



TNOVA

NETWORK FUNCTIONS AS-A-SERVICE OVER VIRTUALISED INFRASTRUCTURES

GRANT AGREEMENT NO. 619520

Deliverable D8.32

Second Report on Dissemination and Communication Activities

Editor Panagiotis Papadimitriou (LUH)

Contributors Dora Christofi (PrimeTel), Zhen Cao (LUH), Anastasios Kourtis (NCSRD), George Xilouris (NCSRD)

Version 2.0

Date January 15 , 2016

Distribution PUBLIC (PU)

Executive Summary

This document outlines the dissemination activities over the second year of the project as well as the dissemination planning for the last year. The report provides a list of all related activities including publications, presentations, and dissemination through the Internet and social media.

The project dissemination carried on according to the plan drafted by the partners and decided by the task. The project has reached in a total number of 16 publications in refereed Journals and Conferences, while a large number of publications is anticipated for the last year of the project. In fact, at least 6 papers have been already submitted in various Conferences and Journals.

Additionally, dissemination of T-NOVA was channelled through presentations or contributions to various fora and conferences throughout the year. The most notable are the presentations made at the Mobile World Congress 2015 along with a demo and at IETF 93 for NFV RG where a presentation was given.

Academia partners managed to organised a series of Workshops for NFV and SDN, involving various stakeholders in focused discussion on the T-NOVA area of interest. A series of presentation, demos and newsletters where disseminated in all the attended events and communication channels available.

Finally, through the common partners participating in the 5G-PPP projects or other H2020 projects, T-NOVA is already disseminating its innovations, expertise and components.

Table of Contents

| 1. INTRODUCTION | 6 |
|--|--|
| 2. DISSEMINATION STRATEGY | 7 |
| 2.1. DISSEMINATION AND COMMUNICATION TOOLS | |
| 2.2. LIAISONS WITH OTHER PROJECTS | |
| 2.3. SCIENTIFIC JOURNALS | |
| 2.4. International Conferences | 9 |
| 2.5. Network of Interest (NoI) | |
| 2.6. Individual Partner Dissemination Activities | |
| 2.7. DISSEMINATION KPIS | 11 |
| 3. DISSEMINATION AND COMMUNICATION ACTIVITIES DURING THE SEC | OND |
| | |
| PERIOD | 13 |
| PERIOD | |
| | 13 |
| 3.1. PUBLICATIONS IN CONFERENCES AND JOURNALS | 13 15 |
| 3.1. Publications in Conferences and Journals | 13 15 16 |
| 3.1. Publications in Conferences and Journals 3.2. Dissemination through Presentations in various events and fora/SDOs . 3.3. Conference/Workshop Organization | 13 15 16 16 |
| 3.1. Publications in Conferences and Journals 3.2. Dissemination through Presentations in various events and fora/SDOs . 3.3. Conference/Workshop Organization 3.4. Articles, Magazines, and other Presentations | 13 15 16 16 18 |
| 3.1. PUBLICATIONS IN CONFERENCES AND JOURNALS | 13 15 16 16 18 19 |
| 3.1. PUBLICATIONS IN CONFERENCES AND JOURNALS | 13 15 16 16 16 18 19 19 |
| 3.1. PUBLICATIONS IN CONFERENCES AND JOURNALS | 13 15 16 16 18 19 19 19 19 |

| 3.7.2.2. LinkedIn | |
|-----------------------------------|----|
| 3.7.2.3. Slideshare | |
| 3.8. Internal Activities | |
| 3.8.1. Wiki | |
| 3.8.2. Mailing Lists | |
| 3.8.3. F2F Meetings | |
| 3.8.4. Conference Calls | 22 |
| 4. FINAL YEAR DISSEMINATION PLANS | |
| 5. CONCLUSION | |
| LIST OF ACRONYMS | |
| ANNEX | |
| | |

Table of Figures

| Figure 1: T-NOVA Dissemination | 7 |
|--|---|
| Figure 2: T-NOVA dissemination & communication tools | 8 |
| Figure 3: Card - Front | |
| Figure 4: Card - Back | |
| Figure 5: Presentations to Mobile Industry | |
| Figure 6: T-NOVA Website Google Analytics Stats | |
| Figure 7: T-NOVA Website Google Analytics Visitor Location | |
| Figure 7: T-NOVA Twitter account | |
| Figure 8: T-NOVA LinkedIn account | |

Table of Tables

| Table 1: Scientific Journals | 9 |
|--|----|
| Table 2: International Conferences | 9 |
| Table 3: Partners' Dissemination Plans | 10 |
| Table 4: Dissemination KPIs | 12 |
| Table 5: T-NOVA papers published or accepted by conferences and journals | 13 |
| Table 6: T-NOVA papers submitted to conferences and journals | 14 |
| Table 7: Dissemination through presentations | 15 |
| Table 8: Achieved Dissemination KPIs | 19 |
| | |

1. INTRODUCTION

Dissemination of the project results to a wider audience is one of the primary aims of T-NOVA. We have been pursuing communication and dissemination through the dual avenues of publications/presentations and Internet/social media.

Over the second year, the project results have been presented in several international conferences, workshops, and journals, including established and reputable venues, such as IFIP Networking, IEEE COMSNETS, IEEE Transactions on Network and Service Management, as well as the new IEEE-sponsored conference on NFV-SDN.

Additional presentations have been given by T-NOVA partners at various events, such as NetFutures in Brussels and IRTF NFVRG meetings. The T-NOVA demo has been further showcased at several venues, such as NetFutures 2015, IEEE NFV-SDN 2015, and ICT 2015. Furthermore, T-NOVA partners have been involved in conferences and workshops organization, such as the NFV workshop in Hannover in October 2015, the IEEE International Workshop on Software-Driven Flexible and Agile Networking (SWFAN) that will be co-located with INFOCOM 2016, the workshop on NFV and Programmable Networks co-located with EuCNC 2015, and the Wired/Wireless Internet Communications (WWIC) conference that will take place in Thessaloniki in May 2016. We have also taken advantage of Internet and social media (*i.e.*, LinkedIn, Twitter) to further increase the project visibility and establish communication channels with the academic and industrial community.

In this deliverable, we provide an overview of the project dissemination activities during the second year of the project. We further present our dissemination plan for the final year of the project.

2. DISSEMINATION STRATEGY

Communication and dissemination activities are important enablers in ensuring appropriate visibility and maximising benefits of FP7 funded research to the European scientific community. These activities are focused on generating an effective flow of information and publicity regarding the target objectives, the key project contributions, and the benefits to EU citizens as well as the collaboration on Europe-wide scale.

The T-NOVA dissemination strategy consists of internal and external activities.

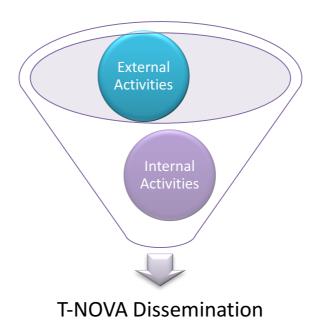


Figure 1: T-NOVA Dissemination

External dissemination is focused on the industrial and academic communities both in Europe and internationally, while spanning across individual researchers, providers, end-users, and stakeholders involved or interested in the T-NOVA concept. External dissemination includes the project's website, scientific publications, project presentations, participation in conferences and organization of events, such as workshops.

Internal dissemination encompasses all the activities carried out between the consortium members. Such activities include mailing lists, plenary and technical meetings, conference calls, online tools, common documentation, and deliverables.

2.1. Dissemination and Communication Tools

The following figure illustrates the dissemination and communication tools which are currently used to disseminate the project's results.

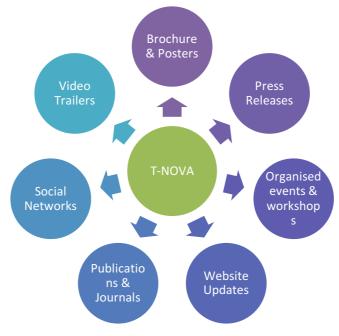


Figure 2: T-NOVA dissemination & communication tools

2.2. Liaisons with other Projects

Within T-NOVA's plans are the selection of a number of projects with relevant objectives and the establishment of a continuous link with them, through the following activities:

- Bi-lateral discussions between participants of T-NOVA and other projects in order to develop a common understanding of potential synergies.
- Exchange of technical information in order to identify the common areas of R&D for which both T-NOVA and other projects have interest and mutual benefit.
- Organisation of joint workshops preferably at the side lines of conferences in areas of mutual interest.
- Common participation in conferences/workshops in order to inform the wider scientific community about the key outputs and planned activities of the projects.
- Exchange of non public deliverables and focused discussions on possible reuse of components.
- Providing access to technical results of other projects in order to properly adapt them for the needs of T-NOVA, as well as to tools and results from T-NOVA to other projects.
- Participation of T-NOVA consortium members in technical meetings of other projects and vice versa.

The consortium identified two EU projects that are thematically relevant to T-NOVA, namely UNIFY and NETIDE. Engagement with these two projects has already been initiated before the official starting date of T-NOVA, under the encouragement of the EC.

2.3. Scientific Journals

The following table provides a list of scientific journals with high impact factor that will comprise submission targets for the T-NOVA architecture and results.

| Journal | Publisher | Thematic Area | Journal Information |
|---|-----------|--------------------|---|
| IEEE Communications Magazine | IEEE | Networking | dl.comsoc.org/ci1/ |
| IEEE Network Magazine | IEEE | Networking | <u>www.comsoc.org/net</u> <u>mag</u> |
| IEEE Transactions on Network and Service Management | IEEE | Network Management | <u>http://www.comsoc.or</u> g/tnsm |
| Computer Networks | Elsevier | Networking | http://www.journals.el sevier.com/computer- networks/ |

Table 1: Scientific Journals

2.4. International Conferences

A list of international conferences that will be targeted by the T-NOVA consortium is shown below. Several of the targeted conferences (*e.g.* IEEE INFOCOM, IEEE COMSNETS, IFIP Networking) constitute premier venues for the publication of networking research results.

Table 2: International Conferences

| Conference | Type of Audience |
|----------------------|-----------------------|
| IEEE GLOBECOM | Research and Industry |
| IFIP/IEEE Networking | Research |
| IEEE COMSNETS | Research |
| IEEE INFOCOM | Research and Industry |
| IEEE ICC | Research and Industry |
| IEEE NFV-SDN | Research and Industry |

2.5. Network of Interest (NoI)

The dissemination activities planned in the T-NOVA project aim to foster collaboration opportunities, exchange knowledge, and raise awareness among a large group of stakeholders and players in the NFV and SDN domains.

More specifically, the T-NOVA NoI should include actors from the industry and SMEs. It will be enriched by stakeholders from public bodies, European Commission representatives, press and media organisations, academic and research institutions and other related EU projects. The T-NOVA consortium has already identified potential collaboration opportunities; promote the T-NOVA project and results while helping to develop synergies between related initiatives in order to expand the project's Network of Interest.

2.6. Individual Partner Dissemination Activities

Besides publications of project results in conferences and journals pursued by all partners, we provide a list of additional planned dissemination activities on a per partner basis:

| Activity | Partner |
|--|---------|
| Preparation and submission of technical papers to international scientific journals of high impact factor | ALL |
| Participation in seminars and workshops | ALL |
| Dissemination of project results in the annual Summer School in Telecommunications that is organised in its premises | NCSRD |
| Organisation of workshops in NFV | NCSRD |
| Internal bulletins, news feeds and internal networking with account managers to ensure awareness of the project and its main innovations as future assets for ATOS | ATOS |
| External reach to promote innovation and research activity through our corporate website, ARI Booklet and the ATOS' Scientific Community | ATOS |
| Publication of technical and business white papers at "ATOS Insights & Innovation" and participation in project papers. | ATOS |
| Internal dissemination within HP, through workshops/presentations, internal website, and newsletter | HP |
| Dissemination of results within Portugal Telecom group via internal workshops and technical publications | PTIN |
| Promotion of T-NOVA results through key public Intel showcase events such as the Intel Developer Forum (IDF) and Research@Intel (US and Europe annual events) | INTEL |
| Promotion T-NOVA results at industry events such as mobile world congress | INTEL |
| Promotion of T-NOVA through the PrimeTime magazine (also available online) internal newsletter and the company's website | PTL |

Table 3: Partners' Dissemination Plans

| Preparation of promotional material such as video and leaflets | PTL |
|---|---------|
| Promotion of T-NOVA through the company's quarterly SpaceTalk magazine and the company's website | SPH |
| Investigation and communication of the benefits of the T-NOVA solution as a member of the integral Satcom Initiative (ISI) European Technology Platform (http://www.isi-initiative.org) | SPH |
| Organization of a T-NOVA workshop in Athens, where attendees from local and international enterprises from the telco/networking sector will be invited to see a "hands-on" demonstration of the T-NOVA services and capabilities | SPH |
| Organization of pilot sites and demonstrations for potential clients | VIO |
| Campaigns in specialized press, testing websites (CNET, ZDNet, etc.), media shows, social networks buzz through renowned tech experts | VIO |
| Promotion of T-NOVA in MEF conferences and meetings | CLDST |
| Promotion of T-NOVA through FINT's website and news releases about project progress and related events | FINT |
| Promotion of T-NOVA through Italtel website and social networks | ITALTEL |
| Workshop organisation as part of the TEMU2014/2016 International conference (TCS by IEEE/ComSoc) | TEIC |
| Promotion of T-NOVA through TEIC's and PASIPHAE's websites, as well as through press releases related to project's activities and results | TEIC |
| Dissemination and communication of T-NOVA concept and results among students through ERASMUS Life Long Learning activities (e.g. Intensive Programmes, Summer Schools, etc.) | TEIC |
| Open-source software releases | LUH |
| Organization of demos/exhibitions of the developed systems | UNIMI |
| Dissemination of the project results among the regional members of its board | i2CAT |

2.7. Dissemination KPIs

The following table summarizes the key performance indicators (KPIs) related to the dissemination activities. These KPIs will be continuously monitored to ensure the successful accomplishment of the project's dissemination objectives.

Table 4: Dissemination KPIs

| КРІ | Target |
|--|--------|
| Number of papers published in international refereed journals | > 15 |
| Number of papers presented in international conferences | > 30 |
| Number of demonstrations in exhibitions and other events | > 6 |
| Number of workshops/meetings with liaised projects (UNIFY, NETIDE) | 4 |

3. DISSEMINATION AND COMMUNICATION ACTIVITIES DURING THE SECOND PERIOD

3.1. Publications in Conferences and Journals

Conferences, workshops, and journals are the main targets for the dissemination of scientific knowledge gained throughout the project. As such, T-NOVA has been actively seeking the publication of project results in reputable international conferences and scientific journals. Tables 5 and 6 show the papers published, accepted or submitted to conferences, workshops, and journals over the second year of the project.

| Authors | Title | Journal/Conference | Status |
|---|---|--|-----------|
| A. Abujoda and P. Papadimitriou | MIDAS: Middlebox Discovery and Selection for On-Path Flow Processing | 7th IEEE International Conference on Communication Systems and Networks (COMSNETS 2015) | Published |
| D. Dietrich, A. Abujoda, and P. Papadimitriou | Network Service Embedding Across Multiple Providers with Nestor | IFIP/IEEE Networking 2015 | Published |
| D. Dietrich, A. Rizk, and P. Papadimitriou | Multi-Provider Virtual Network Embedding with Limited Information Disclosure | IEEE Transactions on Network and Service Management, Vol. 12, No. 2, June 2015 | Published |
| A. Abujoda and P. Papadimitriou | Invariant Preserving Middlebox Traversal | 13th International Conference on Wired and Wireless Internet Communications (WWIC), 2015 | Published |
| P. Paglierani | High Performance Computing and Network Function Virtualization: a major challenge towards network programmability | IEEE BlackSeaCom 2015 | Published |
| S. Patanjali, B. Truninger, P. Harsh, and T. M. Bohnert | CYCLOPS: A Micro Service based approach for dynamic Rating, Charging & Billing for cloud | 13th IEEE International Conference on Telecommunications (ConTel), 2015 | Published |
| M. McGrath, V. Riccobene, G. | Performant deployment of a virtualised network functions in a data center | IFIP/IEEE International Symposium on Integrated Network | Published |

Table 5: T-NOVA papers published or accepted by conferences and journals

| Petralia, G. Xilouris, and M. A. Kourtis | environment using resource aware scheduling | Management (IM), 2015 | |
|--|---|---|-----------|
| B. Meszaros, P. Harsh, and T. M. Bohnert | Lightning Sparks All Around: A Comprehensive Analysis of Popular Distributed Computing Frameworks | International Conference on Advances in Big Data Analytics (ABDA), 2015 | Published |
| M. A. Kourtis et al., | Enhancing VNF Performance by Exploiting SR-IOV and DPDK Packet Processing Acceleration | IEEE SDN-NFV 2015 | Published |
| N. Herbaut, D. Negru, G. Xilouris, and Y. Chen | Migrating to a NFV-based Home Gateway: introducing a Surrogate vNF approach | 6th IEEE International Conference on Network of the Future (NoF), 2015 | Published |
| J. F. Riera, et al. | Modelling the NFV forwarding graph for an optimal network service deployment | International conference on Transparent optical networks (ICTON 2015) | Published |
| S. Battilotti, et al. | Resource Management in Multi-Cloud Scenarios via Reinforcement Learning | 34th Chinese Control Conference | Published |
| L. Zuccaro, F. Cimorelli, F. Delli Priscoli, C. Gori Giorgi, S. Monaco and V. Suraci | Distributed control in virtualized networks | 10th International Conference on Future Networks and Communications | Published |
| Y. Rebahi, S. Hohberg, L. Shi, P. Comi, B. M. Parreira, and A. Ramos | Virtual Security Appliances: The Next Generation Security | 3rd International Conference on Computing, Management and Telecommunications (ComManTel), 2015 | Published |
| A. Abujoda and P. Papadimitriou | DistNSE: Distributed Network Service Embedding Across Multiple Providers | 8th IEEE International Conference on Communication Systems and Networks (COMSNETS), 2016 | Accepted |

Table 6: T-NOVA papers submitted to conferences and journals

| Authors | Title | Journal/Conference |
|---------|-------|--------------------|
|---------|-------|--------------------|

| J. Rierra, et al. | TeNOR: Steps Towards an Orchestration Platform for Multi-PoP NFV Deployment | IEEE NetSoft 2016 |
|---|--|------------------------------------|
| G. Gardikis, et al. | An integrating framework for efficient NFV monitoring | IEEE NetSoft 2016 |
| V. Riccobene, M. J. McGrath, M. A. Kourtis, G. Xilouris, H. Koumaras | Automated Generation of VNF Deployment Rules Using Infrastructure Affinity Characterization | IEEE NetSoft 2016 |
| N. Herbaut, D. Negru, Y. C. Pantelis, A. Frangoudis, A. Ksentini | Content Delivery Networks as a Virtual Network Function: a win-win ISP- CDN collaboration | IEEE NetSoft 2016 |
| Z. Cao, A. Abujoda, and P. Papadimitriou | Distributed Data Deluge (D3): Efficient State Management for Virtualized Network Functions | IEEE INFOCOM SWFAN 2016 |
| M.A. Kourtis, et al. | Reduced-Reference Video Quality Assessment using a Static Video Pattern | SPIE Journal of Electronic Imaging |

3.2. Dissemination through Presentations in various events and fora/SDOs

The T-NOVA concept, architecture, and project results have been presented at the events shown in the following table.

Table 7: Dissemination through presentations

| Event | Location | Date |
|--|---------------------------|----------------|
| Innovation in the Cloud | Lisbon, Portugal | January 2015 |
| Mobile World Congress | Barcelona, Spain | February 2015 |
| NetFutures | Brussels, Belgium | March 2015 |
| TM Forum Live | Nice, France | June 2015 |
| IETF 93, Network Function Virtualization Research Group (nfvrg) | Prague, Czech Republic | July 2015 |
| NFV Workshop | Hannover, Germany | October 2015 |
| Network Virtualization Forum | Madrid, Spain | September 2015 |

| 5 th SDN Workshop | Zurich, | November 2015 |
|------------------------------|-------------|---------------|
| | Switzerland | |

Further to the above table, the T-NOVA partners have further carried out the following dissemination activities:

- LUH presented T-NOVA and service mapping at Huawei European Research Center in Munich (January 2015) and NEC in Heidelberg (December 2015).
- FINT gave the presentation "Programmable Logic in the Cloud" at NFV workshop in Hannover in October 2015.

3.3. Conference/Workshop Organization

T-NOVA partners have been involved in the organization and chairing of the following NFV-related workshops:

- EUCNC Workshop on NFV and Programmable Networks, Paris, France, June 2015, <u>http://www.eucnc.eu/2015/www.eucnc.eu/indexa069.html?q=node/113</u>
- NFV Workshop, Hannover, Germany, October 2015, https://nfvworkshop.wordpress.com/

The EUCNC workshop (full day) consisted of invited talks from NFV/SDN related EU projects, including, T-NOVA, UNIFY, NETIDE, MCN, VITAL, ACINO, FLAMINGO, 5Gx, and SESAME. The main focus of the workshop was to bring together experiences and efforts from NFV and SDN related projects. The workshop included technical presentations of the current activities and achievement, and stimulated concrete discussions and knowledge exchange during break-out sessions.

The NFV workshop in Hannover was composed of invited talks from academia and industry (e.g., Deutsche Telecom, BISDN), including presentations from EU T-NOVA, UNIFY, and SONATA projects. The speakers shared their views on topics such as network service embedding, network abstractions, NF state management, mobile clouds, and NF implementation with programmable hardware.

3.4. Articles, Magazines, and other Presentations

- **Newsletter:** T-NOVA announcement of progress in PrimeTel Internal Newsletter (November 2015)
- **Magazine:** Project article in PrimeTimel November Issue 2015
- **T-NOVA Demo Presentation on OPNFV YouTube channel**: The two T-NOVA demo's to OPNFV have been captured as YouTube videos and published to the OPNFV YouTube channel Available at:

- OPNFV Yardstick Demo: Apex Lake Experimental Framework https://www.youtube.com/watch?v=5XDIaUDz0PI
- OPNFV Yardstick Demo: Virtual Traffic Classifier: https://www.youtube.com/watch?v=MHghL4QyuSo
- Website Post: Project plenary notification on PrimeTel research website (October 2015)

Internal Presentation: PrimeTel internal presentation to Chief Officers (Technical, Commercial) (November 2015)

- Online Article: Innovation in the cloud by ATOS T-NOVA marketplace Available at: https://www.mobizz-project.eu/innovation-in-the-cloud-at-ptshowroom-lisbon/
- **Presentation:** Network Virtualization Forum, Mardid 2015
- Exhibitions: T-NOVA was showcased at ICT 2015 in Lisbon
- **T-NOVA Business Card** creation which is distributed in events (see Figure 3: Card FrontFigure 3 and Figure 4)
- **Posters:** A poster on Service Mapping was shown in various events
- **Magazine Article:** T-NOVA view related to 5G article in the research*eu magazine, March 2015



• **T-NOVA Presentations to the Mobile Industry:** Figure 5 illustrates the companies that T-NOVA was presented. These include mobile operators, telecom equipment vendors and fixed network operators. CloudStreet organised these presentations which took place between September 2015 and November 2015.

T NOVA Induction Descentations

| | | Country | WebSite | Topic | Date |
|-------------------------|----------------|-----------|---------------------------|---|------------|
| | TeliaSonera | Finland | | T-NOVA Concept / Marketplace | Jun-14 |
| | Elisa | Finland | | T-NOVA Concept / Marketplace | Jun-14 |
| | DNA | Finland | | T-NOVA Concept / Marketplace | Jun-14 |
| | ETL | Estonia | | T-NOVA Concept | 15/10/2015 |
| | LTL | Latvia | | T-NOVA Concept | 2/10/2015 |
| | Omnitel | Lithuania | | T-NOVA Concept | 29/09/2015 |
| | Telia | Sweden | | T-NOVA Concept | 10/12/2014 |
| Mobile Operators | Tele2 | Sweden | | T-NOVA Concept | 15/09/2015 |
| | DT | Germany | | T-NOVA Concept | Jan-14 |
| | Eplus | Germany | | T-NOVA Concept | Jan-14 |
| | Vodafone | UK | | T-NOVA Concept | 16/07/2015 |
| | Etisalat | UAE | | T-NOVA Concept | 12/4/2015 |
| | du | UAE | | T-NOVA Concept | 12/4/2015 |
| | Viva | Bahrain | | T-NOVA Concept | 14/04/2015 |
| | TeliaSonera | Denmark | | T-NOVA Concept | 29/10/2015 |
| | Juniper | USA | http://www.juniper.net | T-NOVA Concept / Orchestrator / Marketplace | 28/10/2015 |
| Telco Equipment Vendors | Nokia Networks | Finland | http://networks.nokia.com | n T-NOVA Concept / Marketplace | 11/10/15 |
| | | | | | |
| Fixed Network Operators | Telx | New York | http://www.telx.com | T-NOVA Concept / Marketplace | 01/09/15 |

| Figure 5: | Presentations | to | Mobile | Industry |
|-----------|---------------|----|--------|----------|
|-----------|---------------|----|--------|----------|

3.5. Liaisons and collaboration with other projects

Over the second year of the project, the following discussions and liaisons with other projects took place:

- **FP7-MCN:** Discussion with MCN core team and common partners regarding re-use of results and components. The identified areas for collaboration include Billing and Charging framework, and OCCI interfaces. Orchestration components re-use was not considered of interest due to the different view for the Orchestration within the T-NOVA framework.
- **FP7- NETIDE:** Discussions on reusing T-NOVA Marketplace for use in NETIDE App Vault. SDN Listener Service developed in NETIDE to be reused by T-NOVA.
- **FP7-UNIFY:** Discussions on bringing together UNIFY Virtualised Infrastructure and VIM with the Marketplace and the Orchestration Plane of T-NOVA. Discussions are currently addressing architectural issues, with the ultimate target of a common PoC.
- **H2020 SONATA:** Currently sharing views and experience (via common partners) on the Infrastructure Virtualisation and the VNF and Network Service descriptors.
- **H2020 CHARISMA:** Currently sharing views and experience (via common partners) on the orchestrator and VIM components. Discussions on possible reuse of results, hands-on experience and implemented T-NOVA components.
- **H2020 SESAME:** Currently sharing views and experience (via common partners). Discussions on possible re-use of results, hands-on experience and implemented T-NOVA components (orchestrator and VNF and NS descriptors).

3.6. Dissemination KPIs for the first two years

This section outlines the dissemination and communication activities carried out during the first and second year of the project. The following table summarizes the achieved key performance indicators (KPIs), as compared to the planned ones.

Table 8: Achieved Dissemination KPIs

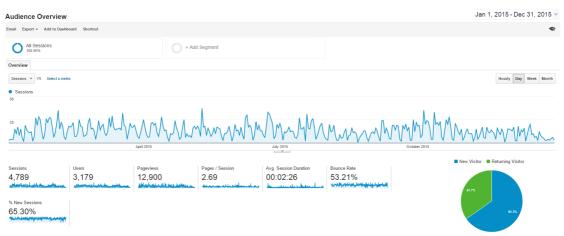
| КРІ | Target | Current |
|--|--------|---------|
| Number of papers published in international refereed journals | > 15 | 2 |
| Number of papers presented in international conferences | > 30 | 20 |
| Number of demonstrations in exhibitions and other events | > 6 | 5 |
| Number of workshops/meetings with liaised projects (UNIFY, NETIDE) | 4 | 4 |

3.7. Public/Social Activities

3.7.1. Public Website

A public website for T-NOVA was set up at the beginning of the project (January 2014) and will be available after the end of the project. The website is regularly updated with project-related activities, project public deliverables and project news.

The T-NOVA website is accessible online at <u>http://www.t-nova.eu</u>. We have added the Google Analytics tracking code in the template of T-NOVA website, enabling the tracking of statistics of the project's website. The number of visits (currently ~1000 visits/month) and other key statistics are shown in Figure 3.





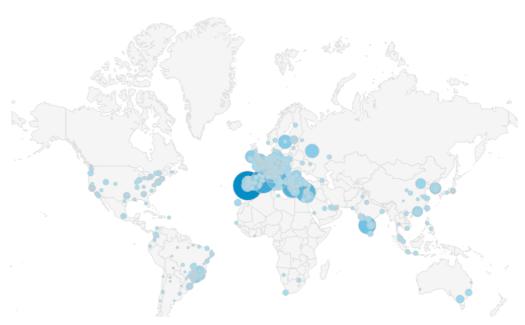


Figure 7: T-NOVA Website Google Analytics Visitor Location

3.7.2. Social Network Accounts

Apart from the public website, we have created social network accounts on Twitter, LinkedIn, and Slideshare to further increase the visibility of the project.

3.7.2.1. Twitter

We have created an account on Twitter in order to explore this as a conversational channel by posting live events and news about the project. The T-NOVA account **@FP7TNOVA** has been active since January 2014 and currently has 134 followers, as shown in Figure 7.



Figure 8: T-NOVA Twitter account

3.7.2.2. LinkedIn

A group on LinkedIn was established in September 2014 with the objective of sharing news from T-NOVA, attracting the attention of researchers, practitioners, and stakeholders involved or interested in the thematic areas of T-NOVA. The LinkedIn group is available at: <u>https://www.linkedin.com/groups/FP7-TNOVA-6760388</u>

| FP7 T-NOVA 52 members | √ Memb | |
|---|--|--|
| | ABOUT THIS GROUP | |
| Start a conversation with your group | With the aim of promoting the NFV concept, T-NOVA introduces a novel enabling framework, allowing operators not only to deploy virtualized Network Functions (NFs) for their own needs, but also to offer them to their customers, as value-added services | |
| Enter a conversation title | | |
| Conversations Jobs | Show more | |
| FEATURED 5mo | MEMBERS 52 mem | |
| Dora Christofi R&D Analyst & Project Admin | © () 🖁 🔮 🕲 () () | |
| T-NOVA will be participating in EuCNC 2015 - Paris, France, | Invite others | |
| June 29/July 2, 2015 | | |
| Exhibition stand 9: T-NOVA | Ads You May Be Interested In | |
| | | |

Figure 9: T-NOVA LinkedIn account

3.7.2.3. Slideshare

A Slideshare account has been set up to publish presentations and documentation of T-NOVA, in addition to the project website. The Slideshare account has been active since September 2014 and is accessible at: <u>http://www.slideshare.net/fp7tnova</u>.

3.8. Internal Activities

3.8.1. Wiki

A Wiki has been set up based on the open-source MediaWiki platform [1] to support daily communication between the project participants. The T-NOVA wiki page has promoted efficiency the centralised management of project tasks and activities among the partners.

3.8.2. Mailing Lists

In addition to Wiki, a general T-NOVA mailing list as well as a mailing list for each work package have been setup in order to communicate information within the consortium. All mailing lists have been created using the open-source GNU Mailman software [2].

3.8.3. F2F Meetings

The T-NOVA consortium organized face-to-face meetings, including 3 plenary meetings, 4 technical meetings during the second year of the project.

Plenary Meetings

- Plenary Meeting in Milan, Italy February 2015
- Technical (WP4) Meeting in Rome, Italy April 2015
- Technical (WP3) Meeting in Barcelona, Spain May 2015
- Plenary Meeting in Hanover, Germany June 2015
- Technical (WP3 & WP5) Meeting in Athens, Greece September 2015
- Plenary Meeting in Limassol, Cyprus October 2015
- Technical (WP3 & WP6) Meeting in Athens, Greece December 2015

3.8.4. Conference Calls

The Work package leaders organized a weekly or bi-weekly conference call for each task in the project. Minutes and actions defined during the conference calls are recorded on the wiki to ensure that all partners are appropriately informed if unable to participate in a call. In addition, these meeting minutes act as record of decisions made among the participants. The conference calls are also used by partners to provide presentations of enabling technologies and/or their ongoing research work.

4. FINAL YEAR DISSEMINATION PLANS

Over the second year of the project, T-NOVA partners disseminated the results from the development and evaluation of T-NOVA system components (e.g., service mapping) in international conferences, while T-NOVA was showcased at various conference demo sessions and exhibitions. Furthermore, a T-NOVA architecture paper has been submitted to NetSoft 2016.

Since the final year of the project will be mostly spent for the experimental evaluation of the T-NOVA orchestrator (at system- and component-level), T-NOVA partners will seek to disseminate the evaluation results in the scientific community and industry. In terms of conferences, scientific journals and magazines, dissemination targets will include the following:

- Conferences/workshops: IEEE COMSNETS, IEEE NetSoft, IEEE SDN&NFV, IEEE INFOCOM SWFAN, ACM SIGCOMM HotMiddlebox
- Journals: Elsevier's Computer Network, IEEE Transactions on Network and Service Management
- **Magazines:** IEEE Communications, IEEE Network

With respect to journals, special issues related to T-NOVA area of interest will be also considered. In addition, Open Access publications that provide fast track publication and dissemination opportunities will be sought.

T-NOVA will seek the participation in the following major events:

- Mobile World Congress (MWC) in Barcelona in Feb. 2016
- European Conference on Networks and Communications (EuCNC) in Athens in June 2016

Furthermore, T-NOVA partners will co-chair the following events that will take place in 2016:

- 1st IEEE International Workshop on Software-Driven Flexible and Agile Networking (SWFAN), co-located with IEEE INFOCOM 2016, San Francisco, USA, April 2016, <u>http://www.swfan.org/</u>
- **14th** International Conference on Wired/Wireless Internet Communications (WWIC), Thessaloniki, Greece, May 2016, <u>http://wwic.info</u>

In particular, IEEE SWFAN is focused on SDN/NFV orchestration, whereas WWIC has a broader scope and, among other topics, solicits submissions on NFV/SDN, and particularly their applications to wireless networks.

In addition, T-NOVA results will be disseminated to IRTF NFVRG research group or/and other WG in scope (e.g., SDNRG). Finally, we will pursue communication and dissemination of project results via the project website, blogs, online social networks, and promotional material (e.g., brochure, presentations) that will be periodically updated to capture the latest project developments.

5. CONCLUSION

The deliverable outlined the T-NOVA dissemination strategy and the actual dissemination activities for the second year of the project as well as the plans for the final year. The deliverable provides a detailed description of the activities both internally and externally undertaken in order to increase the project's visibility and its research output.

Over the second year, T-NOVA mainly pursued the dissemination of project results in conferences, workshops, journals, while several presentations and demonstrations were given at various venues. Dissemination highlights include publications at prestigious venues, such as IEEE COMSNETS, IFIP Networking, and IEEE Transactions on Network and Service Management, as well as, at thematically related events, such as IEEE NFV-SDN.

Furthermore, the T-NOVA partners have been active in workshop organization and chairing, such as EuCNC Workshop on NFV and Programmable Networks, IEEE INFOCOM SWFAN, and NFV Workshop in Hannover.

This deliverable will be further revised as new dissemination activities are carried out during the final year of the project. As such, Deliverable D8.33 will summarize the respective activities upon the project completion.

LIST OF ACRONYMS

| Acronym | Description |
|---------|---|
| ACM | Association for Computing Machinery |
| ΑΡΙ | Application programming interface |
| F2F | Face to Face |
| FIA | Future Internet Assembly |
| EU | European Union |
| FP7 | 7 th Framework |
| IEEE | Institute of Electrical and Electronics Engineers |
| IFIP | International Information Security and Privacy |
| IRTF | Internet Research Task Force |
| КРІ | Key Performance Indicators |
| NFV | Network Functions Virtualization |
| SDN | Software Defined Network |

ANNEX

- [1] MediaWiki, https://www.mediawiki.org/wiki/MediaWiki
- [2] GNU Mailman Software, http://www.gnu.org/software/mailman/