

FP6 INCO contract No. 026343

CX-CMCS

Centre of Excellence for Computational Modelling of Complex Systems



Deliverable D01

CX-CMCS Web Site

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Abstract: Deliverable D01 – “CX-CMCS Web Site” is public and includes information regarding the CX-CMCS web site and its intranet document repository. The information in the web site is available to the public and will be used to raise awareness for the project. The intranet contains information that is confidential and will be only available to the project participants and the EC.

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Document Revision History

Date	Issue	Editor	Summary of main changes
September 20, 2006	-	Aleksandar Bogojevic, Antun Balaz	

Preface

The basic strategic objective of the CX-CMCS proposal is to transform the Scientific Computing Laboratory (SCL) into a centre of excellence, i.e. to decisively increase the quality of research conducted at SCL, and make it a preferred WB research partner for EU institutions working in the fields of simulation of complex systems and of GRID technology.

SCL is a unit of the Institute of Physics in Belgrade. The Institute contributes more than 10% of the total scientific output of Serbia and constantly ranks among the best R&D institutions in the region. SCL has 14 staff members, and participates in several international and national projects, including FP6 project SEE-GRID and Cost action P10. SCL defines the current state of the art in high performance computing in WBC with its PARADOX cluster (64+2 processors with aggregate speed $R_{max}=0.21$ Tflops).

The proposed CX-CMCS SSA aims to reinforce research capacity at SCL by: hiring young researchers, providing of training and mobility for the research staff, and upgrading the computing infrastructure. The success of this endeavour will be measured through a benchmarking exercise to be performed in the project's last year. Our networking partners (4 from EU and 3 from Serbia) have been carefully selected to provide the skills and expertise necessary to reinforce the research potential of SCL through training and joint research. The proposed equipment upgrade (storage element, high throughput switch, and upgrade of RAM) will make it possible to tackle even the most complex GRID applications allowing SCL to become a key regional player in deployment and use of emerging GRID technology. CX-CMCS plans to set up an International Advisory Board whose expertise will help SCL develop a long term strategy and facilitate integration into ERA.

CX-CMCS aims to be a living example that it is possible to bridge the "digital divide" between countries and regions having high tech ICT technologies and those that do not.

Strategic objectives

The basic strategic objective of the CX-CMCS proposal is to transform SCL into a centre of excellence, i.e. to decisively increase the quality of research conducted at SCL, and make it a preferred WB research partner for EU institutions working in the fields of simulation of complex systems and of GRID technology.

Centres of excellence do not exist in a vacuum, however. In order for SCL to achieve and maintain a status of excellence, the proposed SSA aims to positively effect the research environment in Serbia at several levels: SCL's immediate R&D environment (the national partners in this proposal), the high performance computing segment, and the national R&D system as a whole.

Specific objectives

The specific objectives for the current SSA proposal have been formulated through an analysis of the following key points:

- Wider developmental objectives of Serbia and Montenegro and the West Balkan region pertaining to research and development (as presented in the Action Plan adopted at the Ministerial conference in Thessaloniki in June 2003);
- Existing strengths and weaknesses at SCL in the high performance computing sector in Serbia including: professional resources, material resources, financial and organizational resources, principle impediments;
- Assessment of availability of graduate students and young researchers that could be newly employed at SCL.
- Assessment of indirect social impacts of the process of strengthening of SCL and its efficient integration into a wider European R&D effort.

The outlined analysis has resulted in the following specific objectives, each of which directly leads to a set of measurable and directly verifiable sub-objectives.

Objective 1 – Enhance quality of R&D at SCL

- **Sub-objective 1.1:** Set up an International Advisory Board for the new centre of excellence;
- **Sub-objective 1.2:** Establish a framework for more efficient management of research at SCL by developing a flexible, problem oriented R&D plan that will successfully integrate that research into a wider European effort.
- **Sub-objective 1.3:** Develop a specific set of benchmarks for tracking the quality of R&D at SCL, and perform a benchmarking exercise.
- **Sub-objective 1.4:** Devise and implement a long term strategy for achieving and maintaining research excellence.
- **Sub-objective 1.5:** Insure viability of SCL as a centre of excellence beyond the project lifetime by finding other sources of funding.

Objective 2 – Expand and mobilize human resources

- **Sub-objective 2.1:** Recruit and employ young researchers; develop explicit career plans for the newly employed researchers.
- **Sub-objective 2.2:** Enhance working conditions for young researchers by setting up an R&D environment at SCL that is integrated into ERA, providing challenging research problems, state of the art equipment, and enhanced mobility.

Objective 3 – Reinforce existing S&T capacities at SCL

- **Sub-objective 3.1:** Maintain and upgrade existing S&T equipment and high-tech infrastructure.
- **Sub-objective 3.2:** Improve the availability and reliability of SCL's computing resources, determine and implement optimal strategies for their use.

Objective 4 – Enhance mobility and integration into ERA

- **Sub-objective 4.1:** Network with EU, regional and national partner institutions through exchange of personnel, research results and joint numerical experiments; participate in joint RTD activities within these networks.
- **Sub-objective 4.2:** Host scientists from EU for training and research.
- **Sub-objective 4.3:** Organize training of graduate students and young researchers through short-term missions at EU institutions.

Objective 5 – Contribute to the reinforcing of ICT capacities at the national level

- **Sub-objective 5.1:** Reinforce the quality of research in SCL's immediate R&D environment, by strengthening their human capacity through stipends, yearly visits, and by conducting joint research activities.
- **Sub-objective 5.2:** Reinforce human capacity in Serbia's high performance computing sector by training young researchers to be employed at national research institutions and hi-tech companies.
- **Sub-objective 5.3:** Contribute to the national R&D system by developing a set of recommendations for policy makers at national and local levels for fostering growth of research excellence in a rapidly changing high-tech environment.

The three year CX-CMCS project kicked-off on July 1, 2006. The project plans to issue the following deliverables:

Deliverable No	Deliverable title	Delivery date	Nature	Dissemination level
D01	CX-CMCS Web site	M1	R	PU
D02	Career development plan for newly employed young researchers	M2	R	CO
D03	CX-CMCS International Advisory Board	M3	O	PU
D04	Equipment tendering and procurement report	M3	R	PU
D05	Inauguration meeting report	M4	R	PU
D06	Mobility and training plan	M6	R	PU
D07	CX-CMCS Brochure	M6	R	PU
D08	12M Progress reports	M12, M24	R	PU
D09	CX-CMCS Promotional video material	M15	O	PU
D10	Benchmark procedures for quality assessment of RTD centres of excellence	M18	R	PU
D11	SCL research quality assessment	M24	R	PU
D12	Proceedings of International dissemination workshop	M30	R	PU
D13	Strategy of long term sustainable growth of research excellence in transition	M30	R	PU
D14	Scientific computing landscape of Serbia	M33	R	PU
D15	Presentation of policy papers to decision makers	M34	R	PU
D16	Final project report	M36	R	PU

Legend: R = Report, O = Other, PU = Public, CO = Confidential (only for members of the consortium incl. EC).

Table of contents

1.	Introduction	9
2.	CX-CMCS Web Public Section	10
3.	CX-CMCS Internal Document Repository (Intranet).....	11

Table of figures

<i>Figure 1 – The central webpage of CX-CMCS</i>	9
<i>Figure 2 – The Participants section in the public CX-CMCS site</i>	10
<i>Figure 3 – The Events section in the public CX-CMCS site</i>	11
<i>Figure 4 -- Access to CX-CMCS Intranet</i>	11

References

- [1] Project CX-CMCS – 026343 – Annex I – Description of Work

Executive summary

What is the focus of this Deliverable?

The focus of this deliverable is to report on the establishment of the CX-CMCS web and document repository server and describe the features offered by these services.

What is next in the process to deliver the CX-CMCS results?

The deliverable and workflow progress is described in the project Annex-I – Description of Work [1]

What are the deliverable contents?

Brief presentation of the structure and contents of the CX-CMCS web site and document repository.

Conclusions

The project web site and intranet document repository constitute the foundation of the communication infrastructure of the CX-CMCS project.

1. Introduction

The CX-CMCS web/repository site has a public section that is accessible by anyone with a web browser and a secure site (intranet) that is accessed with a user name/password. Both services are accessed from <http://cx-cmcs.phy.bg.ac.yu>, the official web-site of the project. The following is a screenshot of <http://cx-cmcs.phy.bg.ac.yu>:

CX-CMCS: Centre of Excellence for Computational Modeling of Complex Systems
Scientific Computing Laboratory, Institute of Physics, Belgrade

CX-CMCS Home
Planned Impacts
Participants
Project
Results
Events
Brochures
Intranet

Project Vision

The basic strategic objective of the CX-CMCS project is to transform the [Scientific Computing Laboratory](#) into a centre of excellence, i.e. to decisively increase the quality of research conducted at SCL, and make it a preferred West Balkan research partner for EU institutions working in the fields of simulation of complex systems and of GRID technology.

SCL is a unit of the Institute of Physics in Belgrade. The Institute contributes more than 10% of the total scientific output of Serbia and constantly ranks among the best R&D institutions in the region. SCL currently has 17 staff members, and participates in several international and national projects, including FP6 projects CX-CMCS, SEE-GRID, SEE-GRID-2, EGEE-II, and Cost action P10 (Physics of Risk). SCL defines the current state of the art in high performance computing in the West Balkan region with its PARADOX cluster.

CX-CMCS aims to reinforce the research capacity of the SCL by: hiring young researchers; providing training and mobility for the research staff; upgrading the computing infrastructure. The success of this endeavour will be measured through a benchmarking exercise to be performed in the project's last year. Our networking partners (4 from EU and 3 from Serbia) have been carefully selected to provide the skills and expertise necessary to reinforce the research potential of SCL through training and joint research. The proposed equipment upgrade will make it possible to tackle even the most complex GRID applications allowing SCL to become a key regional player in deployment and use of this emerging technology. The CX-CMCS International Advisory Board will help SCL develop a long term strategy and facilitate its integration into ERA.

CX-CMCS aims to be a living example that it is possible to bridge the "digital divide" between countries and regions having high tech ICT technologies and those that do not.

News

July 19, 2006
[Serbian Ministers Popovic and Dinkic visit SCL](#)

July 14, 2006
[EU Commissioner Janez Potocnik visits SCL](#)

July 01, 2006
[EU Center of Excellence project starts at SCL](#)

SCIENTIFIC COMPUTING LABORATORY

Sixth Framework Programme

CX-CMCS is a project funded by the European Commission - contract No. 026343 (INCO)

Figure 1 – The central webpage of CX-CMCS

2. CX-CMCS Web Public Section

Via the public section all the links under the Menu and Quick Links can be accessed. This section is also used to disseminate the public project results. The available options are as follows:

- *CX_CMCS Home*: the project home page, including the statement of the basic project vision.
- *Planned Impacts*: this section gives the scope and the core objectives of the project.
- *Participants*: this section gives a brief description and relevant links for project contractor SCL (Scientific Computing Laboratory, Institute of Physics, Belgrade) as well as all EU and National networking partners.
- *The Project*: this section contains the project Work Breakdown Structure, List of Deliverables, and Project Work Plan (Gantt chart).
- *Results*: links to documents constituting project deliverables. This is currently vacant (“under construction”) till the first concrete project results are available.
- *Events*: this section lists the events organized by CX-CMCS or where CX-CMCS has been presented including links to presentations made.
- *News*: gives a time-ordered list of brief information about all project-related activities, results and events, and gives links to more detailed material.
- *Brochures*: Includes the project brochures.

The above structure is presented in the following two indicative snapshots of *Participants* and *Events* menus:

CX-CMCS: Centre of Excellence for Computational Modeling of Complex Systems
Scientific Computing Laboratory, Institute of Physics, Belgrade

Participants

The proposed SSA has a single participant – the [Scientific Computing Laboratory](#) of the Institute of Physics in Belgrade.

The Scientific Computing Laboratory (SCL) is a unit of the [Institute of Physics](#) in Belgrade. The Institute was founded in 1961 with a mission to conduct high quality research in the area of physics. The Institute of Physics (IP) has amply fulfilled its mission, and at present contributes more than 10% of the total scientific output of Serbia. With its 170 employees (out of which 70 researchers with PhD degree, 40 researchers with MSc degree, 30 technicians, and 30 administration and support staff), it has constantly ranked among the leading R&D institutions in the region.

In IP it was recognized quite early that usage of modern computer recourses can benefit the research, and that scientific computing has become a tool as vital as experimentation and theory in solving the scientific challenges of tomorrow. A special care was devoted to maintain the IP's leading position in Serbia in deployment of high performance computing facilities, a process that lead to the founding of SCL.

Apart from SCL several other research organizations will participate in the proposed activities as EU and national networking partners.

EU networking partners:

GRNET – Greece has as its mission to provide high-quality international and national networking services to the Greek Academic & Research institutions and to support Research and Educational activities of the public and private sector. It undertakes initiatives for the coordination of regional programmes, such as the integration of the National Research Networks of South-Eastern Europe - SEEREN and of 3rd Mediterranean countries – EUMEDCONNECT within GEANT. It is coordinator in several other FP6 projects, such as SEE-GRID, SEE-GRID-2, 6DISS, and SEE-FIRE, and of the regional initiative SEE-FIBER. GRNET played a leading role in the establishment of the Hellas Grid Task Force.

Democritos – Italy is the National Simulation Center of INFN, hosted by SISSA in Trieste. It is a leading Italian research institution, developing various numerical simulations and GRID enabled software, as well as some core middleware parts. Democritos is implementing a distributed virtual laboratory strongly supported by CINECA, the leading Italian super-computing center in Bologna.

University of Oslo – Norway's largest and oldest institution of higher education. It was founded in 1811. Today the University of Oslo has approx. 30,000 students and 4,600 employees. Its researchers are involved in several FP6 projects. Four Nobel Prize winners among the staff also indicate the quality of the research at the University.

Jozef Stefan Institute – Slovenia (JSI) is the leading R&D institution in Slovenia and has maintains high quality professional research at the frontier of knowledge, participating in several dozen running EU Framework Projects. The institute was one of the first to introduce large computing facilities in former Yuoslavia through pooling of resources and the formation of a national

News

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July 14, 2006
[EU Commissioner Janez Potočnik visits SCL](#)

July 01, 2006
[EU Center of Excellence project starts at SCL](#)

Figure 2 – The Participants section in the public CX-CMCS site

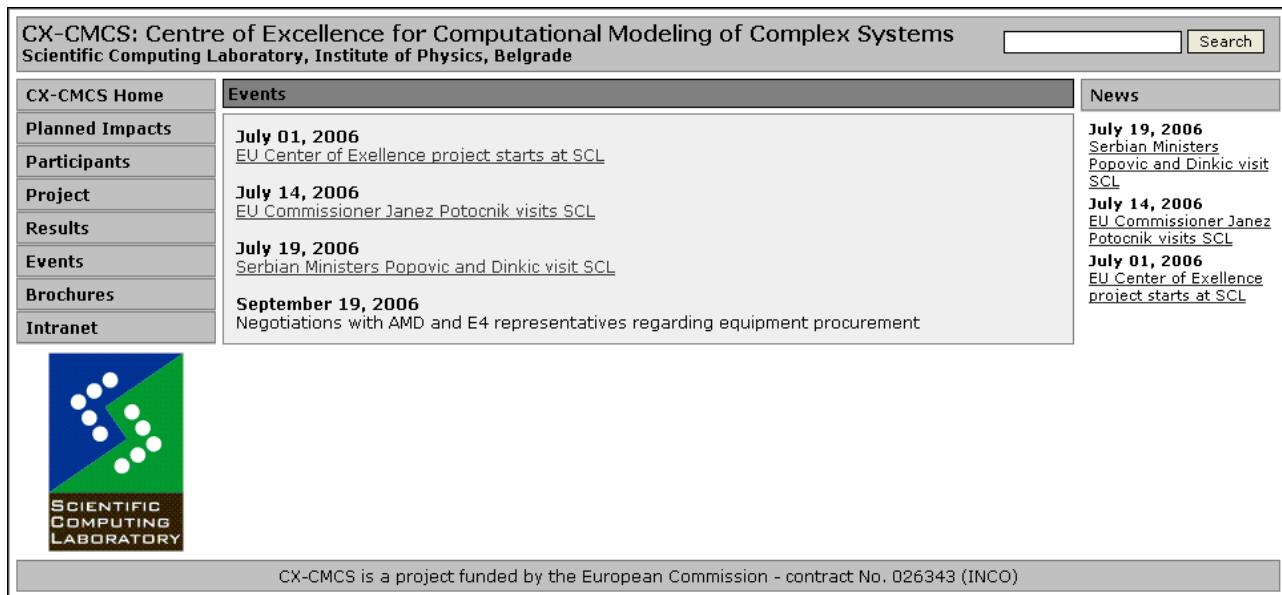


Figure 3 – The Events section in the public CX-CMCS site

3. CX-CMCS Internal Document Repository (Intranet)

The secure section is used to exchange documents among the contractor and its networking partners and plays the role of the CX-CMCS documents repository. The intranet has been set up, however, the repository is currently empty.

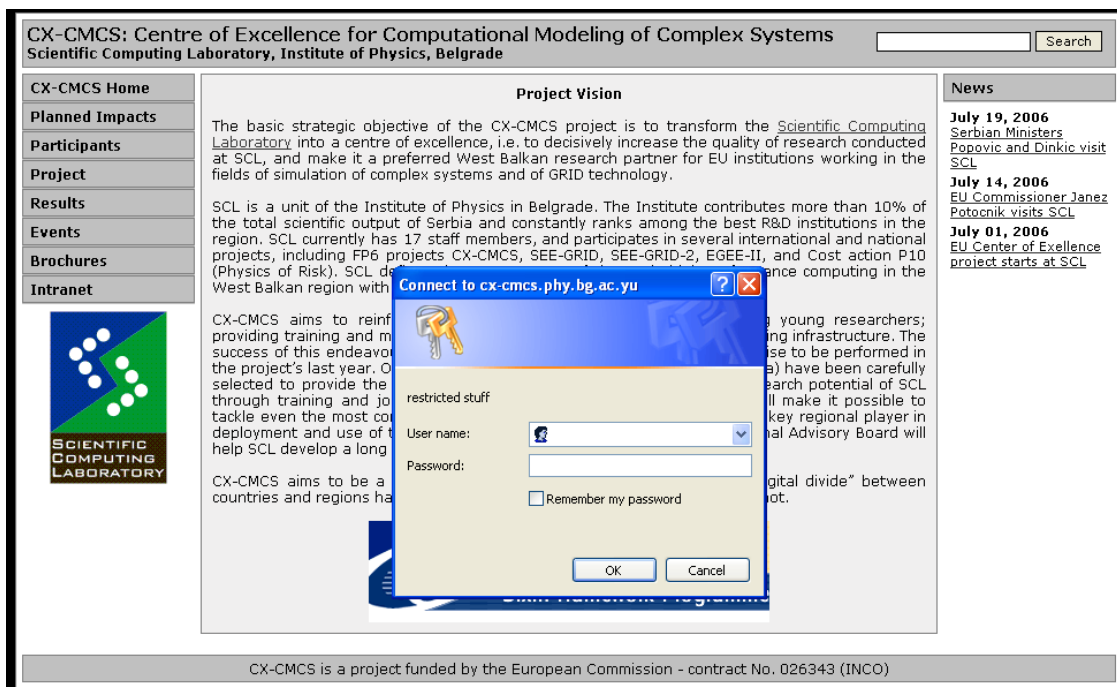


Figure 4 – Access to CX-CMCS intranet