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## Welcome to ICALEPCS 2005

This is already the 10th ICALEPCS conference, demonstrating the continued importance of controls in the more and more complex physics experiments which are being built. In this Year of Physics, the three best represented fields, High Energy Physics, Astronomy and Fusion, are all embarking on large international projects. In these, the controls aspect has long since left the role of simply switching equipment on and off. The new generation experiments are connected in world-wide networks and experimentalists are able to optimise their installations, analyse their data and discuss their results, all over the internet.

This evolution is reflected in the 2005 conference programme, in which methodology and languages play a larger role than equipment and hardware. ICALEPCS is keeping in touch with progress.

*Bertrand FRAMMERY, CERN* *Jo LISTER, CRPP-EPFL*

## About ICALEPCS

The 10th International Conference on Accelerator and Large Experimental Physics Control Systems, was held in Geneva, Switzerland, 10-14 October 2005, at the International Conference Center of Geneva (CICG). ICALEPCS 2005 falls in the year that UNESCO has declared the "World Year of Physics".

ICALEPCS covers all aspects of control and operation of Experimental Physics facilities including particle accelerators, particle detectors, optical telescopes, radio telescopes, nuclear fusion tokamaks, stellarators, and high power lasers.

The series of ICALEPCS conferences started in 1987 in Villars-sur-Ollon in Switzerland. The idea to hold a series of biennial Conferences in the field of controls for Experimental Physics facilities was launched by the European Physical Society's (EPS) Interdivisional Group on Experimental Physics Control Systems (EPCS). It was actually triggered by some earlier initiatives, which started in Berlin (EPS Conference on Computing in Accelerator Design and Operation, September 1983), followed by two specific workshops on accelerator control systems in 1985 at BNL (Brookhaven, USA) and LANL (Los Alamos, USA)

ICALEPCS has moved around the world: the second ICALEPCS, in 1989, was held in Vancouver, hosted by TRIUMF; the 1991 conference was held in Tsukuba, hosted by KEK; in 1993 it was hosted by the HMI in Berlin; in 1995 it was held in Chicago, hosted by both Fermilab and the APS of ANL; in 1997 it was organised by the IHEP in Beijing, China; in 1999 it was hosted by Sincrotrone Trieste, Italy; in 2001 it took place in San Jose (CA, USA) hosted by SLAC. Most recently, ICALEPCS 2003 was held in Gyeongju, South Korea, hosted by the Pohang Accelerator Laboratory and the Pohang University of Science and Technology.

Over the years ICALEPCS has seen its number of participants growing as well as the number of contributing institutes and countries. There were more than 400 participants at ICALEPCS 1997 in Beijing, and ICALPECS 1999 in Trieste. There were control specialists from more than 30 different countries covering Africa, America, Asia, and Europe, representing well over one hundred organisations, both scientific institutes and industries.

ICALEPCS offers a unique opportunity to all those involved worldwide in the challenging field of controls for experimental physics to hear about the latest developments, new projects, the latest technologies being applied, to discuss problems with peers from the world's major laboratories, to share solutions, to identify new issues, and to shape future directions for research.

## ICALEPCS Committees

### *LOC - 2005 Local Organising Committee*

| | | |
|---|---|---|
| Pierre Charrue | CERN | Computing infrastructure |
| Axel Daneels | CERN | General organisation |
| Basil Duval | CRPP-EPFL | Abstracts and paper processing |
| Bertrand Frammery | CERN | Conference co-chairman |
| Lennart Jirden | CERN | Printing and web site |
| Danièle Lajust | CERN | Conference secretary |
| Jo Lister | CRPP-EPFL | Conference co-chairman |
| Robert Müller | CERN | Commercial aspects |
| Chris Parkman | CERN | Industrial programme |
| Carlos Pinto-Pereira | CERN | Web site |
| Wayne Salter | CERN | PC chairman |

### *ISAC - 2005 International Scientific Advisory Committee*

| | | | |
|---|---|---|---|
| Giorgio Bassato | LNL | John MacLean | ANL |
| Daniele Bulfone | Elettra | Anton Mezger | PSI |
| Winfried Busse | HMI | Michael M. Mouat | TRIUMF |
| Gianluca Chiozzi | ESO | Roland Müller | BESSY |
| Matthias Clausen | DESY | Jiri Navratil | CTU |
| Peter Clout | Vista | Gregor Neu | IPP |
| Axel Daneels (*chairman*) | CERN | Nhi Dien Nguyen | NRC |
| Subrata Dasgupta | VECC | Pierre Ninin | CERN |
| Bertrand Frammery | CERN | James Rezende Piton | LNLS |
| Andy Goetz | ESRF | Rudolf Pose | JINR |
| Jean-François Gournay | CEA-Saclay | Gianni Raffi | ESO |
| Dave Gurd | SNS | Christoph Rethfeldt | HMI |
| John Humphrey | SLAC | François Saint-Laurent | CEA-Cadarache |
| Lennart Jirden | CERN | Wayne Salter | CERN |
| Noriichi Kanaya | U. Ibaraki | Völker Schmidt | IGI |
| Tadahiko Katoh | KEK | Mario Serio | LNF |
| In Soo Ko | POSTECH | Hamid Shoaee | LANL |
| Ivan Kohler | NAC-TLABS | Joseph F. Skelly | BNL |
| Kenichi Kurihara | JAERI | Rudolf Steiner | GSI |
| Sharon Lackey | FNAL | Ryotaro Tanaka | Spring-8 |
| Eric Lecorché | GANIL | Karen White | JLAB |
| Steve Lewis | LLNL | Jijiu Zhao | IHEP-Bejing |
| Jo Lister | CRPP-EPFL | | |

## *ISC - ICALEPCS Steering Committee*

| | |
|---|---|
| Daniele Bulfone *(chairman)* | Sincrotrone Trieste |
| Jean-François Gournay | CEA-Saclay |
| John William Humphrey | SLAC |
| Lawrence Hoff | BNL |
| Tadahiko Katoh, | KEK |
| In Soo Ko | POSTECH |
| Sharon Lackey | FNAL |
| William McDowell | ANL |
| Roland Müller | BESSY |
| Ryotaro Tanaka | Spring-8 |
| Jijiu Zhao | IHEP-Beijing |

## *PC - 2005 International Programme Committee*

| | |
|---|---|
| Vito Baggiolini | CERN |
| Renaud Barillère | CERN |
| Giorgio Bassato | LNL |
| Daniele Bulfone | ELETTRA |
| Peter Chochula | CERN |
| Frank Glege | CERN |
| Beat Jost | CERN |
| Tadahiko Katoh | KEK |
| Timo Korhonen | PSI |
| Jo Lister | CRPP-EPFL |
| Mike Mouat | TRIUMF |
| Gregor Neu | IPP Garching |
| Dennis Nicklaus | FNAL |
| Gianni Raffi | ESO |
| Joe Rothberg | CERN |
| François Saint-Laurent | CEA-Cadarache |
| Wayne Salter (*chairman*) | CERN |
| Joe Skelly | BNL |
| Ryotaro Tanaka | Spring-8 |
| Karen White | JLAB |

## Organisers and Sponsors

### *Organisers*

ICALEPCS 2005 was jointly organised by the European Organisation for Nuclear Research (***CERN***), by the “Centre de Recherches en Physique des Plasmas” (***CRPP***) of the “École Polytechnique Fédérale de Lausanne” (EPFL), the Swiss Federal Polytechnic School of Lausanne, and by the European Physical Society (***EPS***) Interdivisional Group on Experimental Physics Control Systems (***EPCS***). It was held under the auspices of the European Physical Society (***EPS***) as a Europhysics Conference, the Institute of Electrical and Electronics Engineers (***IEEE***) through its Nuclear and Plasma Science Society (NPSS), the Association of Asia Pacific Physics Societies (***AAPPS***), the American Physical Society (***APS***) and the International Federation for Information Processing (***IFIP***) through its Technical Committee on Computer Applications in Technology (TC5).

### *Sponsors and Partner*

ICALEPCS 2005 was sponsored by the **Swiss Federal Government**, the **State of Geneva**, the **CICG**, the **Département de Haute Savoie** (France), **Agilent Technologies**, **Hewlett-Packard** and **Siemens**.

**Swiss** was the ICALEPCS 2005 official carrier.

**DELL**, the ICALEPCS 2005 partner, supplied the entire informatics infrastructure

On top of waiving their registration fees, ICALEPCS'2005 also supplied grants to 27 participants from industrially emerging nations thanks to financial support from:

- **INTAS**, the International Association for the Promotion of Co-operation with Scientists from the New Independent States of the Former Soviet Union;
- "**SCOPES** - Scientific Co-operation between Eastern Europe and Switzerland 2005-2008" of the Swiss National Science Foundation (SNSF) and the Swiss Agency for Development and Cooperation (SDC);
- **EPS**, via the "East West Fund" and the "Young Physicists Fund";
- **ICTP** (Abdus Salam International Center for Theoretical Physics) in Trieste.

## ICALEPCS 2005 in Numbers

ICALEPCS 2005 was attended by 442 delegates from 27 countries, representing more than 160 organisations. 72% of the delegates came from Europe, 16% from North America, 11% from Asia and 1% from Australia.

11 speakers were invited to present their work in 30 minute papers, 79 speakers were selected for oral presentation, some plenary and some parallel and 183 papers were presented in the two poster sessions.

10 companies participated in oral presentations as part of the Industrial Exhibition, which attracted 17 exhibitors.

The Conference Dinner was well attended by 390 people and 450 people attended the concert.

## Pre-Conference Programme

A range of pre-conference workshops and tutorials was arranged in conjunction with ICALEPCS 2005. They were held at the Technopole in ARCHAMPS (France), a twenty minute drive from CERN, just across the French border, at the foot of the Salève mountain.

**EPICS** Workshop - organised by Matthias CLAUSEN (DESY**)**
**ACS** (ALMA Common Software) Workshop - organised by Gianluca CHIOZZI (ESO)
**TANGO** Workshop - organised by Andy GÖTZ (ESRF)
Joint **ECLIPSE** Workshop - organised by Matthias CLAUSEN (DESY) and Andy GÖTZ (ESRF)

A tutorial took place in the CICG conference centre in Geneva on Sunday afternoon, presented by Markus VÖLTER (*Völter Ingenieurbüro für Softwaretechnologie*) and entitled:

"Model-driven Development of Distributed Systems"

## Scientific Programme

As in previous ICALEPCS conferences, ICALEPCS 2005 consisted of plenary and parallel oral sessions, as well as poster sessions, some with live demos.

The conference was organised according to the following tracks :

1 - Status Report on Projects
2 - Process Tuning, Automation and Synchronisation
3 - Security and Other Major Challenges
4 - Hardware Technology Evolution
5 - Software Technology Evolution
6 - Development Approaches
7 - Operational Issues
8 - Dealing with Evolution

*Conference papers are coded as DDN.J-TX where DD is the day, N is the session number in the day, J is the order in each session, T is the track and X is I (Invited) or O (Oral).*

*The session number is coded A, B, C for parallel sessions.*

*Speakers marked * did not provide a written paper by the deadline. Some of these papers can be found on the conference web site under post-deadline submissions:*

*http://icalepcs2005.web.cern.ch/icalepcs2005/*

## Monday 10th October

### *Opening Session*

| | | |
|---|---|---|
| Axel Daneels, CERN | | Introduction |
| Carlo Lamprecht | | Welcome speech on behalf of the "Conseil d'État de Genève" |
| Jo Lister, CRPP-EPFL | | Welcome by the local organisers |
| Jos Engelen, CERN | | The machine and experiment challenges of LHC |

### *MO2, Status Reports – 1*

| | | |
|---|---|---|
| MO2.1-1I | B. Frammery | The LHC Control System |
| MO2.2-1I | G.Raffi | The ALMA Computing Project-Update and Management Approach |
| MO2.3-1O | P.LaPenna | The Status of VIRGO |
| MO2.4-1O | P.J.VanArsdall | Status of the National Ignition Facility and Control System |

### *MO3, Status Reports – 2*

| | | |
|---|---|---|
| MO3.1-1O | E.Lawerman | SCADA in the LOFAR radio telescope |
| MO3.2-1O | T.Fukui | Status of the SCSS Control System First Phase of an 8Gev XFEL Project In SPRING-8 |
| MO3.3-1O | M.Lonza | The Control System of the ELETTRA Booster Injector |
| MO3.4-1O | S.Zelepoukine | The Detector Control System for the Electromagnetic Calorimeter of the CMS Experiment at the LHC |
| MO3.5-1O | T.Katoh | Towards the Commissioning of J-PARC |
| MO3.6-1O | A.Augustinus | ALICE Detector Control Status Report |

### *MO4A, Operational Issues – 1*

| | | |
|---|---|---|
| MO4A.1-7O | J.Cuperus | The Directory Service for the CERN Accelerator Control Application Programs |
| MO4A.2-7O | L.Abadie | The LHCb Configuration Database |
| MO4A.3-7O | F.Carena | The ALICE Experiment Control System |
| MO4A.4-7O | G-H. Hemelsoet | Cryogenic Magnet Tests for the LHC: Process Operation Using Web-based Tools and Facilities |

### *MO4B, Process Tuning, Automation and Synchronization – 1*

| | | |
|---|---|---|
| MO4B.1-2O | J.Serrano | FPGA-based Low Level Control of CERN's LINAC 3 Cavities |
| MO4B.2-2O | A.Balzer | Diagnostics and Optimization Procedures for Beamline Control at BESSY |
| MO4B.3-2O | M.Park | Development of a Time Synchronization System for KSTAR with a VME-Bus System |

## Tuesday 11th October

### *TU1, Software Technology Evolution – 1*

| | | |
|---|---|---|
| TU1.1-5I | J.Hoeller * | Lightweight J2EE Architecture |
| TU1.2-5O | R.W.Carey | Status of the use of Large-Scale CORBA-Distributed Software Framework for NIF Controls |
| TU1.3-5O | L.Mestre * | A Pragmatic and Versatile Architecture for LHC Controls Software |
| TU1.4-5O | A.Vodovnik | Model Driven Architecture Control Systems and Eclipse |

### *TU2, Process Tuning, Automation and Synchronization – 2*

| | | |
|---|---|---|
| TU2.I-2I | L.J.Lagin | Shot Automation for the National Ignition Facility |
| TU2.2-2O | F.Carbognani | Automation of the Lock Acquisition of the 3 Km Arm VIRGO Interferometer |
| TU2.3-2O | R.Felton * | Real-Time Measurement and Control at JET |
| TU2.4-20 | A.Barriuso-Poy | Hierarchical Control for the ATLAS Experiment |

### *TU3, Security and Other Major Challenges – 1*

| | | |
|---|---|---|
| TU3.1-3O | S.Poulsen | Best Practices in the Design of a Secure Control System |
| TU3.2-3O | M.Ishii | Construction and Management of a Secure Network in SPring-8 |
| TU3.3-3O | U. Epting | Computing and Network Infrastructure for Controls CNIC |
| TU3.4-3O | G.Morpurgo | The Software for the CERN Detector Safety System |

### *TU4A, Software Technology Evolution – 2*

| | | |
|---|---|---|
| TU4A.1-5O | S.K.Feng | EPICS/RTEMS/MVME5500 for Real-time Controls at NSLS |
| TU4A.2-5O | K.Rehlich | Integrating a Fast Data Acquisition System into the DOOCS Control System |
| TU4A.3-5O | J.Bobnar | Visual DCT's Latest Hits |

### *TU4B, Status Reports – 3*

| | | |
|---|---|---|
| TU4B.1-1O | D.Fernandez-Carreiras | Status of the Alba Control System |
| TU4B.2-1O | V.I.Zaitsev | Present Status of the Angara-5 Fusion Facility Control System |
| TU4B.3-1O | S.M.Schmeling | A Summary of the IEEE Real-Time 2005 Conference held at Stockholm |

### *Poster Session*

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO1.001-1 | Y.Sato | Progress of a Control System for Slow-Extraction Beam Lines at J-PARC |
| PO1.002-1 | V.Alferov | A Cryo Complex Control System |
| PO1.003-1 | R.Keitel | The ISAC Control System - Phase II |
| PO1.004-1 | C.Neri | The Laser In-vessel Viewing System IWS for ITER Present Status and New Developments of the Control Processing snd Data Visualization Systems |
| PO1.005-1 | A.Zelinsky | Progress in Development of Kharkov X-Ray Generator Nestor |
| PO1.009-1 | H.Takahashi | Data Acquisition System for J-PARC 3GeV RCS |
| PO1.010-1 | D.Anicic | PROSCAN Control System Status Report |
| PO1.011-1 | P.Schütt | Operation Modes and Controls Aspects of FAIR |

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO1.012-1 | P.deVicente | Development of the Control System for the 40m Radio telescope of the OAN Using the Alma Common Software |
| PO1.016-1 | T.Henss | Hard - and Software of the ATLAS Pixel Detector Control System |
| PO1.017-1 | A.Tauro | The Detector Control System for the HMPID Detector in the Alice Experiment at LHC |
| PO1.018-1 | N.P.Rees | Progress on the Implementation of the Diamond Control System |
| PO1.019-1 | T.Bhattacharjee | Progress of Computerization in VEC Modernisation |
| PO1.021-1 | J.Zhao | Status of the BEPCII Control System |
| PO1.023-1 | E.Matias | The Canadian Light Source Control System Lessons Learned from Building a Synchratoron and Beamlines Control System |
| PO1.024-1 | T.Katoh | Development of Beam Monitor DAQ System for 3NBT at J-PARC |
| PO1.025-1 | R.Baer | Status and Conceptual Design of the Control System for the Heavy Ion Therapy Accelerator Facility HICAT |
| PO1.028-1 | F.Weierud | Control of the Low Level RF System of the Large Hadron Collider |
| PO1.029-6 | Y.Xinglin | Design and Implementation of Control System for 4MeV LIA |
| PO1.030-6 | G.Morpurgo | The DSS Synoptic Facility |
| PO1.031-6 | T. Qing | A Preliminary Design of a Control and Monitoring System Based on Network for a Pulsed Power Device |
| PO1.032-6 | P.DiMarcantonio | Transmitting Huge Amounts of Data Design Implementation and Performance of the Bulk Data Transfer Mechanism in ACS |
| PO1.033-6 | K. Evans | The EPICS Process Variable Gateway -- Version 2 |
| PO1.034-6 | C.H.Wang | The Insertion Device Control in BEPC |
| PO1.035-6 | I.Laugier | Development of the Vacuum Control System for the LHC. |
| PO1.036-6 | V.Aleynikov | QNX Based Software for Control System of FLNR |
| PO1.037-6 | A.Gotz | Abstract Device Pattern and TANGO |
| PO1.038-6 | C.H.Wang | Power Supply Control for BEPCII Rings and Transport |
| PO1.040-6 | F.Gougnaud | The Control System for the MIRI Imager Ground Support Equipment |
| PO1.042-6 | G.Thomas | LHC GCS A Framework for the Production of 23 Homogeneous Control Systems |
| PO1.043-6 | S.Page | Integration of the LHC Power Converters within the High-Level LHC Control System |
| PO1.044-6 | A.Oates | Development of the Control System for ERLP |
| PO1.045-6 | R.Jacobsson | Controlling Electronics Boards in LHCb with PVSS |
| PO1.046-6 | C. Timossi | The Use of FPGAs As A Platform for Distributed Control Systems |
| PO1.047-6 | K.H.Kim | The Integrated Control System for KSTAR |
| PO1.048-6 | N.P.Rees | Development of Photon Beamlines at Diamond |
| PO1.049-6 | M. Gonzalez-Berges | Frameworking: A Collaborative Approach to Control Systems Development |
| PO1.050-6 | C.Kuo | Integration of New Digital BPM in the Taiwan Light Source |
| PO1.051-6 | D.Beck | The CS Framework: A Labview Based Approach to SCADA Systems |
| PO1.052-6 | C.H.Kuo | Embedded Linux System for Accelerator Control Applications |
| PO1.054-6 | D.Beltran | A TANGO Based Control System for a 3D Measurement Bench for Magnets |
| PO1.056-6 | P.C.Burkimsher | Scaling Up PVSS |

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO1.057-6 | D.Purcell | An In-Line Emittance Scanner Based on a LabVIEW Style State Machine with Sequencer |
| PO1.058-6 | O. Pinazza | Customization and Tuning of the Control System for the Time of Flight Detector of the ALICE Experiment |
| PO1.059-6 | L.T.Hoff | Experience with Collaborative Development for the Spallation Neutron Source from a Partner Lab Perspective |
| PO1.060-6 | T. Luigi | The Development of Control and Measurement Components for Particle Accelerator Controls: The Role of Industrial Companies |
| PO1.062-6 | R.Gomez-Reino | CMS DCS Design Concepts |
| PO1.064-6 | E.Barbero | Hardware Commissioning of the LHC Quality Assurance Follow-up and Storing of the Test Results |
| PO1.068-7 | A.Ymashita | WARCS Wide Area Remote Control System in SPring-8 |
| PO1.069-7 | D.Purcell | Lessons Learned after Implementation and Management of Half of the SNS Diagnostics PC-based Input Output Controllers LOCS |
| PO1.070-7 | T.Bhattacharjee | Design and Development of Micro-controller Based Embedded System for Different Types of Power Supplies |
| PO1.071-7 | M.Joyce | Software Support during a Control Room Upgrade |
| PO1.072-7 | S.Karnaev | Automation of Operations on the VEPP-4 Control System |
| PO1.073-7 | E.McCrory | Operational Perspective on Maintaining the Java-Based Shot Data Acquisition System for the Tevatron Complex |
| PO1.074-7 | J.T.Morris | Storage Techniques for RHIC Accelerator Data |
| PO1.075-7 | M.A.Power | Remote Control of the ATLAS Superconducting Accelerator |
| PO1.076-7 | D.A.Dohan | The APS Cable Database |
| PO1.077-7 | T.T.Nakamura | Data Archiving System in KEKB Accelerators Control System |
| PO1.078-7 | T.Birke | Beyond Devices - An improved RDB Data-Model for Configuration Management |
| PO1.079-7 | T.Birke | Use Case - Configuration Management with a Generic RDB Data-Model |
| PO1.080-7 | H.Sako | Relational database system for J-PARC LINAC and RCS |
| PO1.081-7 | P.Fatnani | Comprehensive Machine Status Monitoring and Information Services Using Web Technology |
| PO1.082-7 | B. Sarkar | Control Strategy for the Main Magnet Power Supplies of the K-500 Superconducting Cyclotron |
| PO1.083-7 | Y.R.Martin | A New Plant Control Software for the TCV Tokamak |
| PO1.084-7 | H.Lutz | The Configuration Databases for the PSI Proton Accelerator Control Systems |
| PO1.085-7 | R.Krempaska | SLS Control System Software Management |
| PO1.087-8 | E.Lecorche | Use of the Ingres RDBMS Inside the New Ganil Linux-based Control System |
| PO1.088-8 | L.David | Linux Migration of the GANIL Control System |
| PO1.089-8 | B.G.Martlew | The SRS Control System 25 Years of Operation and Development |
| PO1.090-8 | S.Deghaye | Hardware Abstraction Layer in Oasis |
| PO1.091-8 | D.Bolkhovityanov | Design and Development of a Control System for Intence Source of Radioactive Ions Prototype |
| PO1.092-8 | K.S.Lee | Experience Porting TRIUMF's 500 MeV Cyclotron Central Control System Software to Intel's 64 bit Itanium Running OpenVMS |
| PO1.093-8 | L.Hechler | Replacement of Outdated VME Boards as a Starting Point for Control System Modernization |

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO1.094-8 | G.Tkacik | Transplanting the Success of Eclipse to Control Systems |
| PO1.095-8 | D.Calcoen | The G-64 Bus at CERN after 25 Years of Operation |
| PO1.096-8 | R.Evans | DevLore A Firmware Library and Web-Based Configuration Control for Accelerator Systems Under Constant Development |
| PO1.098-8 | R.K.Agrawal | SCADA Functionality for Control Operations of Indus-2 |
| PO1.100-8 | W.Mexner | Migration From ACS 1.1 to ACS 4 at ANKA |
| PO1.103-8 | M.Cherney | The STAR Slow Controls System - Status and Upgrade Plans |
| PO1.104-8 | H.Kleines | Implementation of the Control and Data Acquisition Systems for Neutron Scattering Experiments at the New Jülich Center for Neutron Science According to the Jülich-Munich Standard |
| PO1.105-8 | J.W.Humphrey | ARTEMIS the SLAC Accelerator Problem Reporting and Maintenance Scheduling Tool |
| P01.106-8 | V.Voevodin | Experience with the New Control System of IHEP Accelerators Complex |

## Wednesday 12th October

### *WE1, Hardware Technology Evolution – 1*

| | | |
|---|---|---|
| WE1.1-4I | A.McCarthy | PCI Express: an Overview of PCI Express, Cabled PCI Express and PXI Express |
| WE1.2-4O | N. Neufeld | Embedded PCs for Electronics Control in LHCb |
| WE1.3-4O | T.Masuda | Development of a Linux-based small-size controller using PoE technology |
| WE1.4-4O | F.Biancat-Marchet | Advanced Hardware Technology in ALMA Backend and Correlator |
| WE1.5-4O | D.Charlet | SPECS a Serial Protocol for the Experiment |

### *WE2, Development Approaches – 1*

| | | |
|---|---|---|
| WE2.1-6O | O.Holme | The JCOP Framework |
| WE2.2-6I | Ph.Gayet | UNICOS a Framework to build industry-like Control Systems Principles Methodology |
| WE2.3-6O | E.Taurel | The Tango Collaboration Status and some of the Latest Developments |
| WE2.4-6I | G.Chiozzi | The ALMA Common Software ACS - Status and Developments |

### *WE3A, Development Approaches – 2*

| | | |
|---|---|---|
| WE3A.1-6O | C.Saunders | The IRMIS Object Model and Services API |
| WE3A.2-6O | C.H.Sicard | Deploying the UNICOS Industrial Controls Framework In Multiple Projects and Architectures |
| WE3A.3-6O | A.Farris | The ALMA Telescope Control System |
| WE3A.4-6O | I.Verstovsek | Management System Based on Open Source Tools |
| WE3A.5-6O | E.van Herwijnen | Control and Monitoring of On-line Trigger Algorithms using Gaucho |

### *WE3B, Operational Issues – 2*

| | | |
|---|---|---|
| WE3B.1-70 | L.Pivetta | Development of the TANGO Alarm System |
| WE3B.2-70 | G.Raupp | Experiment Management System for the ASDEX Upgrade Tokamak |
| WE3B.3-70 | R.K.Agrawal | Software Scenario for Control System of INDUS-2 |
| WE3B.4-70 | D.J.Nicklaus | The Controls System for the Superconducting Module Test Facility |

### *WE4A, Software Technology Evolution – 3*

| | | |
|---|---|---|
| WE4A.1-5O | J.Chrin | Developments to the SLS CORBA Framework for High Level Software Applications |
| WE4A.2-5O | D. Fugate | A Generic Software Interface Simulator for ALMA Common Software |
| WE4A.3-5O | S.B.Wampler | A Middleware-neutral Common Services Software Infrastructure |
| WE4A.4-5O | M.Beharrell | OPC evolution toward UNIX from Windows to World Wide Domination |

### *WE4B, Process Tuning, Automation and Synchronization – 3*

| | | |
|---|---|---|
| WE4B.1-2O | G.Bassato | The Control of the New PIAVE Injector at LNL |
| WE4B.2-2O | P.Fatnani | Orbit Control For INDUS-2 Storage Ring |
| WE4B.3-2O | Q.King | Advanced Uses of the WorldFIP Fieldbus for Diverse Communications Applications within the LHC Power Converter Control System |

## Thursday 13th October

### *TH1, Dealing with Evolution – 1*

| | | |
|---|---|---|
| TH1.1-8I | M.Plesko * | Matching a Control System to the Longevity of Medical Accelerators |
| TH1.2-8O | M.Bickley | Structuring an EPICS System to Optimize Reliability Performance and Cost |
| TH1.3-8O | T.Ohata | A Study of Introduction of the Virtualization Technology into Operator Consoles |
| TH1.4-8O | M. Lamont * | LHC Era Core Control Application Software |
| TH1.5-8O | V.Baggiolini * | JAPC - the Java API for Parameter Control |

### *TH2, Operational Issues – 3*

| | | |
|---|---|---|
| TH2.1-7I | T.Larrieu | Evaluating the Potential of Commercial GIS for Accelerator Configuration Management |
| TH2.2-7O | M.Greenwald | Visions for Data Management and Remote Collaboration for ITER |
| TH2.3-7O | K.Sigerud * | First operational experience with LASER |

### *TH3A, Software Technology Evolution – 4*

| | | |
|---|---|---|
| TH3A.1-5O | S.Deghaye | OASIS Status Report |
| TH3A.2-5O | P.Karlsson | The Introduction of Hierarchical Structure and Application Security to Java Web-Start Deployment |
| TH3A.3-5O | T.Lam | Leveraging the Eclipse Ecosystem for the Scientific Community |
| TH3A.4-5O | R.Pugliese | The GRIDCC project providing a real-time Grid for distributed instrumentation |

### *TH3B, Security and Other Major Challenges – 2*

| | | |
|---|---|---|
| TH3B.1-3O | G.Segura | RAMSES Radiation Monitoring System for the Environment and Safety |
| TH3B.2-3O | A.Tsirou | A Discrete Event System the CMS Tracker Interlocks |
| TH3B.3-3O | K.Zagar | Dependability Considerations in Distributed Control Systems |

### *TH3C, Hardware Technology Evolution – 2*

| | | |
|---|---|---|
| TH3C.1-4O | R.Evans | A Versatile Carrier Board and Associated Timer Module Applications |

### *TH4, Status Reports – 4*

| | | |
|---|---|---|
| TH4.1-1O | P.Betinelli-Deck | Status of the SOLEIL Control System |
| TH4.2-1O | M.Pace * | Experience from the new LEIR control system during machine commissioning |
| TH4.3-1O | J.B.Lister * | The ITER Data Challenges |

### *Poster Session*

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO2.001-2 | M.Zelazny | Recording PEP2 Ring Beam Losses at SLAC |
| PO2.002-2 | S.Cabaret | LHC GCS Process Tuning Selection and use of PID and Smith Predictor for the Regulations of the LHC Experiments Gas Systems. |
| PO2.003-2 | J.Tang | EPICS Based High Power RF Conditioning Control System for the SNS Accelerator RF Test Facility |
| PO2.005-2 | A.Rijllart | Industrial Controls for Test Systems from Superconducting Strands TILL Magnet Fiducialisation in the Tunnel for the LHC Project |
| PO2.007-2 | T.Korhonen | Enhancements of the Filling Pattern Controls at the Swiss Light Source |
| PO2.008-2 | Ch.Kuo | Automatic Beam Profile and Emittance Measurement for the Beam Transport Line |

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO2.009-2 | Yu.Bashmakov | Control of Gamma-Beam Generation at the Synchrotron Pakhra by Nonlinear Resonance Excitation of Accelerated Bunches |
| PO2.010-2 | R.Nobrega | A Prototype of the LHCb Muon Detector Control System |
| PO2.011-2 | M.Lonza | Design of a Fast Global Orbit Feedback System for the ELETTRA Storage Ring |
| PO2.012-2 | C.Briegel | BPM Search Algorithms for Beam Injection and Extraction at Fermilab |
| PO2.014-2 | P.Gurd | The Development of Automatic Sequences for the RF and Cryogenic Systems at the Spallation Neutron Source |
| PO2.015-2 | J.Tang | A Dynamic System Model Validation Scheme with Fuzzy Logic Techniques |
| PO2.016-2 | M.Jonker | The Controls Architecture for the LHC Collimation System. |
| PO2.017-2 | R.K.Agrawal | Synchronous Ramping Scheme for SRS INDUS-2 |
| PO2.020-2 | A.Antoine | The LHC Beam Dumping System Trigger Synchronisation and Distribution System |
| PO2.021-2 | Y.Chernousko | Progress in Timing System Developments for Diamond Light Source |
| PO2.022-2 | K.Kobayashi | FPGA Based Bunch-by-bunch Feedback Signal Processor |
| PO2.024-2 | M.Ariola | Real-Time Control of Plasma Profiles at JET |
| PO2.025-2 | P.Chevtsov | Automated Image Quality Optimization for Synchrotron Light Interferometers |
| PO2.027-2 | M.Mantovani | The Automatic Alignment System for the Virgo Interferometer |
| PO2.030-2 | I.S.Uzun | Initial Design of the Fast Orbit Feedback System for DIAMOND Light Source |
| PO2.031-3 | B.Todd | The Architecture Design and Realisation of the LHC Beam Interlock System |
| PO2.032-3 | J.R.Alexander | Upgrading the Daresbury Personnel Safety Interlock System |
| PO2.033-3 | A.Vaguine | Informational and Analytical Route Safety Estimation and Risk Calculation System for Dangerous Object Transportation |
| PO2.034-3 | D.J.Nicklaus | Secure Client Tier for the Accelerator Control System |
| PO2.035-3 | A.C.Mezger | Protection Mechanisms for a High Power Accelerator |
| PO2.036-3 | R.Harrison | Powering Interlock Systems at CERN with Industrial Controllers |
| PO2.037-3 | B.Puccio | Beam Interlocking Stragety between the LHC and its Injector |
| PO2.038-3 | P.Fraboulet | Application of Advanced Hardware Testing and Inventory Management Methods for the LHC Power Converter Control System |
| PO2.039-4 | L.T.Hoff | Experience with FPGA-based Processor Core as a Front-end Computer |
| PO2.040-4 | S.Ramamoorthy | NSLS Control System Interface to Parker 6K Motion Controller System |
| PO2.041-4 | M.Riva | A Novel FPGA-based Digital Approach to Neutron/Gamma-Ray Pulse Acquisition and Discrimination in Scintillators |
| PO2.042-4 | M.Werner | A Fast Magnet Current Change Monitor for Machine Protection in HERA and the LHC |
| PO2.043-4 | V.N.Boriskin | The Distribution Density Monitoring of Charged Particles by Computer Tomography Method |
| PO2.044-4 | M.Giacchini | An EPICS IOC on PC104 |
| PO2.045-4 | K.M. Ha | PLS Fully Digital Controlled Corrector Power Supplies |
| PO2.047-4 | Y.Suzuki | GPIB to Serial Converter |
| PO2.048-4 | H.Takebe | Experiment and Installation of High Resolution Steering Magnet Power Supply for SPRING-8 |

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO2.050-4 | T.Fukui | A Development of High-Speed A/D D/A VME Boards for a Low Level RF System of SCSS |
| PO2.051-4 | J.F.Gournay | Quench Data Acquisition and Slow Control for the Superconducting Magnet of the COMPASS Experiment |
| PO2.053-4 | D.Dale | Custom Electronic Modules for the TRIUMF/ISAC Control System |
| PO2.054-4 | Y.Tian | An Upgrade of Magnet-field-driven Timing Systems at the AGS |
| PO2.055-4 | D.Curry | Implementation of an EPICS IOC on an Embedded Soft Core Processor Using Field Programmable Gate Arrays |
| PO2.056-4 | E.Carlier | The Beam Energy Tracking System |
| PO2.058-4 | M.Sayed | Actual FPGAs - The Way Out of Manifold Hardware Problems |
| PO2.062-4 | M.Sannino | Interfacing Credit Card-sized PCs to Board Level Electronics |
| PO2.064-4 | B.Solar | Beam Position Monitor Digital Signal Conditioning |
| PO2.065-4 | V.A.Andreev | Development of the Nuclotron LAN |
| PO2.067-4 | J.Pisano | ALMA Correlator Real-Time Data Processor |
| PO2.068-4 | S.Luengo | SPD Very Front End Electronics |
| PO2.069-4 | G.Jiang | Embedded EPICS on ITRON/SH4-based Controllers |
| PO2.070-5 | A.Toyoda | Recent Development of a Monitoring System for Beam Line Status at the J-PARC Slow-extraction Beam Line |
| PO2.071-5 | Yu.Krylov | Archiving and Monitoring of Status for KSRS |
| PO2.072-5 | S.Chevtsov | EPICS Archive Viewer |
| PO2.073-5 | N.D.Arnold | Discovering Process-Variable-to-Signal Relationships in EPICS 3.x and 4.x |
| PO2.074-5 | M.R.Kraimer | EPICS Asynchronous Driver Support |
| PO2.075-5 | M.R.Kraimer | Real Time Performance Measurements of EPICS IOCcore |
| PO2.076-5 | P.Chu | SNS Application Programming Infrastructure and Physics Applications |
| PO2.078-5 | R.Keitel | EdlBuild - Display Generation for the EPICS edm Display Manager |
| PO2.079-5 | R.Nussbaumer | BACnet Support for EPICS |
| PO2.081-5 | N. Kanaya | Graphic User Interface for Console Systems Using JAVA TMI for the 1.8GeV TSRF Synchrotron Radiation Source |
| PO2.082-5 | T.Pal | Data-Driven User Interfaces Using Oracle Portal |
| PO2.083-5 | K.H.Kim | The PXI and VMEbus Support for the Linux-based EPICS |
| PO2.085-5 | T.Karcnik | Designing a Reusable Instrument Interface |
| PO2.086-5 | C.Kuo | Electronic Logbook by Using the Hypertext Preprocessor |
| PO2.087-5 | A.Bertrand | EPICS on the WEB |
| PO2.088-5 | J.H.Kim | Upgrade of the PLS LINAC Control System |
| PO2.089-5 | M.Sekoranja | Native Java Implementation of Channel Access for EPICS |
| PO2.092-5 | J.Galambos | Database Use in Application Programming at SNS |
| PO2.093-5 | J.B.Lister | Creating an XML Driven Data Bus between Fusion Experiments |
| PO2.094-5 | S.Jackson | Use of XML Technologies for Data-driven Accelerator Controls |
| PO2.095-5 | A.Aladwan | Image Acquisition and Processing at the Swiss Light Source |
| PO2.096-5 | J.Hill | A 2nd Generation Network Distributed Application Programming Interface for EPICS |

| *Paper* | *Presenter* | *Title* |
|---|---|---|
| PO2.098-5 | P.Fatnani | A Modular Control Package for Automation of Indus-2 Low Conductivity Water LCW Plant |
| PO2.099-5 | X.Geng | ANS Ring High Power RF Control System |
| PO2.100-5 | T.Samanta | PC-PLC Based Vacuum Control System for Superconducting Cylotron at VECC |
| PO2.101-5 | P.Chevtsov | New GPIB Control Software at Jefferson Lab |
| PO2.102-5 | P.Gurd | The Application of Linux Soft IOCs for Status Summaries at the Spallation Neutron Source |
| PO2.104-5 | V.Komarov | Modernization of U-70 General Timing System |
| PO2.106-5 | A.Augustinus | Very High Voltage Control for ALICE TPC |

## Friday 14th October

***FR1, Software Technology Evolution – 5***

| | | |
|---|---|---|
| FR1.1-5I | C.Vanoirbeek * | Why is XML not only one more data exchange format? |
| FR1.2-5O | J-L.Nougaret | Equipment Software Modelling for Accelerator Controls |
| FR1.3-5I | F.J.Busto | Knowledge Enabled Services KES for Decision Support in Control Rooms. CESADS KES Case Study at ESA/ESOC. |
| FR1.4-5O | C.Gaspar | Tools for the Automation of Large Control Systems |
| FR1.5-5O | J.Gutleber | HyperDAQ- Where Data Acquisition Meets the Web |

***FR2, Development Approaches – 3***

| | | |
|---|---|---|
| FR2.1-6O | F.Poncet | Tango Application Toolkit |
| FR2.2-60 | F.Carbognani | Software Engineering for the Virgo Project at EGO |
| FR2.3-6O | G.Thomas | LHC GCS A Model-Driven Approach for Automatic PLC and SCADA Code Generation |
| FR2.4-6O | S.Luders | Control Systems Under Attack |
| FR2.5-6O | G.Kruk * | Development Process of Accelerator Controls Software |
| FR2.6-6O | M.Clausen * | EPICS Office |

***Conference Closing Session***

| | |
|---|---|
| D. Bulfone | Introduction |
| F. Abadie | Invited talk from Airbus Industries |
| D. Bulfone | ICALEPCS Awards |
| D. Gurd | Presentation of ICALEPCS 2007 |
| B. Frammery | Farewell from the Local Organisers |

## Social Programme

| |
|---|
| Sunday 9th October - Welcome Reception |
| Monday 10th October - Wine tasting (Wine from the Cantons of Geneva and Vaud ) |
| Tuesday 11th October - Organ and Brass Concert in the Saint Pierre Cathedral |
| Wednesday 12th October - Gala Dinner and lake cruise |
| Friday 14th October - 10th Anniversary cake |
| Saturday 15th October - Technical visits for the delegates to CERN and CRPP-EPFL |

## Industrial Programme

An industrial programme ran concurrently giving companies involved in our field the opportunity to exhibit their latest developments and to present their views on the evolution of their technology as well as their strategy.

An industrial exhibition allowed companies to present their latest products to the conference delegates. The exhibition was held on three days, Tuesday to Thursday and attracted 21 exhibitors.

| | EXHIBITOR |
|---|---|
| 1 | Agilent (sponsor) |
| 2 | Dell (partner) |
| 3 | Siemens (sponsor) |
| 4 | INCAA Computers BV |
| 9 | Erich Keller AG |
| 10 | Hewlett Packard |
| 11 | D-TACQ Solutions Ltd |
| 12 | National Instruments (Switzerland) |
| 13 | Acqiris |

| | EXHIBITOR |
|---|---|
| 14 | SIDEA |
| 15 | CAEN - Costruzioni Apparecchiature Elettroniche Nucleari spa |
| 16 | Cosylab |
| 17 | Instrumentation Technologies |
| 18 | Hytec Electronics Ltd |
| 19 | ETM |
| 20 | GE Fanuc Embedded Systems |
| 21 | CES - Creative Electronic Systems |

This industrial exhibition was complemented by a series of seminars and presentations which together allowed an additional exchange of information on existing products, future developments and the needs of researchers.

| Company | Presentation |
|---|---|
| Agilent | LXI: A Technology Leap for Test Instrumentation, by Stefan Kopp |
| National Instruments | PAC - Programmable Automation Controllers, by Joel Clerc |
| Siemens | PROFINET - The standard for real-time on Industrial Ethernet, by Manfred Fürsattel |
| ETM | "Go for the Max" – realising huge projects with PVSS, by Martin Koller |
| Hytec | 1. A 1U high, low-cost, flexible Input/Output Controller for remote data acquisition and control functions.<br>2. An overview of Hytec's VME, VME64x and Industry Pack functions providing flexible, high-performance control and data acquisition system solutions, by Graham Cross and Peter Marshall |
| Instrumentation Technologies | Open model for developing, operating and maintaining contemporary re-configurable instruments, by Rok Ursic |
| D-TACQ | Use intelligent simultaneous digitisers to solve demanding data acquisition problems, by Peter Milne |
| CAEN | Use of the CAEN V2718 VME Bridge as a multi-crate controller, by Stefano Petrucci |
| GE Fanuc Embedded Systems | Use of reflective memory in the CERN accelerator timing system, by Philippe Constanty and Julian Lewis |
| Acqiris | New High speed digitizers, new chipset, and Acqiris MAQBox, by Raymond Chevalley |

## ICALEPCS 2005 Participants

| | | |
|---|---|---|
| ***Australia*** | | |
| BANKS | Steven | Australian Synchrotron Project |
| LAM | Tony | Australian Nuclear Science and Technology Organisation |
| STARRITT | Andrew | Australian Synchrotron Project |
| ***Belgium*** | | |
| BOSSIER | Vincent | IBA S.A. |
| DEMARET | Denis | IBA S.A. |
| ***Canada*** | | |
| DALE | Don | TRIUMF |
| FUGATE | David | University of Calgary |
| KEITEL | Rolf | TRIUMF |
| KLASSEN | Erwin | TRIUMF |
| LEE | Ka Sing | TRIUMF |
| MATIAS | Elder | Canadian Light Source |
| MCKIBBEN | Mike | CLSI |
| MOUAT | Michael | TRIUMF |
| NUSSBAUMER | Rod | TRIUMF |
| PAYNE | Chris | TRIUMF - ISAC |
| WILSON | Tony | Canadian Light Source |
| ***Chile*** | | |
| KIEKEBUSCH | Mario | ESO |
| URRUTIA | Cristian | AURA-Gemini Observatory |
| WEHNER | Stefan | ESO Paranal |
| ***Denmark*** | | |
| MADSEN | Stig | Danfysik |
| WORM | Torben | ISA |
| ***France*** | | |
| ABADIE | Frédéric | Airbus Industries |
| BETINELLI | Pascale | Soleil |
| BRETON | Dominique | LAL IN2P3 |
| BUTEAU | Alain | Soleil |
| CHAIZE | Jean-Michel | ESRF |
| CHARLET | Daniel | LAL IN2P3 |
| CORRUBLE | Dominique | Soleil |
| GAGEY | Brigitte | Soleil |
| GILLETTE | Pascal | GANIL |
| GOTZ | Andrew | ESRF |
| GOUGNAUD | Françoise | CEA-SACLAY-DAPNIA |

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|---|---|---|
| GOURNAY | Jean-François | CEA Saclay |
| LECLERCQ | Nicolas | Soleil |
| LÉCORCHÉ | Eric | Ganil |
| LEMAÎTRE | Evelyne | GANIL |
| LERMINE | Patrick | GANIL |
| MEYER | Jens | ESRF |
| MOREAU | Philippe | CEA Cadarache |
| NOUGARET | Jean-Luc | CERN |
| PONCET | Faranguiss | ESRF |
| RATCLIFFE | Olivier | CERN |
| RICAUD | Jean-Paul | Soleil |
| TAUREL | Emmanuel | ESRF |
| ULRICH | Michèle | GANIL |
| VIDEAU | Ioana | LAL Orsay |
| ***Germany*** | | |
| BACHER | Reinhard | DESY |
| BAER | Ralph | GSI Darmstadt |
| BALZER | Andreas | BESSY |
| BECK | Dietrich | GSI-Darmstadt |
| BIANCAT-MARCHET | Fabio | ESO ALMA |
| BIRKE | Thomas | BESSY |
| BORCHERT | Mathias | BESSY GmbH |
| BRAND | Holger | GSI |
| BUSSE | Winfried | |
| CAPRONI | Alessandro | European Southern Observatory |
| CHIOZZI | Gianluca | European Southern Observatory |
| CLAUSEN | Matthias | DESY |
| DUVAL | Philip | DESY |
| FRANKENFELD | Uli | GSI Darmstadt |
| HECHLER | Ludwig | GSI |
| HENSS | Tobias | University of Wuppertal |
| HOEPPNER | Klaus | GSI |
| JERAM | Bogdan | European Southern Observatory (ESO) |
| KERSCHER | Harald | Siemens MED AG |
| KLEINES | Harald | Forschungszentrum Jülich |
| KOLB | Burkhard | GSI |
| KRAUSE | Udo | GSI |
| MERCADO | Jorge | Physikalisches Institut - Heidelberg |
| MÜLLER | Roland | BESSY |
| NEU | Gregor | IPP Garching |
| RAFFI | Gianni | European Southern Observatory |

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|---|---|---|
| RAUPP | Gerhard | IPP Garching |
| REHLICH | Kay | DESY |
| REKOW | Jens | ENZ Ingenieurbüro |
| RISTAU | Uwe | EMBL - Hamburg |
| SAYED | Michael | GSI Darmstadt |
| SCHAA | Volker RW | Controls Group GSI |
| SCHILLING | Marcus | ESO |
| SCHÜTT | Petra | GSI |
| STOCKMEIER | Marc R. | GSI Darmstadt |
| WERNER | Matthias | DESY |
| ***Greece*** | | |
| TSIROU | Andromachi | CERN |
| ***India*** | | |
| AGRAWAL | Rajesh Kumar | CAT, Indore |
| BHATTACHARJEE | Tanushyam | VECC |
| FATNANI | Pravin | CAT, Indore |
| GUPTA | Anik | UNIVERSITY OF JAMMU |
| ***Israel*** | | |
| SHLEZINGER | Galia | Rafael |
| ***Italy*** | | |
| ANTUNES NOBREGA | Rafael | INFN - Roma |
| ARIOLA | Marco | Assoc. EURATOM-ENEA-CREATE |
| BASSATO | Giorgio | INFN - Legnaro |
| BATTISTELLA | Andrea | INFN Legnaro |
| BULFONE | Daniele | Sincrotrone Trieste - ELETTRA |
| CANELLA | Stefania | INFN - LNL |
| CARBOGNANI | Franco | EGO |
| CATANI | Luciano | INFN-Roma2 |
| CIRAMI | Roberto | INAF-AOT |
| CURRI | Alessio | Sincrotrone Trieste - ELETTRA |
| DEL CANO | Laura | Sincrotrone Trieste - ELETTRA |
| DI MARCANTONIO | Paolo | INAF-OAT |
| GIACCHINI | Mauro | INFN Legnaro |
| LA PENNA | Paolo | Virgo |
| LONZA | Marco | Sincrotrone Trieste - ELETTRA |
| LOPEZ | Bernhard | European Gravitational Observatory |
| MANTOVANI | Maddalena | INFN Pisa |
| MARIOTTI | Enrico | Sincrotrone Trieste - ELETTRA |
| NERI | Carlo | ENEA Frascati |
| PINAZZA | Ombretta | INFN Bologna |
| PIVETTA | Lorenzo | Sincrotrone Trieste - ELETTRA |

| | | |
|---|---|---|
| PUGLIESE | Roberto | Sincrotrone Trieste - ELETTRA |
| RIVA | Marco | ENEA FRASCATI |
| SANNINO | Mario | INFN Sez. di Genova |
| SCAFURI | Claudio | Sincrotrone Trieste - ELETTRA |
| TAURO | Arturo | INFN Bari |
| ***Japan*** | | |
| FUKUI | Toru | SPring-8 |
| FURUKAWA | Kazuro | KEK |
| ISHII | Miiho | SPring-8 |
| KAMIKUBOTA | Norihiko | KEK |
| KANAYA | Noriichi | Univ. of Ibaraki |
| KATOH | Tadahiko | KEK |
| KOBAYASHI | Kazuo | SPring-8 |
| MASUDA | Takemasa | SPring-8 |
| MIYAMOTO | Koji | NDS |
| NAKAMURA | Tatsuro | KEK |
| ODAGIRI | Jun-ichi | KEK |
| OHATA | Toru | SPring-8 |
| SATO | Yoshinori | KEK |
| SATOH | Masanori | KEK |
| SUZUKI | Yoshihiro | KEK |
| TAKAGI | MAKOTO | Kanto Information Service(KIS) |
| TAKEBE | Hideki | SPring-8 (JASRI) |
| TANAKA | Ryotaro | SPring-8 |
| TOYODA | Akihisa | KEK |
| YAMASHITA | Akihiro | SPring-8 |
| ***Korea*** | | |
| HA | Kiman | Pohang Accelerator Laboratory |
| KIM | Kukhee | KBSI |
| KIM | JiHwa | POSTECH |
| KO | In Soo | POSTECH |
| PARK | Mi Kyung | KBSI |
| ***Mexico*** | | |
| LEON | Idelfonso | University of Sonoro |
| IVAN MARTINEZ | Mario | UNAM |
| ***Netherlands*** | | |
| LAWERMAN | Edzer | ASTRON |
| ***P R China*** | | |
| LI | Weihua | CAEP |
| TIAN | Qing | Institute of Fluid Physics |
| WANG | Chunhong | IHEP |

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|---|---|---|
| YANG | Xinglin | Institute of Fluid Physics, CAEP |
| ZHAO | Jujiu | IHEP |
| ***Portugal*** | | |
| VARELA | Joao | LIP |
| ***Russia*** | | |
| ALEYNIKOV | Vitaly | JINR |
| ALFEROV | Vladimir | IHEP Protvino |
| ANDREEV | Vasiliy | JINR |
| BASHMAKOV | Yuriy | P.N.Lebedev Physical Institute RAS |
| BOLKHOVITYANOV | Dmitry | The Budker Institute of Nuclear Physics |
| KARNAEV | Sergey | BINP |
| KOMAROV | Vladimir | IHEP |
| KRYLOV | Yury | Kurchatov Institute |
| POSE | Rudolf | Joint Institute for Nuclear Research Dubna |
| VAGUINE | Alexey | MRTI RAS |
| VOEVODIN | Valery | IHEP Protvino |
| ZAITSEV | Vladimir | TRINITI |
| ***Slovenia*** | | |
| BOBNAR | Jaka | Jozef Stefan Institute |
| KARCNIK | Tomaz | Instrumentation Technologies |
| PLESKO | Mark | Jozef Stefan Institute |
| SOLAR | Borut | Instrumentation Technologies |
| SPROGAR | Mihael | Instrumentation Technologies |
| VODOVNIK | Anze | Jozef Stefan Institute |
| ***Spain*** | | |
| BARRIUSO-POY | Alex | CERN |
| BELTRAN | David | ALBA |
| BUSTO | Javier | GTD, Sistemas de Información |
| FERNANDEZ-CARREIRAS | David | ALBA |
| GOMEZ-REINO GARRIDO | Robert Walter | CERN |
| LUENGO | Sonia | La Salle |
| MARTINEZ BELINCHON | Carlos | UPM |
| ***Sweden*** | | |
| GAJEWSKI | Konrad | TSL |
| ***Switzerland*** | | |
| ABADIE | Lana | CERN |
| AL ADWAN | Ahed | Paul Scherrer Institute |
| ALBERT | Markus | CERN |
| ANICIC | Damir | Paul Scherrer Institute |
| ANTOINE | Alain | CERN |
| ARRUAT | Michel | CERN |

| | | |
|---|---|---|
| AUER | Joachim | Skyguide |
| AUGUSTINUS | Andre | CERN |
| AZAROV | Konstantin | CERN |
| BAGGIOLINI | Vito | CERN |
| BARBERO SOTO | Esther | CERN |
| BARILLERE | Renaud | CERN |
| BAU | Jean-Claude | CERN |
| BEHARRELL | Mark | CERN |
| BERNARD | Frederic | CERN |
| BERTRAND | Alain | Paul Scherrer Institute |
| BILLEN | Ronny | CERN |
| BLAISING | Jean-Jacques | CERN |
| BLANCO VINUELA | Enrique | CERN |
| BLAND | Alastair | CERN |
| BOCCIOLI | Marco | CERN |
| BRAATHEN | Andreas | CERN |
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