



T-TOUR EXPERTS SESSIONS

Evolution and Revolution in the Internet

Software Defined Networks and new network architectures

Pisa, Oct 9th 2015 9.30am-2.00pm
SMS Biblio – Piagge Public Park
Via San Michele degli Scalzi, Pisa, PI, Italia

The Internet has grown to a point that it interconnects billions of users, who run a wide range of networking application and exchange petabytes of data through the network. It is quite unanimous opinion that the Internet – and the packet network in general – innovated lifestyles and made obsolete the communications made possible by the traditional circuit switched telephone and television networks. However, the size, architecture and scope of the current Internet make innovation and long term sustainability very difficult, since even minor changes happen through the accretion of point solutions.

In the last decade networks, servers, storage technologies, and applications have all undergone significant changes with the introduction of virtualization, network overlays, and orchestration. Such technologies have allowed network operators and service providers to easily introduce a variety of (proprietary) hardware-based appliances in order to improve their network manageability as well as rapidly launch new services, keeping up with the pace of their users demand. The current Internet looks like a concatenation of networks with many distributed functions, implemented via a plethora of highly specialized middleboxes for firewalls, deep-packet inspection (DPI), Network Address Translation (NAT), traffic scrubbing, etc. **Software Defined Networking (SDN)**, **Network Functions Virtualization (NFV)**, **Service Function Chaining (SFC)** and programmable network flow processing platforms, possibly based on commodity hardware, are emerging with the promise to evolve towards high flexibility the architecture of our networks.

Similarly, the new traffic patterns (e.g. within the data centers) and the forecasted volumes of connected devices demand for a move beyond the current TCP/IP architecture of the Internet, to overcome limitations and constraints in layering, addressing, security, quality of service, mobility. **RINA (Recursive InterNetwork Architecture)** is emerging as clean slate network architecture based on the fundamental principle that networking is only distributed inter-process communication.

The Telecommunication Network research Group at University of Pisa together with Nextworks is organizing an **experts session within the Internet Festival 2015** (<http://www.internetfestival.it/en/>) to highlight some of these major technological advancements of the future Internet.

Main goal of this session is to discuss with invited experts from leading industries and researchers how Software Defined Networking, Network Function Virtualization and RINA can change and enhance the networks and the services for the Internet.

The session is a unique opportunity for researchers, students and network enthusiasts to get highlights on the major strategic directions taken in this area, having also the opportunity to identify frameworks for engaging with the community of Telcos, vendors and researchers who are implementing this Internet change.

This event is sponsored by the PRISTINE project (<http://ictpristine.eu/>), funded by the European Commission under the ICT challenges of the Framework Programme 7.

Event location

Room Bibliotheca CENTRO ESPOSITIVO MUSEALE SMS - SAN MICHELE DEGLI SCALZI

Viale delle Piagge 18, Pisa

<http://www.comune.pisa.it/it/ufficio-scheda/7966/SMS-Centro-Espositivo-San-Michele-degli-Scalzi.html>

Agenda

Oct 8th 2015	
20.00-23.30	<i>Working dinner with presenters</i>
Oct 9th 2015	
9.30 - 9.40	Welcome message (S. Giordano, G. Carrozzo)
9.40 – 10.00	P. G. Aranda (Telefonica) , “NFV & ETSI, Telefonica vision”
10.00 – 10.20	G. Grammel (Juniper) , “Load balancing with SDN/NFV”
10.20 – 10.40	Arnaldo Fornasiero (HP Enterprise) , “NFV System –NFVI offering from HPE”
10.40 – 11.00	<i>Coffee break</i>
11.00 – 11.20	PRISTINE project, M. Ponce de Leon (TSSG) , “RINA use cases & open source”
11.20 – 11.40	PRISTINE project, E. Grasa (i2CAT) , “RINA essentials”
11.40 – 12.00	C. Beckmann, (Brocade) , “Progress toward OpenFlow Interoperability”
12.00 – 12.20	M. Campanella, GARR , “The role of NRENs in SDN/NFV research”
12.20 – 13.00	Panel discussion with experts (G. Carrozzo)
13.00 – 13.45	<i>Lunch buffet</i>
13.45	<i>Meeting closure</i>