



034115

## PHOSPHORUS

Lambda User Controlled Infrastructure for European Research

Integrated Project

Strategic objective:  
Research Networking Testbeds



**Deliverable reference number <D.7.3.1>**

**Co-operation agreements with EU NRENs and projects**

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PSNC

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Dissemination Level		
<b>PU</b>	Public	PU
<b>PP</b>	Restricted to other programme participants (including the Commission)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

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## Abstract

The success of the Phosphorus project is depend from wide deployment of project results in National Research and Education Networks (NRENs) community particularly in EU and collaboration with other projects. It is crucial to organise the work and formal contacts with partners to exploit the knowledge of Phosphorus.

This deliverable will report the plans and efforts to disseminate and exploit the knowledge of Phosphorus with NRENs and other projects.

This is the first release of an evolving deliverable document. Subsequent releases are planned at M12, M24 and M30.

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## Section 1 – Formal Agreements

The templates of formal cooperation agreements (CA) were prepared:

- for National Research and Education Networks
- for others projects which aim the similar areas as Phosphorus projects (i.e. optical networks, control planes, GRIDs, standardization, testbeds)

The CA with NRENs is focused on:

- Sharing the experience and technical knowledge between PHOSPHORUS and NRENs during the series of workshops foreseen within the scope of PHOSPHORUS, organised by Phosphorus project for the research community.
- Exploration of possibility for NRENs to join the PHOSPHORUS testbed and participate in the tests of new technologies and services.
- Formalization of dissemination and promotion of the Phosphorus results in research community.

The purpose of the CA with projects is to:

- Achieve synergy between both projects by collaboration in the common areas of interest
- Explore the possibility to share the experience and technical knowledge between projects during the series of workshops foreseen within the scopes of both projects and organised for partners.
- Formalize the dissemination and promotion of the projects results in research community.

Both templates have been verified and approved by General Assembly of Phosphorus consortium. They are attached to this deliverable in appendix.

The Cooperation Agreements are available on Phosphorus web pages in public section: documents.

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## Section 2 – Dissemination of knowledge

The information about possibility of cooperation with Phosphorus project was propagated to NREN Managers by appropriate mailing list of GN2 project. Currently, there is a negotiating process of the cooperation details with interested NRENs.

It was agreed with TERENA that Phosphorus project presentation will be made during **European Future Networking Initiatives Workshop**: (22 February 2007, Amsterdam) which is organised for network managers. The objective of the workshop is to exchange information and raise awareness about the many discussions and initiatives world-wide to develop a new, 'clean slate' architecture for the Internet

( <http://www.terena.org/activities/efniw/> ).

There were established contacts with GN2 and MUPBED projects.

It were organized the teleconferences between GN2 and Phosphorus relevant activities group where technical collaboration is made (i.e. between GN2 JRA3 and Phosphorus WP1/WP2 teams).

It was agreed with MUPBED consortium to organize the common workshop in May conference. The details of this workshop will be know in the next months.

It is planned to organize the workshop during OGF event in MCNC for establishing the collaboration with Enlightened Computing (US) and G-Lambda (JP) projects.

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# Appendix 1

## Templates of Cooperation Agreements with NRENs and projects

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**Cooperation Agreement**  
**between**  
**The PHOSPHORUS project and National Research and Education Network**

**Purpose**

The purpose of the present CA is to:

- Explore the possibility to share the experience and technical knowledge between PHOSPHORUS and NREN during the series of workshops foreseen within the scope of PHOSPHORUS, organised by Phosphorus project for the research community.
- Explore the possibility for NREN to join the PHOSPHORUS testbed and participate in the tests of new technologies and services.
- Formalize the dissemination and promotion of the Phosphorus results in research community.

**Background**

**PHOSPHORUS** <http://www.ist-phosphorus.eu/>

The Phosphorus project focuses on delivering advanced network services to Grid users and applications interconnected by heterogeneous network infrastructures. The project is addressing some of the key technical challenges to enable on-demand end-to-end network services across multiple domains. The PHOSPHORUS network concept and test-bed makes applications aware of their complete Grid resources (computational and networking) environment and capabilities, and enables dynamic, adaptive and optimized use of heterogeneous network infrastructures connecting various high-end resources.

The main innovation introduced by Phosphorus is a network Service and Control Planes concept where the network (lightpath) and Grid (computational, storage) resources are provisioned in a single-step: network and Grid-specific resources are controlled and set-up at the same time and with the same priority, with a set of seamlessly integrated procedures. From a user's perspective, this results in a real, node-to-node deployment of on-demand Grid services.

PHOSPHORUS will enhance and demonstrate solutions that facilitate communication among applications middleware, existing Network Resource Provisioning Systems, and the proposed Grid-GMPLS Control Plane. The main technical objectives are: 1) enhancements of the GMPLS Control Plane (G<sup>2</sup>MPLS) to provide optical network resources as first-class Grid resource, 2) implementation of interfaces between different NRPS to allow multi-domain interoperability with PHOSPHORUS' resource reservation system, 3) middleware extensions and APIs to expose network and Grid resources and make reservations of those resources.

To disseminate ideas and developments the Phosphorus consortium will strongly interact with other relevant programmes, research activities and initiatives at the European and international level. Various network-oriented R&D projects are encouraged to share results and exchange ideas with Phosphorus project.

**NREN** <http://www...../>

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**Timeframe**

The collaboration is foreseen to be performed until the end of the Phosphorus project.

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### **Main Participants**

The work will be carried out by PHOSPHORUS partners in co-operation with the NREN community

### **Financial Conditions**

No transfer of funds between the PHOSPHORUS project and NREN is anticipated. However, partners may decide to transfer some of their existing resources into one or more of the co-operation activities mentioned above.

Signed:

.....  
(on behalf of the NREN)

Artur Binczewski  
(on behalf of the PHOSPHORUS Consortium)

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# Cooperation Agreement

## between

### The PHOSPHORUS project and Project

#### Purpose

The purpose of the present CA is to:

- Achieve synergy between both projects by collaboration in the common areas of interest
- Explore the possibility to share the experience and technical knowledge between PHOSPHORUS and Project during the series of workshops foreseen within the scope of PHOSPHORUS and Project, organised for partners of both projects.
- Formalize the dissemination and promotion of the Phosphorus and Project results in research community.

#### Background

**PHOSPHORUS** <http://www.ist-phosphorus.eu/>

The Phosphorus project focuses on delivering advanced network services to Grid users and applications interconnected by heterogeneous network infrastructures. The project is addressing some of the key technical challenges to enable on-demand end-to-end network services across multiple domains. The PHOSPHORUS network concept and test-bed makes applications aware of their complete Grid resources (computational and networking) environment and capabilities, and enables dynamic, adaptive and optimized use of heterogeneous network infrastructures connecting various high-end resources.

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To disseminate ideas and developments the Phosphorus consortium will strongly interact with other relevant programmes, research activities and initiatives at the European and international level. Various network-oriented R&D projects are encouraged to share results and exchange ideas with Phosphorus project.

**Project** <http://www...../>

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#### Timeframe

The collaboration is foreseen to be performed until the end of the Phosphorus or Project project.

#### Main Participants

The work will be carried out jointly by participants of both projects.

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### Financial Conditions

No transfer of funds between the two projects is anticipated. However, partners in either project may decide to transfer some of their existing resources into one or more of the co-operation activities mentioned above.

Signed:

.....  
(on behalf of the Project)

Artur Binczewski  
(on behalf of the PHOSPHORUS Consortium)

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