On the Road to Automation through OSS-Network Integration

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Keywords: OSS, Network Automation, Lifecycle Service Orchestration, Interoperability, Standards

While the talk has been about technologies like SDN, the real goal is automation of network operations. Automation will accelerate the entire operations lifecycle saving time and removing unneeded human involvement to deliver services rapidly and efficiently. It will also maximize services and network availability by pinpointing problems rapidly, often even before they occur, enabling the exercise of self-healing capabilities like dynamic multilayer restoration.

The path to operations automation lies in operations support systems (OSS) interworking directly with the underlying network, and with each other, without human intervention. This enables OSS-based algorithms to continuously know about what is occurring in the network environment, from service requests, to traffic flows and resource utilization, to warnings and alarms – and then react to all of these quickly to significantly improve service responsiveness, service and network availability, and network utilization.

The key to successful interworking are well-defined interfaces, covering both protocols and data models. North-south interfaces are needed from network equipment controllers to OSS, to provide information about and enable control to be exercised over the network infrastructure. East-west interfaces are needed on the OSS themselves so they communicate autonomously with each other for automation over multiple domains.

The joint presentation by GRNET and ECI discusses both practical and industry initiatives at making this a reality.

GRNET

GRNET will describe their work at integrating ECI's LightSoft NMS with their OSS to deliver dynamic lightpaths over GRNET's production network.

GRNET has deployed a reconfigurable optical network based on ECI's Apollo optical networking system. GRNET has been enabling optical trails/lightpaths over this network manually through ECI's LightSOFT NMS. For each new service instance, an operator would manually configure the network through LIGHTSOFT. This is a time consuming and error-prone process.

To speed up this process GRNET has implemented an automated adaptor to LightSOFT, using a CORBA northbound interface from LightSOFT and exposing a TM Forum's Frameworx compliant Restful API to the upper layers of the OSS. GRNET will review their practical work for building this adaptor, how it is being used, and its benefits. They will also discuss their future plans for automation and OSS integration as standards in this area become more concrete.

ECI

ECI will describe its industry leadership initiatives at the MEF for speeding up the standardization of interfaces for OSS interworking, and the availability of associated open APIs.

ECI is leading an MEF 3.0 Service Fulfillment and Activation Project along with three service provider partners to accelerate service turn-up and assurance. This can be performed across multiple service provider domains, and even in situations that still rely on proprietary OSS. This is done by providing a

transparent overlay which interfaces with OSS/BSS on the one side and Lifecycle Service Orchestration (LSO) interfaces on the other – thereby permitting the utilization of LSO protocols to fulfill and assure the requested services. This sandbox also covers north-south interfaces to network equipment controllers. This work is being turned into a permanent MEF sandbox project. Open to all MEF members, it features live APIs, permitting the creation and testing of multi-domain services. Most importantly, participants can use this sandbox to test the viability of the LSO solutions today.

ECI will describe this work and show how TNC members can participate and benefit.

Together this joint GRNET-ECI presentation captures our industry's journey to achieving automation through OSS-network and OSS-OSS integration.

Speakers:

Afrodite Sevasti, Chief Business Development Officer, GRNET

Afrodite is leading Business Development activities at GRNET. At the same time, she leads the GÉANT activities on SDN/NFV evolution and interoperation with e-Infrastructures and Service Providers. Her experience is in advanced network technologies and services as well as the design and delivery of next generation OSS/BSS and IT service management solutions for non-commercial environments. Afrodite holds a PhD from University of Patras, in the field of QoS enhancements on IP-based networks as well as an MSc degree in Information Networking from Carnegie Mellon University.

Sarit Tager, VP R&D SDN & LSO, ECI

Sarit Tager is a Vice President of Research and Development at ECI Telecom where she leads the SDN, LSO & Software Applications research & development group. She is responsible for the full cycle of development process of the company's products in the SDN and LSO fields. The group handles state of the art technology using Micro-service architecture and cloud technologies. Ms. Tager is also leading the open source contributions activity in ECI in these areas. Prior to this, Ms. Tager held several positions in Access Line of Business R&D SW development. Ms. Tager was also ECI Solution Architect for British Telecom NGA project and for several other customers and projects.Sarit Tager holds a BSc. in Computer Science and Electric Engineering from Tel Aviv University.