



#### 034115

#### **PHOSPHORUS**

Lambda User Controlled Infrastructure for European Research

Integrated Project

Strategic objective: Research Networking Testbeds



## Deliverable reference number: D.7.1.4

## Annual Report in Raising Public Participation and Awareness

Due date of deliverable: 2009-06-30 Actual submission date: 2009-06-30 Document code: Phosphorus-WP7-D7.1.4

Start date of project:
October 1, 2006

Duration:
33 Months

Revision 3

Organisation name of lead contractor for this deliverable: University of Essex (UESSEX)

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)						
Dissemination Level						
PU	Public	✓				
PP	Restricted to other programme participants (including the Commission Services)					
RE	Restricted to a group specified by the consortium (including the Commission Services)					
CO	Confidential, only for members of the consortium (including the Commission Services)					

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#### **Annual Report in Raising Public Participation and Awareness**

#### **Abstract**

This deliverable provides a comprehensive report of the effort the consortium has made to ensure external visibility of the PHOSPHORUS project. It reports on the actions taken to make the results of the project known to the public and the relevant stakeholders, and to encourage participation in the project.

This is the final release of this deliverable.

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#### **Annual Report in Raising Public Participation and Awareness**

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## • Executive Summary

The intention of the PHOSPHORUS consortium is the dissemination of its existence and results within Europe and internationally. This deliverable, together with "D7.1.2: Plan for Using and Disseminating the Knowledge" and "D7.1.3: Annual Report on Disseminating Activities", present a complete analysis of the all activities and the efforts of the consortium to raise participation and awareness of the PHOSPHORUS project.

Section 1, **Introduction**, gives a brief overview of the deliverable and introduces the strategy applied by the PHOSPHORUS consortium in raising public awareness and participation.

Section 2, **Implemented Actions**, details the actions accomplished during the year to increase public participation and awareness. It separately analyses the actions that were directed towards the scientific community and the general public.

Section 3, **Future Plans**, presents the steps that will be taken in the near future to raise public participation and awareness of the final results and achievements of the project.

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### Introduction

From the start of the project, PHOSPHORUS acknowledged the importance of publishing results openly as much as possible. The PHOSPHORUS project expresses this as its ultimate goal which is to disseminate procedures, toolkits and middleware to EU NRENS and their users to enable authorized end-to-end dynamic service provisioning across Europe and worldwide heterogeneous network infrastructure. The knowledge achieved within PHOSPHORUS is accessible to the public through deliverables, publications, presentations and informational material. This ensures that the project and its results are disseminated as widely as possible. Where restrictions on access to information exist, this is only done to protect data considered sensitive by the project partners.

PHOSPHORUS developed its website to further encourage public awareness and participation. Partners in the PHOSPHORUS consortium have liaised with other projects to promote its research in enabling on-demand end-to-end services across multiple domains.

### 1.1 Overall Strategy in Raising Public Participation and Awareness

To successfully raise public participation and awareness, the strategy applied by the PHOSPHORUS consortium was to group the dissemination into two types of audience:

**Scientific Community** represents scientific users who are not in direct liaisons with the PHOSPHORUS research community but who will benefit from the knowledge and results achieved from the project and use the knowledge acquired to perform research and to participate in other European and International projects.

**General Public** represents members of the public who do not fall under the class of scientific community. At present, this mainly includes students in high schools and universities with an interest to PHOSPHORUS relevant technical areas. Effective dissemination and exploitation is ensured through the set-up of a project website. The website contains all unrestricted information on the results, demos, its achievements at international conferences and in journals and the official presentation of PHOSPHORUS. Its participation in the organization of public workshops and presentations at exhibitions is available in the public section of the website. Information is also propagated to the general public through brochures and posters.

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## Implemented Actions

This section describes the actions implemented during the year by the PHOSPHORUS consortium to increase public participation and awareness. The results of the project have been presented in many conferences, workshops and exhibition and have been introduced to a large scientific community. The website, created at the start of the project, provides access to the general public to find out about the project, its aims and access its public deliverables. The dissemination directed to the scientific community and those directed towards the general public are detailed below.

#### 2.1 Scientific Community

This section presents information about conferences, links with other projects, and events organized by partners of the PHOSPHORUS consortium.

#### 2.1.1 Events Organised

The PHOSPHORUS website includes a link to an '*Events*' section which details a list of related activities. The section is constantly kept up to date. Links to the website of all reported events are provided in this area as well as links to a detailed section of each event within the PHOSPHORUS website. This detailed section includes a link to all public presentations and papers presented at the event.

During the duration of the project, PHOSPHORUS participated in 109 workshops, meetings and conferences, implemented 23 separate demos at 15 conferences, workshops and meetings [Phosphorus-D7.1.3].

In addition, the PHOSPHORUS consortium organised and co-organised 6 workshops and organised 2 BOF sessions described below.

#### 2.1.1.1 On-Demand Network Services for the Scientific Community

The On Demand Network Services for the Scientific Community Workshop was held on the 7<sup>th</sup> of June 2009 in co-allocation with TERENA Networking Conference 2009. The aim of the workshop was to provide a platform for participants to demonstrate different approaches to the provisioning of on-demand network services for the scientific community by the European projects, including PHOSPHORUS. In particular, the workshop highlighted the integration between transport networks, Grid middleware, applications and supporting tools like

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simulators by the presentation of solutions for seamless single-step provisioning of on-demand services across multi-domain networks.

## **2.1.1.2** Workshop on Grid vs Cloud Computing and Why This Should Concern the Optical Networking Community

The workshop on "Grid vs Cloud Computing and Why This Should Concern the Optical Networking Community" took place in San Diego, USA on the 23<sup>rd</sup> of March 2009 and was co-allocated with OFC/NFOEC 2009. The workshop acted as a platform for discussions on the challenges faced by optical network researchers in delivering the necessary technologies essential for Cloud and Grid computing services which require high speed optical networks to provide advanced and flexibly reconfigurable infrastructure. Attendees of the workshop discussed various Cloud, Grid and Utility Computing approaches and presented their challenges.

#### 2.1.1.3 Workshop on Optical Grids, Drivers & Applications for High Performance Optical Networks

The Workshop on Optical Grids, Drivers and applications for High Performance Optical Networks was coallocated with ECOC2008 (<a href="http://www.ecoc2008.org/programme.asp#workshops">http://www.ecoc2008.org/programme.asp#workshops</a>). It took place on the 21<sup>st</sup> of September 2008 in Brussels, Belgium. The main objective of the workshop was to discuss the work on the emerging aspects related to advanced techniques, platforms, paradigms and models for the design, deployment and usage of high performance optical networks with a particular focus on Grid networks and applications. The workshop covering a broad scope of research questions in the optical Grid networking realm ranging from applications that require Grid Infrastructure, the control plane that enables these applications to the optical network infrastructure that supports these applications. The workshop was co-supported by PHOSPHORUS.

#### 2.1.1.4 Workshop on High Performance Grid Networks

The Workshop on High Performance Grid Networks (http://hpng.intec.ugent.be/index.php), took place in Lyon, France in May 2008. The main objective of the workshop was to discuss and work on the emerging aspects related to advanced techniques, platforms, paradigms and models for the design, deployment and usage of high performance Grid networks. The workshop was co-supported by Phosphorus and co-located with CCGRID2008.

#### 2.1.1.5 Federica-Phosphorus Tutorial and Workshop

The Federica-Phosphorus Tutorial and Workshop (<a href="http://www.ist-phosphorus.eu/event\_07.php">http://tnc2008.terena.org/meetings/</a>) presented a platform to discuss architectural solutions for network and IT service integration over high-speed network infrastructure. In particular, the workshop presented various implementations of network control and service plane architectures to support the emerging infrastructure-as-a-

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service model. The workshop took place on 18th May 2008 in Bruges (Brugge), Belgium and was co-located with TERENA Networking Conference (TNC) 2008.

#### 2.1.1.6 Networks for IT: A new opportunity for optical network technologies at ECOC2007

The workshop, "Networks for IT: A new opportunity for optical network technologies" was co-organised with e-Photon-One. It was chaired by Dimitra Simeonidou (<a href="mailto:dsimeo@essex.ac.uk">dsimeo@essex.ac.uk</a>) of University of Essex. Co-chairs for the event were Mario Pickavet (mario.pickavet@intec.ugent.be), Ghent University – IBBT, Anna Tzanakaki, (<a href="mailto:atza@ait.edu.gr">atza@ait.edu.gr</a>), Athens Information Technology and Ioannis Tomkos, (<a href="mailto:itomkos@ait.edu.gr">itomkos@ait.edu.gr</a>), Athens Information Technology.

The workshops stemmed from the well known realization that networks increasingly deal with managing and adapting distributed computing and associated data management resources (PCs, servers, supercomputers, clusters) and storage systems. Its aim was to address a paradigm shift in the optical network architecture that may be needed to enable dynamic and distributed IT services at large scale. This workshop offered a unique opportunity for optical network researchers and practitioners to give their views on the impact of the optical network architecture on each part of the end to end service delivery and on the interoperability of public and service provider networks of all kinds. In addition to invited paper presentations, the workshop provided an intimate setting for discussion and debate.

#### 2.1.1.7 BoF session on "Service Level Agreements" at ISC07

FHG organised and chaired a BOF session on Service Level Agreements for resource management at the International SuperComputing Conference 2007. The BOF discussed the PHOSPHORUS MetaScheduling Service developments.

## **2.1.1.8** BoF session on "Delivery of Network Services across Heterogeneous Optical Domains" at SC06

University of Essex organised and chaired a BOF session, GHPN/GLIF: Delivery of Network Services across Heterogeneous Optical Domains, in SuperComputing2006.

The BOF discussed solutions provided by the three research projects: PHOSPHORUS (EU), EnLIGHTened (US) and G-Lambda (JPN). All three projects are concerned with interoperability issues between heterogeneous network domains. The BoF targeted wider community awareness and participation in the main common technical challenges concerning these projects.

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#### 2.1.2 Publications in Journals and Conferences

During the duration of the project, PHOSPHORUS published over 90 papers and posters in journals and conference/workshop proceedings. The papers cover all aspects of PHOSPHORUS project in the areas of GMPLS control plane and architecture, GRID job routing algorithms, QoS-aware resource scheduling, optical networks and lightpath monitoring and provisioning. At the end of the project, 18 journal articles were published and 6 submitted awaiting acceptance [Phosphorus-D7.1.3].

#### 2.1.3 Presentations at Meetings and Workshops

PHOSPHORUS consortium partners have, during the project, given 50 oral and poster presentations at various meetings and workshops [Phosphorus-D7.1.3]. Of these, 10 presentations were the official presentations on the PHOSPHORUS project. The others cover all aspects of the PHOSPHORUS results, as indicated in the previous section.

#### 2.1.4 Public Demos and Exhibitions

Public Demos and exhibitions present a platform for raising public awareness of the developments of the project. During the year, the partners of the PHOSHPORUS consortium gave over 20 demos and organised over 11 booth exhibitions [Phosphorus-D7.1.3].

#### 2.2 General Public

This section presents the informational material used in the advertising the PHOSPHORUS project to members of the general public.

#### 2.2.1 Website

A website was developed to act as a platform for public outputs such as publications, public deliverables, and public standardisation drafts. It is the main means for dissemination to the general public. The website presents a brief summary of the PHOSPHORUS project, all events that have taken place since the start of the project, a news section and a comprehensive contact details list of all partners involved in the project. The final structure of the website is detailed below along with a short description for each section and audience targeted.

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Figure 2.1: Homepage of the PHOSPHORUS website

The homepage, which is depicted in figure 1 above, has direct links to:

- About
- News
- Activities
- Partners
- Events
- Publications
- Deliverables
- Standardisation
- Documents and Media
- Gallery
- Contact Us
- Login

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The homepage opens up to the *News* section where up-to-date news related information concerning the project can be found.

In the *About* section, the general public is presented with a brief but concise summary of the project. The *Activities* section gives a comprehensive overview of each major activity and work-package. The *Partners* section provides links to the website of all participating partners in the project. Various announcements of related activities are detailed in a dedicated page for *Events*. The page presents links to the website of each event presented. A link to a more detailed webpage within the PHOSPHORUS website which contains more information and all publicly accessible documents is also provided.

The *Publications* section includes a number of publications authored by the PHOSHPORUS partners and presented at various conferences. The *Deliverables* section lists all public deliverables submitted to the EC along with links to each deliverable. The *Standardisation* section presents a concise report of all standardisation activities the consortium actively participates in. The *Documents and Media* page lists all publicly accessible documents such as co-operation agreements and the PHOSPHORUS video along with links to the documents. Finally any interested member of the general public can contact the coordinator of the project through the *Contact Us* section for any further information. The contact details of the Project Coordinator which includes his email and phone number details can be found here.

The website also a *Login* section restricted to Phosphorus members, which permits collaborations within the group and a link to the official Phosphorus Wiki.

The interest that the project has raised can be reflected within the figures. Figures 2 and 3 below present some indicative statistics from the website visits throughout the year. Figure 2 shows the number of hits for the past year (70,000 hits per month on average).

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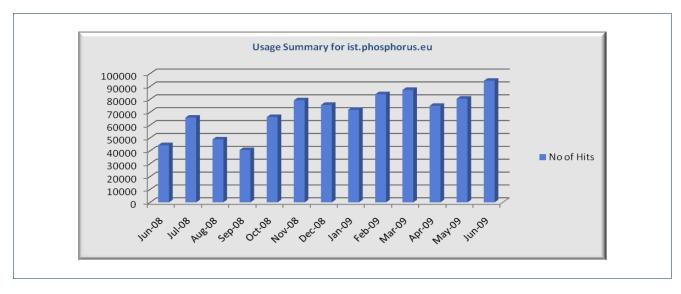


Figure 2.2: PHOSPHORUS website hits for the last 12 months

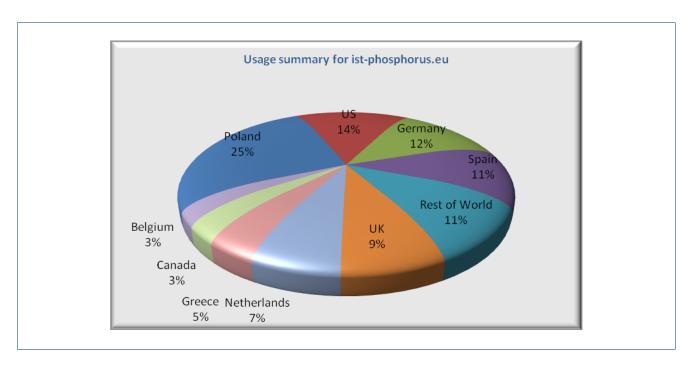


Figure 2.3: PHOSPHORUS website statistic by location of visitors

The website is still live and will continue to be live for a period after the end of the project. It can be accessed through <a href="http://www.ist-phosphorus.eu">http://www.ist-phosphorus.eu</a>

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#### 2.2.2 Project Brochure, Poster and Briefcase

During the duration of the project, a number of informational materials were designed for the main aim of raising public awareness. These included an official PHOSPHORUS project wall poster that outlines the objectives, architecture, testbed, partners and the projects contact details. A detailed version of the poster details the collaboration between the EnLIGHTened, G-Lambda and PHOSPHORUS project. It presents the objectives, architecture and brief summary of each project. The posters were distributed to all members of the PHOSPHORUS consortium for display in their companies and universities. The poster was also used at the booths at the events PHOSPHORUS participated in.

A brochure, one page for each work-package, was prepared by PSNC. It presents a detailed summary of the project objectives and the objectives and activities of each work-package. The pamphlets were also widely distributed at conferences and workshops as well as to visitors that attended tours of the laboratories of PHOSPHORUS partners.

Other information materials prepared by PHOSPHORUS include white T-shirts, labels and stickers and sweets with the PHOSPHORUS logo on it.

#### 2.2.3 Public Documents

Public documents and deliverables are made accessible in the *Documents and Media, and Deliverable Sections* of the website. These sections include cooperation agreements with NRENs, the official PHOSPHORUS presentation and all publicly accessible deliverables. Other documents that are publicly available on the website include presentations and talks given at PHOSHPORUS organised workshops.

#### 2.2.4 Public Events

#### 2.2.4.1 Gender Issues Workshop

A Gender Issues Workshop, held under the umbrella of The Network of Excellence (NoE) e-Photon/ONe+project was co-organised and supported by PHOSPHORUS. The workshop which was well attended by both male and female partners was organised to highlight the concerns of the European Union on the extremely high under-representation of women in scientific careers. The main point on the agenda was based on the theme: "From Network of Excellence towards Network of Women - Linking women in R&S". Participants at the event engaged in discussions about facilitating the development and support of female scientists. The workshop was held in Politecnico di Torino (Turin, Italy) on the 28 of January 2008. During the workshop, partners from numerous supporting IST projects such as NOBEL and TRIUMPH had a chance to collaborate on this issue and be introduced to the developments of the PHOSPHORUS project.

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#### 2.2.4.2 Visits from Secondary/College School Students to PSNC

PSNC offers a constant opportunity for students to see PSNC from inside. They are invited to visit Supercomputing and Networking rooms, PIONIER Network Operational Centre and places where PSNC researches from various projects are working and have meetings.

The visitors had possibility to meet the people involved in the PHOSPHORUS project and see the PHOSPHORUS testbed devices. They also had been briefly introduced to PHOSPHORUS project. Some PHOSPHORUS posters and many brochures with details about the project were available.

Summarizing in last year there were 166 students visit PSNC premises.

Visit Date	School name	School localization	School type	Number students	of
28 March 2007	School of Informatics and Internet	Poznan	Technical College	11	
12 April 2007	School of Economics	Srem	Secondary School	30	
18 April 2007	College of Informatics	Poznan	Technical College	19	
30 April 2007	XII Gimnazjum	Poznan	Primary School	15	
14 June 2007	Polytechnic School	Wrzesnia	Technical College	19	
12 December 2007	Polytechnic School	Wrzesnia	Technical College	53	
20 February 2008	J. and WL. Zamoyskich's Secondary School	Rokietnica	Secondary School	19	

#### 2.2.4.3 Formal Opening of Dept of Computing and Electronic Systems at University of Essex

University of Essex presented the PHOSPHORUS project during the Grand Opening of its new department, The Department of Computing and Electronic Systems on the 4<sup>th</sup> of October 2007. The event drew audiences from a wide background. PHOSPHORUS partners were on hand to give a short introductory description of the project to visitors at the event with the aid of the PHOSPHORUS poster.

#### 2.2.4.4 Researchers Night at Poznan

PSNC presented the PHOSPHORUS project during Researchers' Night 28th September in Poznan (www.nocnaukowcow.pl/en/about). The aim of the event was to give the public and in particular young people, the opportunity to meet researchers within the context of festive and 'fun' activities and to highlight the appeal of pursuing a research career.

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The visitors had possibility to see the PHOSPHORUS testbed devices and they had been introduced to the reasons of the PHOSPHORUS testbed implementation. Some PHOSPHORUS posters and many brochures with details about the project were available.

#### **2.2.4.5** "Virtually A Student" Summer School at University of Essex

July 23 – 25 2007 saw thirty-two high school students, aged 16, experience a three-day summer school stay at the University of Essex. The summer school was organised to introduce students interested in PHOSPHORUS fields to the choices available to them in Computer Science and Electronics. The visit included brief talks on different projects within the Department. The students were introduced to the PHOSPHORUS project with a brief summary with the aid of the official project poster.

#### 2.2.5 Magazine Articles

Phosphorus partners authored two magazine articles:

- "Enabling Grid-Network Services via Control Plane: the Phosphorus G2MPLS way to the e-Infrastructures" published in the April 2009 Issue of the Zero-In Magazine.
- "Empowering Grid users with improved services" published in the April 2008 Issue of the eStrategies
  magazine on Advanced Grid Technologies. The magazine covers a range of technical Research topics
  and enjoys a European wide audience in over 30 countries.

#### 2.2.6 References in the Press

The efforts made by one of the PHOSPHORUS partners, I2CAT, were acknowledged in two press releases. Both releases make explicit reference to the PHOSPHORUS project.

- The article, "Alcatel-Lucent completes the international interconnection to the experimental scientific networks of the Foundation i2CAT" was released on 8th October 2007. It can be found in the online magazine, "The Economist" ("eleconomista.es") and accessed at:

  <a href="http://www.eleconomista.es/empresas-finanzas/noticias/291214/01/70/Alcatel-Lucent-completa-la-interconexion-internacional-a-las-redes-cientificas-experimentales-de-la-Fundacion-i2CAT.html">http://www.eleconomista.es/empresas-finanzas/noticias/291214/01/70/Alcatel-Lucent-completa-la-interconexion-internacional-a-las-redes-cientificas-experimentales-de-la-Fundacion-i2CAT.html</a>

A further press release was released from Internet2 regarding the Phosphorus-related demo. It can be accessed by visiting the following link: https://mail.internet2.edu/wws/arc/i2-news/2007-11/msg00002.html

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#### 2.2.7 Multimedia Material

An important PHOSPHORUS promotion material is a PHOSPHORUS movie. Two versions, a long and a short version were released. The videos depict the PHOSPHORUS ideas and objectives. The long version includes interviews with the work-package leaders.

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### 3 Future Plans

#### 3.1.1 Website

The website will remain live for a period after the completion of the project. It will continue to be updated with any further events to report any further results or achievements of PHOSPHORUS.

#### 3.1.2 Exhibitions, Demos, Conferences and Workshops

Although the project has come to an end, the PHOSPHORUS partners plan to have one last demo at the Supercomputing Conference at the end of 2009.

#### 3.1.3 Journal Articles

PHOSPHORUS partners are working on organising joint journals to report the outcome of the projects.

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## 4 Acronyms

**BoF** Birds of a Feather

**ECOC** European Conference and Exhibition on Optical Communication

**EC** European Commission

**EU** European Union

**GHPN** Grid High-Performance Networking

GLIF Global Lambdagrid

GMPLS Generalised Multi-Protocol Label Switching
NREN National Research and Education Network

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## 5 References

[Phosphorus-D7.1.3] "PHOSPHORUS deliverable D7.1.3: Annual Report on Dissemination Activities", Project deliverable, European IST project PHOSPHORUS, June 2009

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