratom Association, Universita' di Napoli Federico II, Italy; ³Fusion for Energy (F4E), Spain; ⁴General Atomics, USA; ⁵D.V.Efremov Scientific Research Institute, Russia; ⁶Kurchatov 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 ***+* +

E. Barone^{1,2}, F. Acernese^{1,2}, R. De Rosa^{3,2}, G. Giordano¹, 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. Cichalewski¹, J. Branlard², H. Schlarb², N. Walker², J. Carwardine³

¹*Technical University of Lodz, Poland*; ²*Deutsches Elektronen Synchrotron, Germany*; ³*Argonne National Laboratory, USA*

PS4-12

Timing and Triggering System for the European XFEL Project - a Double Sized AMC Board ***+++

A. Hidvegi¹, P. Gessler², H. Kay³, K. Rehlich³, C. Bohm¹

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. Robson¹, C. Bohm¹, K. Rehlich², R. Kammering²

¹*Stockholms Universitet, Sweden*; ²*Deutsches Elektronen-Synchrotron, Germany*

PS4-17

High-Performance Scalable Information Service for the ATLAS Experiment. ***+, (

S. Kolos

University of California Irvine, USA

PS4-18

Recent Developments in Control Software for Optical Synchronization Applications at DESY ***+, -

P. Predki, 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

PS4-22

Development of an ATCA Based Data Acquisition System for High Speed, Direct Detection X-Ray Pixel

Sensors **\$, \$(

J. Joseph¹, D. Contarato¹, P. Denes¹, D. Doering¹, P. McVittie¹, J. Weizeorick²

¹*Lawrence Berkeley National Laboratory, United States*; ²*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

FERT3 FPGA and Electronics Applied to Realtime Systems 3

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. Esteban¹, J. A. Lopez², E. Sedano², M. Sanchez¹

¹*Centro de Investigaciones Energticas Medioambientales y Tecnolgicas, Spain*; ²*Universidad Politecnica de Madrid, Spain*