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AComIn:
Advanced Computing for Innovation

FP7 Capacity Programme
Research Potential of Convergence Regions

EVENT ORGANISATION REPORT

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Summary: Report about the organization of the 10th International Conference **"Large-Scale Scientific Computations" LSSC'15,** 8-12 June 2015, Sozopol, Bulgaria

Status: Final report

Distribution: Public

Issue Date: June 2015

Start date of the project: 01/10/2012 **Duration: 42 months**

Report about an AComIn Organised/Supported Event

Name and type of the event:

10th International Conference

LSSC'15, "Large-Scale Scientific Computations"

Biannual event organised in Bulgaria since 1997

http://parallel.bas.bg/Conferences/SciCom15/

Place, dates:

Sozopol

8-12 June 2015, LSSC

Programming and Organisation committees:

The Scientific Committee of the event consists of 25 members representing leading universities and research institutes from Austria, Bulgaria, Denmark, Germany, Poland, Saudi Arabia, Spain and USA.

The Local Organizing Committee consists of the following members all from IICT:

Gergana Bencheva

Stanislav Harizanov

Ivan Georgiev

Krassimir Georgiev

Silvia Grozdanova - Conference Secretary

Nedyu Karaivanov

Nikola Kosturski

Ivan Lirkov

Maria Lymbery

Svetozar Margenov – Chairman

Stanislav Stoykov

Yavor Vutov

Participants /number, types/:

From IICT: 23, 21 of them researchers

Bulgarian participants outside IICT: 15 researchers

Foreign participants: 82, including 5 Plenary Invited Speakers

Invited participants: 10, 6 of them supported by *AComIn*

Short description:

A wide range of recent achievements in the field of scalable numerical methods, algorithms and their applications will be addressed during the conference. The meeting provides a forum for exchange of ideas between scientists, who develop and study numerical methods and algorithms, and researchers, who apply them for solving real life problems.

The major scientific topics include: Hierarchical, adaptive, domain decomposition and local refinement methods; Robust preconditioning algorithms; Monte Carlo methods and algorithms; Numerical linear algebra; Control systems; Large-scale computations of environmental biomedical and engineering problems; High-performance algorithms for engineering problems; Parallel algorithms and performance analysis.

Scientific Programme:

The Scientific Programme of the conference is available at:

http://parallel.bas.bg/Conferences/SciCom15/

Scientific Programme of the *AComIn*-related activities:

The Scientific Programme of the event includes 5 Plenary Invited talks, 10 Special Sessions and Sessions of Contributed Talks. 7 of the Special Sessions are directly related to the *AComIn* project activities.

The Plenary Invited lecturers gave the following talks:

- **Thierry Coupez**, Implicit Boundary in Multiphase Flows and Anisotropic Adaptive Meshing
- **David Keyes**, Algorithmic Adaptations to Extreme Scale
- **Johannes Kraus**, Combined Strategies in Algebraic Multilevel Preconditioning
- **Siegfried Selberherr**, Spin-Based CMOS-Compatible Devices
- **Ludmil Zikatanov**, Subspace Correction Methods: Theory, Practice, and Robustness

AComIn-related papers presented at the event and published after peer review:

There are 14 papers coathored by researchers from IICT, which are accepted for poblication in the LSSC'15 proceedings to appear as a special volume of Springer LNCS. Among them, the following ***5 are supported by AComIn***, including related thanks the the project:

- Ivan Georgiev, Stanislav Harizanov, Yavor Vutov, Supervised 2-phase segmentation of porous media with known porosity

- Petia Koprinkova-Hristova, Kiril Alexiev, ACD with ESN for Tuning of MEMS Kalman Filter
- N. Kosturski, S. Margenov, P. Popov, N. Simeonov, Y. Vutov, Performance Analysis of Block AMG Preconditioning of Poroelasticity Equations
- Nikola Kosturski, Ivan Lirkov, Svetozar Margenov, Yavor Vutov Thermoelectrical Tick Removal Process Modeling
- Stanislav Stoykov, S. Margenov, Scalability of Shooting Method for Nonlinear Dynamical Systems

Assessment of the added-value of the event to the *AComIn* scientific, networking and dissemination objectives:

The support, provided by *AComIn* to LSSC'15, enabled:

- To cover the local expenses of several worldwide known scientists giving top level plenary and key note invited talks.
- To support a part (11 from 23) of participants from IICT.

The *AComIn* support is acknowledged in the LSSC'15 Proceedings of Abstracts as well as at the conference website.

Changes in the financial planning of the AComIn support spending (if any):

There were no changes in the budget plan, Approved by the *AComIn* Executive Board.

Reason for the changes during the actual event implementation: N/A

Event organiser:

17 June 2015

Svetozar Margenov