



COMMUNICATION PLATFORM  
FOR TENDERS OF NOVEL TRANSPORT NETWORKS

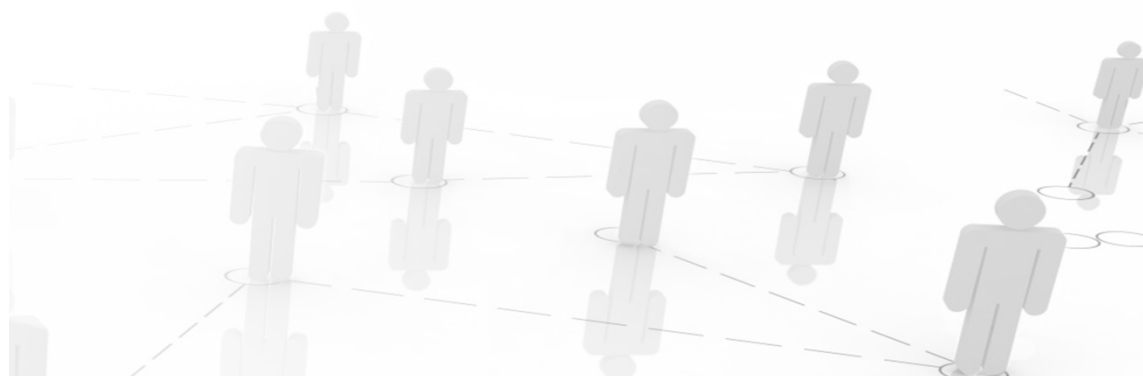
## *The First Report on Dissemination & Collaboration*

*Bartosz Belter, Piotr Rydlichowski, Artur Binczewski, Aris Sotiropoulos, Chrysostomos Tziouvaras, Jan Radil, Rudolf Vohnout, Josef Vojtech*





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<i>Deliverable editor:</i>	<b>Chrysostomos Tziouvaras (GRNET)</b>
<i>Author list:</i>	<b>Bartosz Belter, Piotr Rydlichowski, Artur Binczewski (PSNC)</b> <b>Jan Radil, Rudolf Vohnout, Josef Vojtech (CESNET)</b> <b>Aris Sotiropoulos, Chrysostomos Tziouvaras (GRNET)</b>



<sup>1</sup> The dissemination level of any deliverable falls into one of the following categories:

- PU = Public, fully open, e.g. web
- CO = Confidential, restricted under conditions set out in Model Grant Agreement
- CI = Classified, information as referred to in Commission Decision 2001/844/EC.

## Table of Content

1	Executive Summary .....	5
2	Introduction and overall strategy.....	6
3	Dissemination Activities .....	7
3.1	External dissemination .....	7
3.1.1	Project Website. ....	7
3.1.2	Events .....	8
3.1.3	Newsletters and Leaflets .....	13
3.1.4	Posters.....	14
3.2	Internal dissemination.....	15
3.2.1	Internal communication .....	15
3.2.2	Face to face and remote meetings.....	16
4	Collaboration activities.....	17
4.1	Collaboration with other projects .....	17
4.2	COMPLETE in Photonics21 and PCP cluster.....	19
4.3	Collaboration with public network operators .....	19
4.4	Collaboration with vendors .....	20
5	Conclusions .....	22



## 1 Executive Summary

This document presents the COMPLETE collaboration and dissemination achievements during the first eighteen months of the project. Moreover, it presents the collaboration and dissemination results with reference to the KPIs defined at the deliverable D3.1. “Dissemination & Collaboration Plans”. As detailed in this deliverable, almost all the target KPIs were fulfilled and most of the them by more than 100%. COMPLETE partners managed to achieve most of the dissemination targets by participating to 15 discrete events in the area of optical communications and advanced network services. During these events, COMPLETE partners had the opportunity to directly communicate with representatives of potential users of the COMPLETE platform as well as optical vendors. Moreover, COMPLETE partners established communication channels with local public network operators in Czech Republic, Greece and Poland and used all existing communication channels in order to disseminate COMPLETE’s scope and results within the GÉANT ecosystem.

## 2 Introduction and overall strategy

High complexity of public procurement procedures imposes the need for creating an EU-wide entity in order to support public institutions with know-how and clear guidelines on how to efficiently collect all required market information and conduct tenders. Public sector, in order to efficiently conduct tenders for beyond state-of-the-art optical equipment, needs to synchronize efforts by building a common procurement roadmap and by specifying short term and mid-to-long term requirements.

The objective of the COMPLETE project is to optimize spending of public resources in purchasing optical network equipment and related services. As a key approach towards this goal, the project proposes to create a common information platform for public procurers and support them in the procurement process by providing organizational and technical expertise. This platform will significantly improve the quality of decisions taken by public procurers and in some cases will enable them to conduct procurements that previously would not have been possible due to various organizational and technological constraints such as no access to technical information and roadmaps.

Expected project impact is focused at addressing the challenges faced by the public sector in respect to procurement procedures in a number of European Union countries. Specific opportunities to address concrete public sector challenges and needs will be provided to the vendors and the industry. At the same time, it should be possible to reduce public sector demand fragmentation through definition of common specifications and preparation of joint procurement procedures. The project will directly help public procurers to improve the quality of their procurement outcomes and will also enable entities that were previously unable to undertake decisions to take part in public procurements.

This document presents the results of the collaboration and dissemination activities in the COMPLETE project. The collaboration and dissemination activities are in the core of the COMPLETE project and are strongly connected with project results and goals. This document describes the dissemination and collaboration activities undertaken by project partners that were required to achieve targeted results.

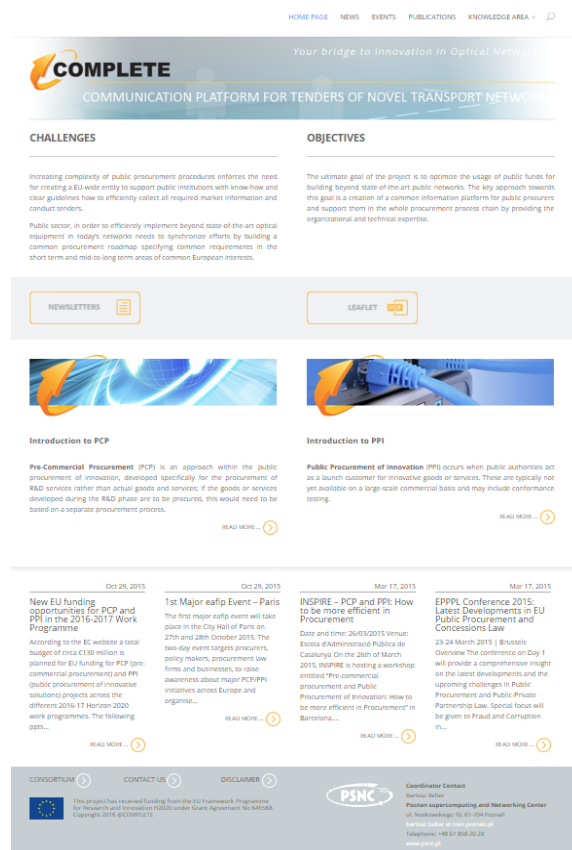
### 3 Dissemination Activities

Dissemination activities undertaken by project partners were focused on taking part in industry conferences and events with strong participation of the NREN community. Moreover, project partners prepared the project website, newsletters and posters.

#### 3.1 External dissemination

##### 3.1.1 Project Website.

The project website: <http://photonics-complete.eu/> is hosted and administrated by PSNC.



The website contains information regarding the project, its goals, documents and references. The presentations and newsletters are attached. The website also contains template materials for the project documents. The project web site has been described in details in the deliverable D1.2. "1<sup>st</sup> Periodic Report".

### 3.1.2 Events

The project partners attended well known conferences and events to the NREN community, where the project focus and results were presented. Moreover, meetings with industry were organized.

The following table presents the summary of events the project partners attended in the first 18 months of the project execution.

<i>Event</i>	<i>Short description</i>	<i>Involved partners</i>	<i>Corresponding KPIs</i>	<i>Achievements</i>
TNC 2015	<a href="https://tnc15.terena.org/">https://tnc15.terena.org/</a>  The TNC15 Networking Conference is the largest and most prestigious European research networking conference, with more than 650 participants attending this annual event. TNC brings together decision makers, managers, networking and collaboration specialists, and identity and access management experts from all major European networking and research organizations, universities, worldwide sister institutions, as well as industry representatives.	PSNC, CESNET, GRNET	Number of talks: 1   Number of booths: 1   Number of vendors approached: 2   Unique visitors: >200	Number of talks: 0  We did not manage to submit a paper to the conference  Number of booths: 1  PSNC organized a booth, where COMPLETE was presented  Number of vendors approached: 7, namely ADVA, Brocade, Cisco, Coriant, ECI Telecom, Juniper Networks and Nokia  Unique visitors: >300

TNC 2016	<a href="https://tnc16.terena.org/">https://tnc16.terena.org/</a>  The continuation of the TERENA conferences. Although the location of the conference is not known yet, because of its importance to the GEANT community, all project partners plan to attend to disseminate information about COMPLETE.	PSNC, CESNET, GRNET	Number of posters: 1  Number of booths: 1  Number of vendors approached: 2  Unique visitors: >200	of     of   of  of  	Number of posters: 1  Number of booths: 2  PSNC and CESNET organized booths, where COMPLETE was presented  Number of vendors approached: 8, namely Adva, Brocade, Cisco, ECI Telecom, Infinera, Juniper Networks, Nokia and NoviFlow  Unique visitors: >500
OFC 2015	<a href="http://www.ofconferen ce.org/en-us/home/">http://www.ofconferen ce.org/en-us/home/</a>  OFC is the largest global conference and exposition for optical communications and networking professionals, with attendance over the 12000 and 800+ technical papers. For over 40 years, The Optical Fiber Communication Conference and Exposition (OFC) has drawn attendees from all corners of the globe to meet and greet, teach and learn, make	CESNET, PSNC	Number of vendors approached: 8	of 	Number of vendors approached: 10, namely Adva, Ciena, Cisco, Coriant, ECI Telecom, Finisar, Infinera, JDSU, Oclaro and Nokia

	connections and move business forward.				
OFC 2016	<a href="http://www.ofconferen ce.org/en-us/home/">http://www.ofconferen ce.org/en-us/home/</a>  OFC is the largest global conference and exposition for optical communications and networking professionals, with attendance over the 12000 and 800+ technical papers. For over 40 years, The Optical Fiber Communication Conference and Exposition (OFC) has drawn attendees from all corners of the globe to meet and greet, teach and learn, make connections and move business forward.	PSNC, CESNET	Number vendors approached: 4	of	Number of vendors approached: 10, namely Adva, Ciena, Cisco, Coriant, ECI Telecom, Finisar, Infinera, Lumentum, Nokia and Oclaro
CLEO 2015	<a href="http://www.cleoconfere nce.org/home/">http://www.cleoconfere nce.org/home/</a>  CLEO serves as the premier international forum for scientific and technical optics, uniting the fields of lasers and opto-electronics by bringing together all aspects of laser technology, from basic research to industry applications.	CESNET	Number posters: 1  Unique visitors: >50	of	Number of posters: 0 Unable to submit the poster to the conference  Unique visitors: >0  Due to missing poster at the conference we cannot claim visitors.

ICTON 2015	<a href="http://www.icton2015.hu/">http://www.icton2015.hu/</a>	CESNET	Number of posters: 1	Number of posters: 1
	The International Conference on Transparent Optical Networks has the scope concentrated mainly on the applications of transparent and all-optical technologies in telecommunications, computing and novel applications.		Number of papers: 1	Number of papers: 0
			Unique visitors: > 30	Unique visitors: > 50
NGON 2016	<a href="https://nextgenerationoptical.com/">https://nextgenerationoptical.com/</a>	CESNET	Number of talks: 1	Number of talks: 0
	NGON 2016 addresses and mirrors the optical innovation and drive towards Terabit transmission with a smarter and more flexible exhibition and conference.		Unique visitors: >50	Unique visitors: >50
	<ul style="list-style-type: none"> <li>Optical Data Centre Interconnect</li> <li>Transport SDN</li> <li>Photonic Integration</li> </ul>			Number of vendors approached: 3, namely Huawei, Infinera and ZTE
OIF 2016	<a href="http://www.oiforum.com/">http://www.oiforum.com/</a>	CESNET	Number of talks: 1	Was replaced by attendance of ICTON 16.
	The Optical Internetworking Forum (OIF) promotes the development and deployment of		Unique	Vendors approached instead: 2, namely Coriant and Tektronix

	interoperable networking solutions and services through the creation of Implementation Agreements (IAs) for optical networking products, network processing elements, and component technologies.		visitors: >50	Unique visitors: >50
<i>SPIE15</i>	<a href="http://spie.org/">http://spie.org/</a>  SPIE is an international society advancing an interdisciplinary approach to the science and application of light.	CESNET	Number of talks: 1  Unique visitors: >50	Number of talks: 10  Number of posters: 1 (COMPLETE was acknowledged)  Unique visitors: >50
<i>ECOC 2015</i>	<a href="http://www.ecoc2015.org/modules.php?name=webstructure&amp;idwebstructure=1">http://www.ecoc2015.org/modules.php?name=webstructure&amp;idwebstructure=1</a>  ECOC is the leading conference on optical communication in Europe, attracting more than 1,000 participants each year and an exhibition space of more than 10,000 m2. The latest advances in optical communication technologies are reported, from fibres, components and systems up to networks.	PSNC	Number of vendors approached: 3	Number of vendors approached: 6, namely Adva, Ciena, Cisco, Coriant, Juniper and Infinera
<i>SDN &amp; Open Flow World Congr</i>	<a href="http://www.layer123.com/sdn">http://www.layer123.com/sdn</a>  Launched in the spring of 2012 -SDN & OpenFlow	GRNET	Number of vendors approached: 5	Did not manage to attend the event



ess 2015	World Congress is the industry leading debating forum and showcase for the rapidly growing and massively influential, Software-Defined Networking and Network Functions Virtualisation industries. Now, with over 100 supporting partners and sponsors, and 1,000+ delegates, the World Congress has established itself as the principal network innovation conference in Europe for the global telecommunications industry.			
EC conce rtatio n events	The European Commission organizes regular concertation meetings for Photonics21 (annual) and PCP projects (annual). Project partners plan to attend these events, presenting the project goals, status and major achievements	PSNC	Number of events attended: min 3	Number of events attended: 5  As explained in Section 4.2, PSNC as the coordinator of the project attended all collaboration events, including PCP clusters and Photonics21 meetings.

Table 1 Attended events

### 3.1.3 Newsletters and Leaflets

COMPLETE partners prepared the project leaflet which is available at [http://photonics-complete.eu/wp-content/uploads/2015/03/COMPLETE\\_project-leaflet.pdf](http://photonics-complete.eu/wp-content/uploads/2015/03/COMPLETE_project-leaflet.pdf).

Moreover, the project partners prepared newsletters that provided information regarding the project and hosted selected vendors' view on future technological developments as well as NRENS' view on advanced network services requirements. The newsletters are available at <http://photonics-complete.eu/newsletters/>. The newsletters have been announced to collaboration partners through regular channels, mainly emails.

### 3.1.4 Posters

During the TNC 2016 conference in Prague, project partners presented the project with the following poster. The poster was a starting point for the discussion with vendors and partners on how to further utilize the project potential.

**Pre-Commercial Procurement in Optical Networking Domain**

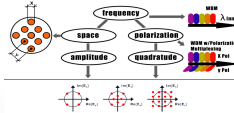
Vohnout R.<sup>1</sup>, Vojtěch J., Radil J., Škoda P.  
CESNET, Žitkova 4, CZ-16000, Prague, Czech Republic  
\*rudolf.vohnout@cesnet.cz

Belter B., Ridlichowski P.  
PSNC, ul. Z. Noskowskiego 12/14, 61-704 Poznań, Poland

Tziouvaras Ch.  
GRNET, 56, Mesogion Av. 11527, Athens, Greece

**Motivation & Approach**

- To keep up with the pace of other industry sectors, like health or transportation that are using Pre-Commercial Procurement (PCP) and Public Procurement of Innovation (PPI) mechanisms on regular basis.
- To support NREN community with necessary knowledge.
- It has been discovered that new technologies usually "lay" in the labs or in vendors safe boxes pots and waiting to be released in a specific time to have the biggest market success possible.
- In many cases, there are special groups of users (usually National Research and Education Network operators – NRENs) who have different requirements on one optical network equipment than traditional TELCOs.




*Available Degrees of Freedom in Multiplexing*

**Preliminary Results**

- Database now has 8 cooperating vendors.
- Cooperation with public (including regional) operators has been established.
- 5 NDAs with vendors have been concluded.
- 5 new technology approaches have been described.
- One new service based on new technological approach has been defined – (alien) Spectrum as a Service with custom-width Super-Channels.
- 3 Deliverables have been published.
- 3 Best practices from different countries in public procurement domain have been published.

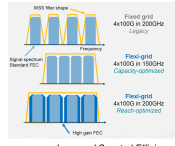
**Acknowledgements**

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<http://photonics-complete.eu/>



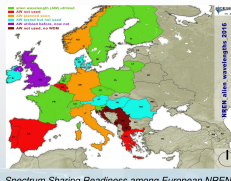
**Steps Taken and Goals**

**PPI related:**


1. To create a database of Public Operators and Vendors.
2. To contact vendors and conclude NDAs.
3. To access internal information (e.g. internal road-maps) based on NDAs.

**PCP related:**

- a. To define new technological requirement (solely in cooperation with NREN users).
- b. To persuade subset of vendors to implement feature and/or technology based on NREN requirements.
- c. On top of that it is appropriate to experimentally verify new product/technology in NREN network (usually multi-vendor environment) in order to mitigate compatibilities issues.



*Spectrum Sharing Readiness among European NRENs*



COMPLETE had another poster on the ICTON 16 conference in Trento, Italy, where more than 50 approached peoples, at least 10 people directly asked for the success of PCP/PPI in the optical networking domain.

## Pre-Commercial Procurement in Optical Networking Domain

Vohnout R., Vojtěch J., Velc R., Škoda P.  
CESNET, Žitkova 4, CZ-16000, Prague, Czech Republic  
\*rudolf.vohnout@cesnet.cz

Belter B., Ridlichowski P.  
PSNC, ul. Z. Noskowskiego 12/14, 61-704 Poznań, Poland

Tziouvaras Ch.  
GRNET, 56, Mesogion Av. 11527, Athens, Greece

**Motivation & Approach**

- To keep up with the pace of other industry sectors, like health or transportation that are using Pre-Commercial Procurement (PCP) and Public Procurement of Innovation (PPI) mechanisms on regular basis and to support NREN community with necessary knowledge.

- New technologies usually "lay" in the labs or in vendors safe boxes pots and waiting to be released in a specific time to have the biggest market success possible.

- In many cases, there are special groups of users (usually National Research and Education Network operators – NRENs) who have different requirements on one optical network equipment than traditional TELCOs.

- New applications require alien wavelengths and/or Spectrum as a Service. Terabit speeds cannot satisfy such requirements – low and constant jitter is important.

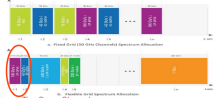


Figure 1: Spectrum as a Service Different Channel Width Coupling

- Preliminary Results**
- Database now has 8 cooperating vendors.
  - Cooperation with public (including regional) operators has been established.
  - 5 NDAs with vendors have been concluded.
  - 5 new technology approaches have been described.
  - One new service based on new technological approach has been defined (aSaS).
  - 3 Deliverables have been published.
  - 3 Best practices from different countries in public procurement domain have been published.

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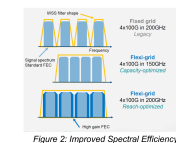


Figure 2: Improved Spectral Efficiency

### Steps Taken and Goals

#### PPI related:

1. To create a database of Public Operators and Vendors
2. To contact vendors and conclude NDAs.
3. To access internal information (e.g. internal road-maps) based on NDAs.

#### PCP related:

- a. To define new technological requirement (solely in cooperation with NREN users)
- b. To persuade subset of vendors to implement feature and/or technology based on NREN requirements.
- c. On top of that it is appropriate to experimentally verify new product/technology in NREN network (usually multi-vendor environment) in order to mitigate compatibilities issues.

### Allen Spectrum as a Service Approach

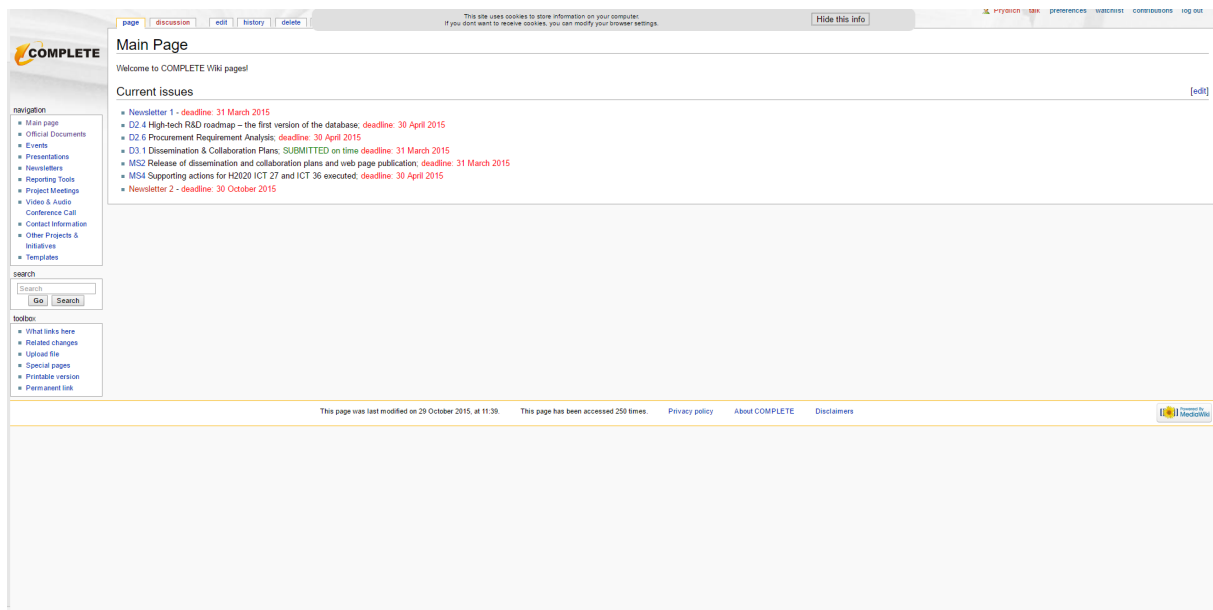
- (a)SaS is based on different approach to Alien Wavelength.
- Reasons:
  - All-coherent network design makes non-coherent spectrum very expensive.
  - Especially for those who cannot fully utilize 100G.
- Service allows to "reserve" frequency range (in predefined incremental steps).
  - Variable channel-width fully supports optical elasticity.
  - I.e. Flex Grid ready granularity up to 12.5GHz.
- Results in optimal spectrum allocation.
  - Support of co-existence of channels of different width next to each other.
  - Bundling of fine channels like 25 GHz or even 12.5GHz together with traditional 50 (100) GHz.
  - For example ability to have 62.5 GHz tiny super-channels (see figure 2).

## 3.2 Internal dissemination

The project partners have created a number of tools to provide and streamline communication.

### 3.2.1 Internal communication

Internal project communication was provided by the project coordinator – PSNC. Partners are using a wiki page and a videoconferencing system to organize internal and external meetings. The project kickoff meeting was organized and run by PSNC.



## 3.2.2 Face to face and remote meetings

Project partners conduct regular internal and external meetings. Internal regular meetings are conducted using PSNC videoconferencing system. On average the project partners run one meeting per two weeks.

Face to Face meeting are conducted during the conference meetings as described in section 3.1.2. During the conference meetings, project partners organized meetings with leading market vendors to discuss and proceed with collaboration activities. The scope of the meetings with market vendors was innovative technologies for the optical transport networks and new advanced services requirements.

## 4 Collaboration activities

Collaboration activities are at the core of the COMPLETE project. In order to achieve the best possible results, project partners are working to establish a broad range of collaboration agreements.

External collaboration with third parties is critical for this type of projects. COMPLETE is committed towards all networking activities which bridge the customers of the project, i.e. public network operators with vendors.

This section describes the project partners' results for collaboration with industry, public network operators and other projects and initiatives working in the PCP/PPI domain.

### 4.1 Collaboration with other projects

At the initial stage of the project some efforts have been allocated to collect information about other CSA projects on Innovation Procurement in the ICT domain resulting from the first Horizon 2020 calls. The following projects (and their coordinators) have been identified:

- EPP-eHealth <http://innovationithospitals.com/>  
The aim of the EPP-eHealth project is to transform the market for eHealth solutions through dialogue and innovation procurement. The project will make progress towards this aim by creating a network of procuring organizations that understand the opportunities that eHealth can offer.
- PICSE <http://picse.eu/>  
PICSE leverages on a very lean consortia composed by three partners: CERN (the PICSE Coordinator), the Cloud Security Alliance (CSA) and Trust-IT Services representing respectively a public research organization, a not for profit organization aimed to promote the use of the cloud computing best practices related to security assurance and to provide education on the use of cloud computing and an SME.
- PRO4VIP <http://www.pro4vip.eu>  
Network of healthcare procurers that addresses the challenge of the increasing visually impaired population and aims to develop an innovation procurement roadmap for early detection and screening of functional low vision conditions and/or support the provision for low vision services.

- SAEPP <http://www.smartambulanceproject.eu/>  
The Smart Ambulance European Procurers Platform (SAEPP) project is comprised of a group of European ambulance services, academic healthcare research bodies, hospitals and other healthcare organizations who have formed a consortium with the objective of designing and building a 21st century prototype emergency ambulance vehicle which will allow frontline clinicians to provide more high-level patient care on-scene and thus help reduce the number of unnecessary hospital transports currently made by ambulance services across the Euro-Zone.

It is expected that close collaboration between these projects will be established, mainly targeting the exchange of knowledge about practical implementations of the PCP/PPI programs.

Moreover, as the result of the annual Photonics21 workshops, collaboration with PICS4All (<http://www.pics4all.jeppix.eu/>) has been established. The flyer of the project has been uploaded to the COMPLETE website, while information about COMPLETE has been proposed to the PICS4All coordinator to be included on their website.

<i>Short description</i>	<i>Involved partners</i>	<i>Corresponding KPIs</i>	<i>Achievements</i>
<i>Collaboration with other projects working on PCP/PPI actions is very important. COMPLETE plans to establish formal relationship with these projects, leveraging on results already achieved by these projects and lessons learnt</i>	PSNC, CESNET, GRNET	Number of projects contacted in the M1-M18 period to establish collaboration: 1	<p>Number of projects contacted in the M1-M18 period to establish collaboration: 1</p> <p>Several mailing lists have been created to exchange information between projects working in similar areas. One of them was created to establish contacts between PCP CSA projects, and another one was created to share information about projects working in the Photonics21 domain.</p> <p>Recently information about PICS4All have been published on the COMPLETE website, thanks to direct exchange of emails with the project coordinator. PICS4All is working on updating their website to include information about COMPLETE.</p>

## 4.2 COMPLETE in Photonics21 and PCP cluster

Along the project execution, representatives of the project have attended the two annual Photonics21 group meetings and three concertation meetings for CSA coordinators and PCP projects. The complete list of concertation meetings and Photonics21 meetings attended by the project is shown below:

Belgium, Brussels	H2020 CSA concertation meeting	04-05.05.2015
Belgium, Brussels	H2020 CSA concertation meeting (Photonics21 Annual Meeting)	28-29.05.2015
Paris, France	Concertation meeting – CSA coordinators’ meeting	23-25.09.2015
Belgium, Brussels	H2020 CSA concertation meeting (Photonics21 Annual Meeting)	01-02.03.2016
Belgium, Brussels	Annual Concertation Meeting for PCP Projects	09-11.03.2016

## 4.3 Collaboration with public network operators

Project Partners organized meetings with local public networks in the respective countries. The purpose of these meetings was to start collaboration with potential users of the COMPLETE project framework. CESNET has collaborated with the ROWANet network. PSNC has conducted meetings with the WSS local broadband public network. GRNET has collaborated with the state owned SYZEFKSIS network.

The core partners of COMPLETE are NRENs. This creates unique opportunities to establish direct relationship with other NRENs in order to discuss common needs, interests and opportunities for joint procurement actions.

One of the main points of interest for COMPLETE is the GÉANT forum. All European NRENs participate to GÉANT. Representatives of NRENs participate to regular General Assembly meetings, where high-level decisions are being made. Usually GAs are attended by key NREN Executive Directors. COMPLETE is also represented there by representatives of PSNC, GRNET and CESNET. During these meetings strategic initiatives are being discussed, therefore project partners plan to extensively disseminate project outcomes to this group.

The cooperation with other NRENs is reported in project deliverables. Initial findings are described in “Procurement Requirements Analysis”, which will substantiate the deliverable D2.6. As part of future work, this analysis will be continuously extended with new findings, reporting new roadmaps of NRENs collaborating with COMPLETE.



<i>Short description</i>	<i>Involved partners</i>	<i>Corresponding KPIs</i>	<i>Achievements</i>
<i>COMPLETE disseminated information about upcoming PCP/PPI-related opportunities for NRENs.</i>	PSNC, CESNET, GRNET	Number of NRENs contacted: 5	Number of NRENs contacted: 8, namely BASNET, DFN, LITNET, NORDUNet, SURFNet, SWITCH, UNINETT, URAN
<i>NRENs are not the only target of COMPLETE. Project partners disseminated the knowledge, experience and information to other, usually local public network operators</i>	PSNC, CESNET, GRNET	Number of other public network operators contacted: 3	Number of other public network operators contacted: 3, namely WSS, ROWANET, SYZEFXIS

## 4.4 Collaboration with vendors

Collaboration with the vendors was one the most important elements of the COMPLETE project. The meetings have resulted in useful information regarding the latest solutions in the optical transport equipment and services. The goal of these meetings was to discuss possible future solutions that will best suit the specified user requirements.

The project received feedback from the following vendors: Adva, Cisco Systems, Coriant, ECI Telecom and Huawei. COMPLETE consortium collaborates with more vendors but up to now this collaboration has not produced outputs that can be presented.

On the other hand, the COMPLETE partners, acting as NRENs, have already established good relationship with industry and specifically with optical network equipment vendors. Within the project lifetime, this collaboration will be continued and extended, fulfilling requirements expressed by third party network operators. It should be noted that during initial brainstorming the partners agreed to work towards setting up a relationship between the project and the following set of vendors: ADVA, ALU, Ciena, Cisco, Coriant, ECI Telecom, Finisar, HP, Huawei, Infinera, Juniper, Optokon and RLC.

The cooperation with vendors is reported in project deliverables. Findings appear in deliverables D2.4 “High-tech R&D roadmap - the first version of the database” and the updated version D2.5 “High-tech R&D roadmap - the second release of the database”. The database will be continuously updated until the end of the project with specific results of cooperation with vendors.



<i>Short description</i>	<i>Involved partners</i>	<i>Corresponding KPIs</i>	<i>Achievements</i>
<i>Cooperation with vendors is very important for potential planning of PPI-related projects. The consortium would like to formalize this collaboration with vendors by signing NDAs to access confidential materials, which are not publicly available on the vendors' websites.</i>	PSNC, CESNET, GRNET	Number of NDAs signed between the consortium members and vendors: 2	Number of NDAs signed between the consortium members and vendors: 2, namely ECI Telecom and Coriant
<i>Indicative number of vendors which have been analysed and described in the technical deliverables</i>	PSNC, CESNET, GRNET	Number of vendors described in High-tech R&D roadmap reports: 5	Number of vendors described in High-tech R&D roadmap reports: 5

## 5 Conclusions

This document reports the COMPLETE dissemination and collaboration activities during the first eighteen months of the project. The following table presents the COMPLETE dissemination achievements with reference to the KPIs defined at the deliverable D3.1. “Dissemination & Collaboration Plans”.

<b>KPI</b>	<b>Target</b>	<b>Achievement</b>	<b>KPI fulfillment percentage</b>	<b>Notes</b>
<i>Number of attended events</i>	14	15	107,1%	
<i>Number of booths in events</i>	2	3	150%	
<i>Number of talks in events</i>	3	1	33,3%	
<i>Number of vendors approached (in discrete events)</i>	24	46	191,6%	
<i>Unique visitors in events</i>	630	1000	158,7%	
<i>Number of posters in events</i>	3	3	100,0%	One extra poster (instead of a paper) and one poster not achieved. In total the plan has been achieved.
<i>Number of papers</i>	1	0	0%	
<i>Collaboration with other projects working on PCP/PPI</i>	1	1	100%	
<i>Number of NRENs which received information about upcoming PCP/PPI-</i>	5	8	160%	

<i>related opportunities for NRENs.</i>			
<i>Number of contacted local public network operators</i>	3	3	100%
<i>Number of NDAs signed between the consortium members and vendors</i>	2	2	100%
<i>Number of vendors described in High-tech R&amp;D roadmap reports</i>	5	5	100%

As shown at table above, almost all the target KPIs were fulfilled and most of the them by more than 100%. COMPLETE partners managed to achieve most of the dissemination targets by participating to 15 discrete events in the area of optical communications and advanced network services. During these events, COMPLETE partners had the opportunity to meet representatives of potential users of the COMPLETE platform and vendors. It should be noted that the table does not capture the dissemination activities that occurred via the regular GÉANT meetings; at these meetings COMPLETE partners' representatives had the opportunity to present the project scope and results to all GÉANT members.

## PARTNERS

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**CESNET**, association of legal entities, was held in 1996 by all universities of the Czech Republic and the Czech Academy of Sciences. Its main goals are:

- operation and development of the Czech NREN
  - research and development of advanced network technologies and applications
  - broadening of the public knowledge about the advanced networking topics
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**GRNET S.A.** provides Internet connectivity, high-quality e-Infrastructures and advanced services to the Greek Educational, Academic and Research community. The GRNET backbone interconnects all universities and technological institutions, and many research institutes, as well as the public Greek School Network. The GRNET network is present in global networking for research and education, representing Greece in the Pan-European GÉANT network. GRNET's vision is the development of Education and Research in Greece along with the equal involvement of the R&E communities in the Pan European society of Knowledge, with the provision of modern, advanced and reliable Internet services to all Educational and Research Institutions.

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**PSNC** is the operator of the National Research and Education Network in Poland. The Polish NREN, PIONIER, a nationwide broadband optical network for e-science, represents a base for research and development in the area of information technology and telecommunications, computing sciences, applications and services for the Information Society. It connects 21 Academic Network Centres of Metropolitan Area Networks (MANs) and 5 of the HPC (High Performance Computing) Centres using their own fibre connections in all regions in Poland.