Document Properties

Document Number:	D 6.2
Document Title:	**NetIDE Preliminary Dissemination and Exploitation Plan**
Document Responsible:	Elio Salvadori (CN)
Document Editor:	Matteo Gerola (CN)
Authors:	Elio Salvadori (CN) Matteo Gerola (CN) Kévin Phemius (THALES)
Target Dissemination Level:	PU
Status of the Document:	Final
Version:	1.1

Production Properties:

Reviewers:	Alexander Leckey (Intel); Elisa Rojas (IMDEA)

Document History:

Revision	Date	Issued by	Description
0.01	2014-05-15	Matteo Gerola	Creation of the document
0.02	2014-05-25	Elio Salvadori and Kévin Phemius	First release of Ch.2 and 3
0.1	2014-06-06	Elio Salvadori and Kévin Phemius	Incorporating comments from internal reviewers
1.0	2014-07-15	Matteo Gerola and Kévin Phemius	Incorporating comments and finalizing the document
1.1	2014-10-31	Elio Salvadori and Matteo Gerola	Further edits based on official review report

Disclaimer:

This document has been produced in the context of the NetIDE Project. The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2010–2013) under grant agreement n° 619543.

Abstract:

This report describes provides an initial framework for dissemination activities and the set-up of dissemination tools, as well as the exploitation plan.

Keywords:

networking, SDN, future internet, dissemination, exploitation

Contents

List of Figures

List of Tables

List of Acronyms

IRF Intermediate Representation Format

NetIDE NetIDE

SDN Software Defined Networking

RTD Research and Technological Development

NFV Network Function Virtualization

NFaaS Network Functions-as-a-Service

RAN Radio Access Network

RANaaS RAN-as-a-Service

SaaS Software-as-a-Service

PaaS Platform-as-a-Service

NaaS Network-as-a-Service

IaaS Infrastructure-as-a-Service

BYOD Bring your own device

SLA Service Level Agreement

EPL Eclipse Public License

Executive Summary

This deliverable provides an initial framework for dissemination activities and describes the set-up of dissemination tools. It also provides information about a preliminary exploitation plan.

1 Introduction

NetIDE project has the potential to significantly advance the state-of-the-art in methodology and tools to accelerate the development and deployment of network applications and internet services relying on such applications.

The dissemination and exploitation activities therefore provide the means to maximize the uptake, impact, and outreach of the projects Research and Technological Development (RTD) and demonstration activities through an active communication strategy, presence in various media, and with a variety of means. To achieve this objective, the consortium will gradually build up a community to be first informed and convinced about the value of the NetIDE outcomes. This is to be followed by strategies highlighting the project outcomes potentials, in order to show the value of adopting them. This all serves the purpose to exploit project results and ensure impact beyond the end of the project.

The point of the community building process is to go beyond just distributing the results through usual dissemination channels. It is aiming at more intense and more interactive involvement of relevant stakeholders. Two major target stakeholder groups for dissemination and exploitation are the research, academia and non–profit public institutions on one hand, and a wide range of industrial players on the other hand (including, but not limited to, Application Providers, Cloud Vendors, Network Operators, Infrastructure Operators, and Network Solution providers). Community building and exploitation of NetIDE foreground will be tailored from the start of the project to fulfill the different needs and expectations of these different target audiences.

The approach to dissemination and exploitation activities is based on a systematically planned and interlinked activities outlined in two plans:

- A Community Building Plan, focused on communicating the project objectives and results to stakeholders beyond the consortium and building a community of researchers and practitioners around the project through various training activities and sharing the results, methods and tools;
- A sustainability model and Exploitation Plan, aimed at integrating the experiences and lessons learned from NetIDE use cases implementation and identifying the opportunities for the technology and commercial use of the knowledge and intellectual property derived from the project outcomes. These plans will be outlined and updated regularly to ensure that relevant advancements in research and industry as well as market trends are taken into account.

The deliverable is structured as per the following description. Section 2 presents an overview of the dissemination of the NetIDE results by devoting several sub-sections to expose: the dissemination strategy, the corporate identity of NetIDE project, the appearance and functionalities of the NetIDE project website and the accomplished dissemination activities until now (press releases; publications of technical and specialized articles; contributions to conferences, workshops or symposiums). Section 3 describes the exploitation plan in the framework of NetIDE project. Section 4 presents the most relevant conclusions that have supported the creation of this report.

2 Dissemination of the NetIDE Results

This section presents several issues concerning the dissemination of the NetIDE results. In the first place, an overview of the dissemination strategy, which will be followed throughout the project lifetime, is exposed to facilitate the understanding of this deliverable. Then, the second subsection presents the corporate identity of NetIDE project. Finally, there is an overview of the NetIDE website together with the most relevant sections and menus.

2.1 Dissemination Strategy

The NetIDE strategy to tackle dissemination effectively is realised by setting up a Community Building Plan which will be guided by the following objectives:

- Raise awareness amongst SDN researchers and practitioners and general audience with respect to NetIDE objectives, activities, outputs and benefits thereof;
- Make NetIDE results and derivative content tailored for various target audiences available online via the community web site and activate multiple community dissemination channels;
- Promote intention of target audiences to take advantage of the NetIDE projects outcomes and identify potential new stakeholders for project results adoption;
- Share know-how and experience with respect to NetIDE prototyping between research and industrial communities to create new value and foster innovation;
- Support the conception and implementation of the exploitation plan.

To achieve these objectives, the consortium is going to deliver different contents for its audiences through a multitude of dissemination channels and instruments, as outlined below.

Web site. A comprehensive web site, supported by a database-driven content-management and dynamic web publishing backend, will be the projects focal point for continuous public on-line presence and dissemination. For more details, pls refer to Sect. 2.3.

Printed material. Project posters and printed brochures/flyers to include a brief description of the project, its outputs, stakeholders and benefits, written in popular language and style to target all audiences, will be prepared to be presented and distributed at scientific, industry, and community events. For more details, pls refer to Sect. 2.4.

Scientific publications and conferences participation. All partners will actively pursue opportunities to publish the NetIDE results in relevant high quality international journals, conferences and workshops to achieve high visibility and recognition of project results. Taking a guest editor role for journal special issues and feature topics around NetIDE topics is also considered as one of the goals, and it will be facilitated by partners involvement in editorial boards. Active participation in conferences and workshops will also extend to technical programme committee activities, organizing dedicated workshops, special sessions, and industry lectures for technical audience. Several partners in NetIDE have a proven record of successfully conducting such activities (CREATE-NET, UPB, IMDEA, TID, INTEL). The relevant events and journals targeted for scientific dissemination are listed in 2.1.

Table 2.1: Target conferences and journals

Name of event	Key impact and target audience / communities
Conferences	**Key impact: global dissemination and promotion of S&T results in targeted audience**
Hot Topics in Software Defined Networking (HotSDN) `http://conferences.sigcomm.org/sigcomm/2013/hotsdn.php`	Linked with ACM SIGCOMM conference, HotSDN is the most relevant ACM venue on Software Define Networking
USENIX Symposium on Networked Systems Design and Implementation (NSDI) `https://www.usenix.org/conference/nsdi13`	Among the most relevant ACM venues on networking topics
European Workshop on Software Defined Networks (EWSDN) `http://www.ewsdn.eu/`	The most relevant European scientific venue on Software Define Networks
ACM SIGCOMM, ACM CoNext, IEEE Infocom	General flagship conferences in the networking area
European research events	**Key impact: dissemination of S&T results within ERA; EU research showcasing and global positioning**
Future Internet Assembly (FIA) `http://www.future-internet.eu/home/future-internet-assembly.html`	Over 2000 participants, mainly ICT research community under European Framework Programme. CREATE-NET, through INFINITY and XIFI, is actively involved.
European Conference on Networks and Communications `http://www.eucnc.eu/`	Once known as FUNEMS (Future Network &Mobile Summit), this event attracts over 500 delegates from industry and research; networking, business &collaboration opportunities for international research.
Future Internet Cluster Concertation Meetings `http://cordis.europa.eu/fp7/ict/future-networks/events_en.html`	Clusters from ongoing FP7 projects funded under the Future Networks objective; exchange of results and achievements, and building consensus.
Journal	**Research Topic**
ACM Transactions on Internet Technology	General
IEEE Communications Magazine	General
ACM Transactions on Software Engineering &Methodology	Software Engineering
ACM Transactions on Programming Languages &Systems	Software Engineering
IEEE Transactions on Software Engineering	Software Engineering
IEEE Network	Networking
IEEE/ACM Transactions on Networking	Networking
Computer Networks	Networking
Journal of Computer Networks and Communications	Networking
International Journal of Network &Mobile Technologies	Networking

Figure 2.1: Logo of NetIDE project

Liaisons with other EU funded projects and participation at EC research showcase meetings. The consortium will actively seek collaboration with related European ICT research projects and participate in relevant events (e.g. Future Internet Assembly, European Conference on Network and Communication, Future Internet (FI) concertation meetings, NetWorld2020 - meetings) in order to keep track of and align NetIDE activities with other research initiatives. We will liaise with related EC co-funded projects (both projects that have been running for some time, i.e. those of Objective *ICT-2011.1.1 Future Networks*, and other relevant objectives, e.g., *ICT-2011.1.2 Software Engineering, Services and Cloud Computing* and Objective *FI.ICT-2011.1 Future Internet Public Private Partnership* as well as the more recent ones and the one that will be funded as a result of the first H2020 Call). Special emphasis will also be put on liaising with relevant national projects and initiatives. Opportunities for liaison with partners running FP7 projects are listed in Table 2.2.

Industry and business community dissemination links. NetIDEs large industrial partners (TID, INTEL, FTS, THALES) have a multitude of internal dissemination links and activities (internal workshops and publications) within their respective global organizations (thousands of ICT professionals), as well as extensive networks of external business partners around the world. They will be used to promote project outcomes with global visibility. Opportunities for dissemination with industrial partners organisations are listed in Table 2.3.

Top industry events. Participation of NetIDE consortium partners in international industry related events such as industry congresses, exhibitions and fairs will aim at demonstrating selected results that provide solutions to industry needs to other players. For example, TID is one of the main promoter of the SDN World Congress, largest world wide industrial event on SDN and related standardization activities. Relevant Industrial events are listed in Table 2.4.

2.2 Corporate Identity of NetIDE Project

A corporate image was designed at the beginning of the project and it was officially presented in the NetIDE website in the month 3 (14th March 2014). In this way, the project can be easily identified and the dissemination activities can be much more efficient. As it can be seen in Figure 2.1, the corporate logo shows the short name (acronym) of the project as well as some wire-shaped elements that represents the connection between networks and software.

The different dissemination materials (deliverables, flyers, leaflets, power point presentations (see Figure 2.2) will have this logo and their designs will be in line with the colours chosen for the corporative image. In addition, the logo of the European flag will be included in the design or at the bottom of all project communication materials, and the sentence funded by the Seventh Framework Programme of the European Commission will also be included.

2.3 NetIDE Website

On March 14th 2014 NetIDE (NetIDE) launched its public project website (`http://www.netide.eu`). The website was developed by CREATE-NET and all administration tasks are under CREATE-NET web-team responsibility. The website is the first place for dissemination of the NetIDE results:

Table 2.2: Projects for liaison

Ongoing FP7 project	Potential collaboration and cross-dissemination
OFELIA http://www.fp7-ofelia.eu/	OFELIA is a FIRE research project that aims at creating a unique experimental facility that allows researchers to not only experiment "on" a test network but to control and extend the network itself precisely and dynamically. The OFELIA facility is based on OpenFlow, a networking technology that allows virtualization and control of the network environment through secure and standardized interfaces. CREATE-NET is actively participating to the project. NetIDE will access and use OFELIA facility to test its developments.
ALIEN http://www.fp7-alien.eu/	ALIEN is delivering an innovative network abstraction mechanism targeting the control and management convergence and interoperability of heterogeneous network elements building strong foundations for Software Defined Networks. ALIEN project aims at experimentally verify its solution for controlling the forwarding behaviour of both OpenFlow and non-OpenFlow capable hardware. CREATE-NET is actively participating to the project. NetIDE may leverage on some of the abstraction mechanisms solution proposed within ALIEN if considered useful.
XIFI http://www.fi-xifi.eu/	XIFI is delivering a federation of infrastructures and an associated marketplace for large trials of Future Internet applications and services. In XIFI a number of nodes, that will build the federation, include SDN environments, where XIFI will provide an abstract view of the controllers. TID, THALES and CREATE-NET are actively involved in XIFI. NetIDE may leverage on experimental capacity provided by XIFI to test its developments.
FI–WARE http://www.fi-ware.eu/	FI–WARE provides the Future Internet Core Platform: an ecosystem of services that will boost the economy of business in Europe. Services envisioned by FI–WARE includes the "Network Information Control (NetIC)" Generic Enabler which is intended to provide abstract access to heterogeneous open networking devices, including OpenFlow appliances. TID is coordinator of FI–WARE project and THALES is as well involved. NetIDE will provide a IDE environment that may potentially support NetIC service programming and facilitate FI–PPP network developers activities.
T-NOVA http://www.t-nova.eu/	T-NOVA will design and implement a management/orchestration platform for the automated provision, configuration, monitoring and optimization of Network Functions-as-a-Service (NFaaS) over virtualised Network/IT infrastructures. T-NOVA has an activity on tools to improve development methodologies in SDN/NFV settings. NetIDE will interact with T-NOVA to analyse potential synergies and opportunities for joint collaborations.
UNIFY http://www.fp7-unify.eu/	UNIFY will research, develop and evaluate means to orchestrate, verify and observe end-to-end service delivery from home and enterprise networks through aggregation and core networks to data centres. WP3 (Service Programming, Orchestration and Optimization) will enable the integration of Application Programming Interfaces (APIs), by delivering the functional specifications of the necessary advanced programming languages and algorithms. There may be some opportunities of collaborations between NetIDE and UNIFY on such topics of common interest.
SECURED http://www.secured-fp7.eu/	SECURED will propose an innovative SDN-based architecture to achieve protection from Internet threats by offloading execution of security applications into a programmable device at the edge of the network such as a home gateway or an enterprise router. Some of the use cased investigated within SECURED may be of interest within NetIDE and therefore there may be some opportunities of collaboration.
MCN mobilecloud.eu/	MobileCloud exploit Cloud Computing as infrastructure for future mobile network deployment and operation.
iJOIN http://www.ict-ijoin.eu/	iJOIN introduces the novel concept RAN-as-a-Service (RANaaS), where Radio Access Network (RAN) functionality is flexibly centralised through an open IT platform based on a cloud infrastructure. iJOIN aims for a joint design and optimisation of access and backhaul, operation and management algorithms, and architectural elements, integrating small-cells, heterogeneous backhaul and centralised processing.

Table 2.3: Industrial internal dissemination opportunities

Name	Short description
Research@Intel	It is a press and media oriented event which showcases selected research initiatives, is held annually in the US and in Europe.
Intel Developer Forum	This forum is held in US and Asia and showcases new product developments and pipeline research projects.
Intel Cloud Services Lab	This lab has used all of these events to share details and results of FP7 and other collaborative research.
Thales Techno Days	This event will provide highly interesting opportunities to disseminate NetIDEs achievements inside Thales and to Thales main clients.

Table 2.4: Industry events

Industry Events and Exhibitions	Key impact: high visibility, potential impact and trend-setting
Open Networking Summit `http://opennetsummit.org/`	Last years Open Networking Summit was a sold out event and established the summit as the premier event for OpenFlow and SDN. More than 900 people attended with an additional waiting list of more than 200 people.
Mobile World Congress `http://www.mobileworldcongress.com`	Mobile Developers and Devices Congress. Nearly 1,500 exhibitors participated in 2012 edition. CREATE-NET and TID, through FI-PPP initiative are active participants to the event.
SDN World Congress `http://www.layer123.com/sdn`	One of the most relevant conferences on SDN in Europe. The 2012 edition included the first announcement of the NFV ESTI ISG. TID takes an active part, being member of the Advisory Board

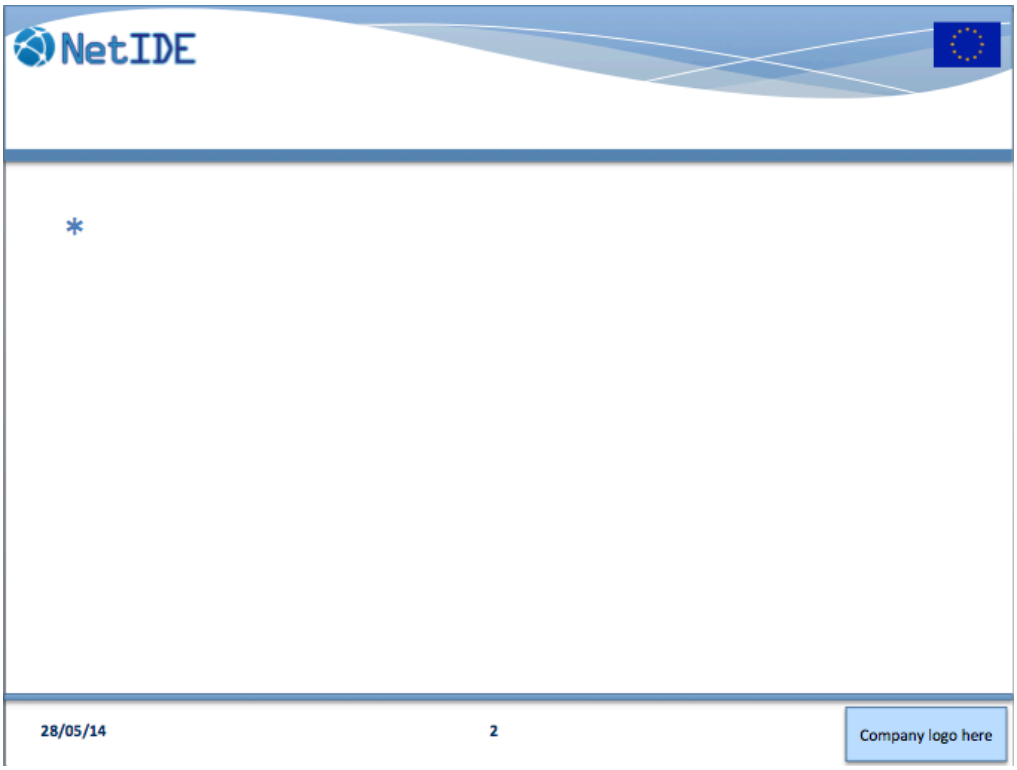

Figure 2.2: Powerpoint template of NetIDE project

Figure 2.3: Homepage of NetIDE website

i) it presents the newest information from the project, ii) offers information of the project activities and partners and iii) allows project document download.

The NetIDE website is based on Drupal and is hosted on the CREATE-NET server farm.

NetIDE website is divided into 5 main parts:

1. **Project overview:** within this menu it is possible to get into a brief summary of the project, objectives, information concerning work-packages, an overview of the project schedule and the main contacts. It's further split in:
   - Abstract: general information about NetIDE project
   - Objectives: list of major objectives of the project
   - Approach: how the project intends to address the NetIDE objectives
   - Impact: the expected impact of NetIDE
2. **Partners:** information about partners within NetIDE consortium
3. **Project news:** central place for new content publications and announcements
4. **Outcomes:** information about published papers, released deliverables, open-source tools released.
   - Publications: this menu brings together the different publications that have arisen in the NetIDE framework. It appears a chronologically-ordered list with the events which publications belong to.
   - Documents: deliverables, presentations, promotion material
   - Tools: links to open source repositories

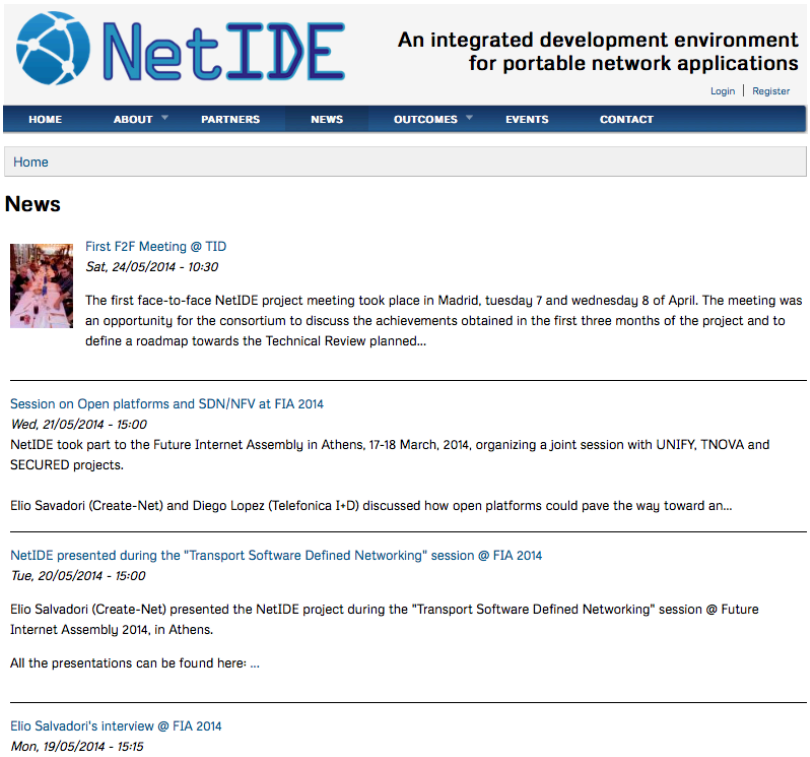

Figure 2.4: NetIDE news webpage

5. **Events:** information about organized workshops, project meetings, public demonstrations or NetIDE participation on conferences

The project website has also the Contact section with an e-mail and a phone number to the Project Coordinator.

Apart from these menus, in the homepage it is possible to keep in touch with the last news, and to connect with some social media like Twitter, Facebook and LinkedIN.

2.4 Printed Media

The main aim of this type of disseminative material is to reach wider audiences and to disseminate NetIDE results successfully. Hereinafter, there is a description of the most relevant printed media contributions that have been realized throughout the first project semester:

- Leaflet: a project brochure has been elaborated summarizing the general information about the NetIDE concepts and its objectives, and about the consortium. The brochure will be used as standard dissemination tool during conferences, events and fairs in which NetIDE project will be advertised.

- Poster: the principal aims of the project have been brought together in a poster with graphs and pictures, which can be used in workshops, conferences, fairs and exhibitions. Until now the poster has been presented at FIA 2014 in Athens.

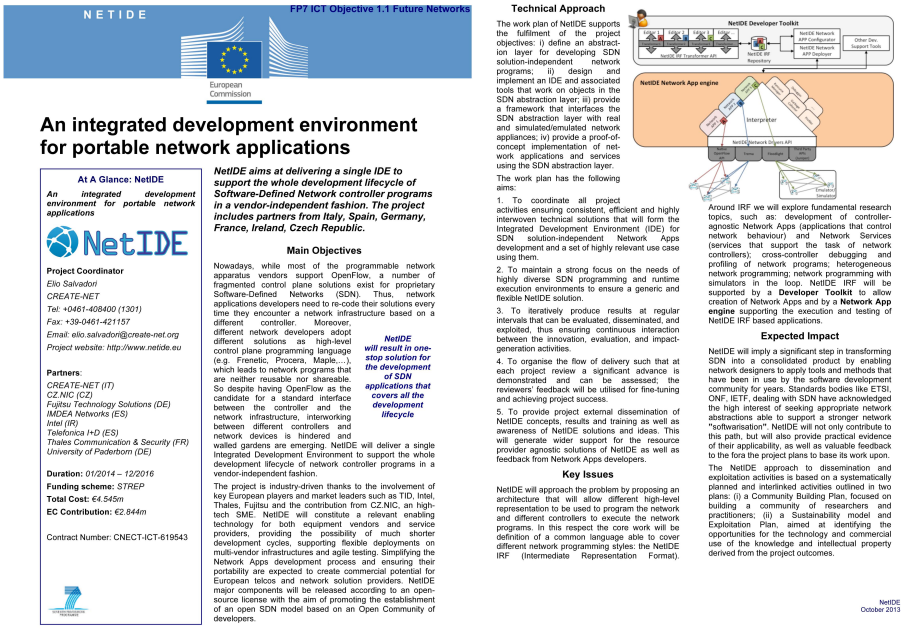

Figure 2.5: NetIDE leaflet available from the EC website

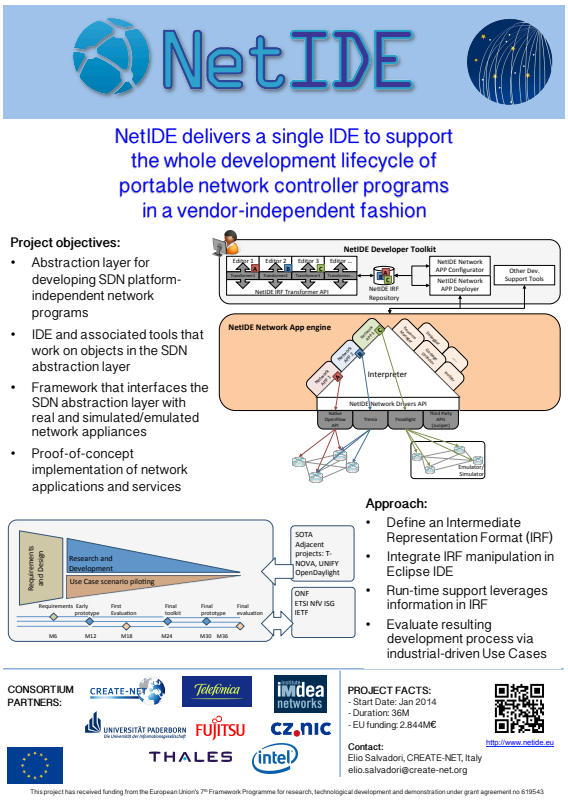

Figure 2.6: NetIDE poster

2.5 Accomplished Dissemination Activities

2.5.1 Contributions to conferences, workshops and symposiums

CONTRIBUTIONS TO DISSEMINATIVE EVENTS				
EVENT	**LOCATION**	**DATE**	**TITLE**	**PARTER INVOLVED**
EWSDN 2013	Berlin (D)	10-11 October 2013	NetIDE: First steps towards an integrated development environment for portable network apps	NetIDE Consortium

2.5.2 Other dissemination activities

Next table contains a list of other dissemination activities that have been undertaken during the NetIDE project lifetime.

OTHER DISSEMINATION ACTIVITIES			
DATE OF APPEARANCE	**EVENT**	**TYPE OF ACTIVITY**	**PARTICIPANT PARTNER**
January 2014	CityFlow SDN Concertation Workshop	Project Presentation	Telefonica I+D
March 2014	IETF London meeting	Project Presentation to the IRTF SDN research group	Telefonica I+D
March 2014	FIA 2014 Athens	Project Presentation to the "Open platforms and SDN-NFV" session	CREATE-NET and Telefonica I+D
March 2014	FIA 2014 Athens	Hosting of a joint session with T-NOVA, UNIFY and SECURED	NetIDE Consortium
June 2014	EuCNC 2014 Bologna	Hosting of a joint session with T-NOVA	NetIDE Consortium

3 Exploitation Plan

One of the key issues is to identify market niches and potential early adopters of the NetIDE solution so as to steer, since the beginning of the project, the results of the project towards commercial industrial applications and common joint exploitation strategy. Simplifying the Network Apps development process and ensuring their portability are expected to create commercial potential for EU telcos and EU network solution providers. The industrial exploitation activities in NetIDE are guided by the following objectives:

- Continuously scanning and analyzing the market for Software Defined Networking solutions that would benefit from NetIDE outcomes;
- Establish industry advisory board including representative of the business units of the industrial partners which are members of the project to support and steer NetIDE results exploitation;
- Monitor and participate in standardization activities related to Software Defined Networking and identify the potential contributions of NetIDE to such activities;
- Define strategies for exploitation and uptake of NetIDE's results.

Within the exploitation plan we will define a concrete strategy for the software governance of Open Source results released by NetIDE. The selection of the governance model will be defined carefully taking into consideration several dimensions that are related to the project. Research results will be exploited towards the NetIDE consortium partners internal knowledge and expertise building, and development and support of new products and services.

According to multiple reports [1] [2], 2013 spending in IT exceeded $2.1 trillion, up 5.7% from 2012, driven by double-digit growth in the 3rd Platform foundations of mobile (smartphone, tablest, wearable tech,...), cloud (Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), Bring your own device (BYOD)), Big Data, and social technologies and by emerging markets' growth where IT spending expected to grow by 8.8% to over $730 billion. Server virtualization (which can scale easily allowing companies to not over invest and react quickly to the market), Cloud computing (which cant free small and big companies from costly infrastructure expenditure), IT convergence (which remove boundaries between areas of IT) and Venture capital (with their ability to finance small startups that can disrupt markets) are key points in the future of IT.
The impact of Software Defined Networking (SDN) will exceed $25B per annum by 2018, and could grow as high as $35B annually. Even conservative models show SDN-related spend exceeding 30% of total networking in that time-frame, with more aggressive models topping out at 40%.
Driven primarily by network virtualization, the emerging datacenter controller and applications market could grow to $1B annually within six years. While trying to position ourselves in the hyper competitive SDN hardware is difficult, the need to develop network application for SDN network is evident and NetIDE could be the platform to write such apps.

3.1 Exploitation Strategy

The exploitation plans for industrial partners naturally differ from those specific to research and academic partners. Industrial exploitation is motivated by new products and services that lead to

a competitive advantage and have a potential to substantially contribute to the benefit of their targeted users. In addition to the common objectives, the partners also define and follow their own strategies and plans for exploitation.

3.1.1 Exploitation plan TID

TID foresees direct application of NetIDE in various aspects:

- The consolidation of Network Function Virtualization (NFV) technologies within the Telefonica networks. We plan to rely on NetIDE to facilitate rapid prototyping, design validation and direct deployment of NFV solutions, as well as to ease the integration of NFV and non-NFV elements.
- Empowering different business units with more flexible mechanisms for network infrastructure design and deployment, what will translate into shorter provision times, better infrastructure usage, stronger security and tenant separation, and a more seamless integration with computing and storage management interfaces. In a first phase, the target business unit for early NetIDE adoption will be the wholesale and the cloud services ones.
- Using NetIDE to foster open innovation. Telefonica is strongly committed to an open approach to innovation activities and to the establishment of an innovation ecosystem based on it. In particular, Telefonica is promoting technology startups through initiatives like Wayra (http://www.wayra.org/), and we foresee NetIDE supporting new business models suitable to be applicable to these initiatives, where an open-source model will play a key role to build awareness and assess applicability of new solutions.

Beyond these three concrete exploitation paths, Telefonica believes NetIDE will constitute a breakthrough in the way network infrastructures will be conceived, designed and deployed, and therefore we plan to make it the base for further research.

3.1.2 Exploitation plan FTS

Fujitsu has a business interest to reduce the cost and complexity of developing, deploying, operating and maintaining network-based applications. For this reason we have engaged in the NetIDE project which promises to develop a framework and a prototype for more efficient development tools. Fujitsu has committed to provide a use case and requirements to the NetIDE project and later to provide reporting on the usability of the NetIDE software based on practical, hands-on experience.
Fujitsu is not primarily engaged in the market for software development tools. We are primarily a user of such tools. Normally we would later look to employee NetIDE based products developed, maintained and marketed by 3rd parties.
Our early engagement in NetIDE should help ensure that later NetIDE based products meet the real needs of industrial networking application developers such as ourselves. We shall contribute to the dissemination of NetIDE by making our engagement and practical experience known to the industry.
IT solutions will benefit from SDN technologies being enabled by development frameworks like NetIDE. The FTS NetIDE-team will introduce NetIDE to its community of solution development professionals in Europe in different events such as the Fujitsu Forum which addresses IT decision-makers, data center experts and IT departments, project managers and IT architects as well as consultants and users or Fujitsu Europe Innovation Talks which are bi-weekly events in Fujitsu with Fujitsu IT Infrastructure and solution developers. They are organized to exchange about innovative IT technologies, solutions and IT development approaches.

3.1.3 Exploitation plan INTEL

In terms of exploitation, Intel will use the insights and results of NetIDE to help inform its product directions for communications infrastructure including platform optimization to support virtualized network functions. NetIDE brings together a number of the focal points of the lab, with its combination of networking, scalability, programmability, debugging (both simulated and deployed) and the design of networking as a managed computing platform.

3.1.4 Exploitation plan THALES

Internally, NetIDEs results will be presented to the business lines in charge of the Critical Information Systems and Resilient Infrastructure Networks. Thales offering relies on two interesting technological pillars:

- Cloud technologies. Thales has a network of 3,900 IT professionals and 13 Service Centres throughout France dedicated to delivering comprehensive solutions to exacting customers who want to outsource the design, development and/or operation of all or some of their information systems. High value-added results-based Service Level Agreement (SLA) shape the framework for Thales's customer commitments, which are anchored in integrity, security, availability, resilience and service continuity.

- Resilient network technologies. The many interconnections needed to exchange information can lead to greater vulnerability to intentional threats (cyberattacks, for example) and accidents such as natural catastrophes. Thaless Nexium solution consists in designing and deploying complex communications architectures that guarantee availability under all circumstances, even in crisis situations, to achieve network resilience, i.e. the capacity of networks to withstand shocks and guarantee high-level end-to-end transmissions that are efficient, dependable, secure and inter-operable.

In order to meet the growing demands of Thales customers for more distributed or hybrid (private/public) information systems with a high level of security, resilience, scalability at a lower cost, Thales has identified SDN as a key enabler for the Cloud and Nexium suites. This promising technology will allow to reduce development life-cycle, increase reactivity to incidents (e.g., cybersecurity attacks, failures), bring more controllability to customer applications (e.g., Network-as-a-Service (NaaS) APIs), and to support, through network virtualisation, multiple security levels in the same infrastructure. NetIDE will allow Thales to have a robust development ecosystem to develop these two activities.
Emerging innovative technologies are of primal importance for Thales. In this context SDN, which is an emerging networking architecture, stands as the corner stone between network management and Infrastructure-as-a-Service (IaaS) management, thus enabling NaaS. Decoupling the control plane from the hardware enables to conceive networking as software applications and NetIDE could be integrated in the development cycle of Thales' software.

3.1.5 Exploitation plan NIC

NIC will implement support for NetIDE in the open source routing daemon BIRD (http://bird.network.cz), with the goal of providing an integrated network management solution for Internet domain administrators. In particular, a routing policy expressed in the Intermediate Representation Format (IRF) format will be mapped to the configuration of the BGP protocol and corresponding route filters. CZ.NIC will also organize training in its Academy, covering both NetIDE and SDN in general.

3.2 Accomplished Exploitation Activities

Since the start of the project, the exploitation and dissemination activities already reached to multiple events. Some past events include :

- The SDN Concertation Workshop (Brussels, 30 Jan 2014) where a presentation of the extended project proposal was made.
- The IETF 90 (London, 06 Mar 2014) where a presentation of the extended project proposal was made at the IRTF - SDNRG.
- FIA Athens (Athens, 17-20 Mar 2014) where presentations were given as well as a session chairing. Additionally, a poster was exposed and flyers were distributed.

In addition, a session on SDN programming tools will be given at the EuCNC'14 (Bologna, 23 Jun 2014).

3.3 Other Exploitation Lines

Research and academic partners exploitation is oriented towards maintaining and demonstrating excellence in research as a basis for survival in a highly competitive national and international research funding arena. Academic partners also aim to exploit the research results for improvement of university curricula and continuing education programs, for attracting new MSc and PhD students, and to initiate PhD theses topics related to the project. For non-profit public institutions the exploitation is primarily internal, and aimed at providing highest quality services in the most efficient and cost-effective way.

3.3.1 Exploitation plan CN

CREATE-NET will exploit the outcomes of this project from research and innovation point of view. CN will explore how much the Application-driven framework set up by NetIDE may be exploited within the SDN/NFV market scenario. We believe the possibility to port network applications from one controller platform to another one may be of the most evident benefit of NetIDE architecture many vendors and service providers would like to make use of. We will therefore both enhance our testbed platform to run a NetIDE development environment and use it as a showroom for private stakeholders willing to verify the proposed approach. Of course through this project we will enrich our competences on SDN technologies. This will enable able us to contribute back such experience in other related activities such as green datacentre and cloud networking research, as well as in consultancy activities for industrial partners we are collaborating with (e.g. Cisco Systems, Orange-FT), willing to explore novel approaches to support SDN technologies in their products.

3.3.2 Exploitation plan UPB

The results and research questions of this project will by used by UPB for both teaching and research. The challenges arising in the networking and software engineering area can fuel several Bachelor and Master theses as well as PhD theses. Research results and the deeper understanding of the SDN domain gained in the course of the project can also be taught in lectures. We also intend to publish research papers presenting the results of the project in both research areas. For example, we can present the IRF and its transformer framework on conferences for model-driven software engineering. Also, we can discuss our efforts on debugging and performance analysis on

SDN conferences.
NetIDE also has the potential to form synergies with existing projects at our university. In particular, we will strive to use the results of the project for actual integration in the data center network of the Paderborn Center of Parallel Computing, merging SDN activities with ongoing big-data research. Also, research results from this project shall foster work in the ongoing Collaborative Research Center On-the-fly Computing (SFB 901), where it will serve as a tool to build concrete support for mutual adaptation of applications and networks.

3.3.3 Exploitation plan IMDEA

IMDEA will primarily exploit the results of this project for research. Having the IRF defined along the set of tools will serve as an impetus to continue working on the model checker and related tools. There will be also an axis in the academia world due to hand in hand collaboration with the University Carlos III of Madrid (UC3M). Having the IRF defined along the set of tools will serve as an impetus to continue working on the model checker and related tools. IMDEA will also use the results of this project and translate them to the networking courses at the UC3M in several undergraduate, master courses and research seminars. IMDEA research assistants are also UC3M Ph.D students and there is a common weekly seminar between both institutions that will serve as base for giving talks and produces high-quality Ph.D Thesis around the NetIDE technologies and results. The acquired knowledge, disseminated through publications in journals and conferences and through the participation in workshops and tutorials, will strengthen the IMDEA and NetIDE consortium standings. A further aim is to use the knowledge and experience acquired from the project and to extend it in the context of future collaborations and potential follow-up research projects. will also use the results of this project for teaching at the adjacent University (UC3M).

3.4 Selection of the open-source license

This decision is to ensure the industrial sustainability of the project results by selecting a non-commercial limiting Open Source license as agreed in the Description of Work. All partners submitted their initial proposed license with arguments for review. However, as described in [3], everyone converged to the Eclipse Public License (EPL) due to:

1. The NetIDE developer toolkit and app engine will be developed as plugins for Eclipse. An EPL decision would ensure maximum compatibility with Eclipse and Eclipse-based frameworks and dependencies

2. The OpenDaylight project, which is one of our targeted frameworks for interaction that is also released under EPL

3. Other minor tools such as LOXIGEN, under investigation by the project, are released under EPL

4. Commercial friendly, weak copyleft license model appreciated by industrial partners

The next step was to create a project code header which will be added to all source code files that will be part of our solution. This is based on the EPL 1.0 license[1].

[1] `http://opensource.org/licenses/EPL-1.0`

```
/**
* Copyright (c) 2014, NetIDE Consortium (Create-Net (CN), Telefonica Investigacion
* Y Desarrollo SA (TID), Fujitsu Technology Solutions GmbH (FTS), Thales Communications
* & Security SAS (THALES), Fundacion Imdea Networks (IMDEA), Universitaet Paderborn
*
* All rights reserved.  This program and the accompanying materials
* are made available under the terms of the EPL
* which accompanies this distribution, and is available at
* http://www.eclipse.org/legal/epl-v10.html
*
* Authors:
* ...
*/
```

Github was selected as our public code repository as its basic offering allows us to create up to 4 repositories. An initial PoC repository has been created to store our proof of concepts prototypes for use case 1. Github also offers Wiki functionality which will allow us to post documentation on our code that will be publicly available. These can now be viewed at: `https://github.com/fp7-netide`.

4 Conclusion

This first report on dissemination and exploitation plan contains the most important midterm dissemination and exploitation topics in the NetIDE project.

Firstly, in Section 2 has been presented the dissemination strategy and some relevant elements of such an important plan: corporate identity of NetIDE project, NetIDE Website and printed media as well as the accomplished dissemination activities to the date.

Concerning the exploitation plan, the first strokes have been exposed in this deliverable by separating the involvement of each partner according to the profile (academic, industrial). The exploitation activities will go ahead in line with the ones already accomplished, however the exploitation plan will be improved by the activity within WP6 on the Market Analysis to increase the commercial viability of the project and then marketing of outcomes arisen the NetIDE project framework.

Bibliography

[1] Lightspeed Plexxi and SDN Central. Sdn market sizing report, apr 2013.

[2] Frank Gens. Idc predictions 2013: Competing on the 3rd platform, nov 2012.

[3] The NetIDE Consortium. MS6.2. Decision on open-source licence model, Jun 2014.