

17/20 MARCH 2015 HOTEL MARRIOTT RIVE GAUCHE PARIS

# THE MIGRATION SCENARIO.

17<sup>TH</sup> EDITION

# MPLS SDN WORLD CONGRESS

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## The First Worldwide Event on the MPLS and SDN Market

The MPLS SDN World Congress has always been an event that worked hard to bring industry icons and mavericks together to exchange ideas about the latest emerging networking technologies. The 17th Edition, which will take place in Paris in March 2015, won't disappoint.

The objective set by Upperside Conferences is to confirm the success of the 2014 edition. MPLS SDN World Congress, together with the collocated NFV & SDN Summit, attracted 1400 participants last March.

A strong presence of service providers (more than 50% of the audience) as well as a growing internationalization (see figures) confirms MPLS SDN World Congress as the first worldwide event in the MPLS & SDN area.

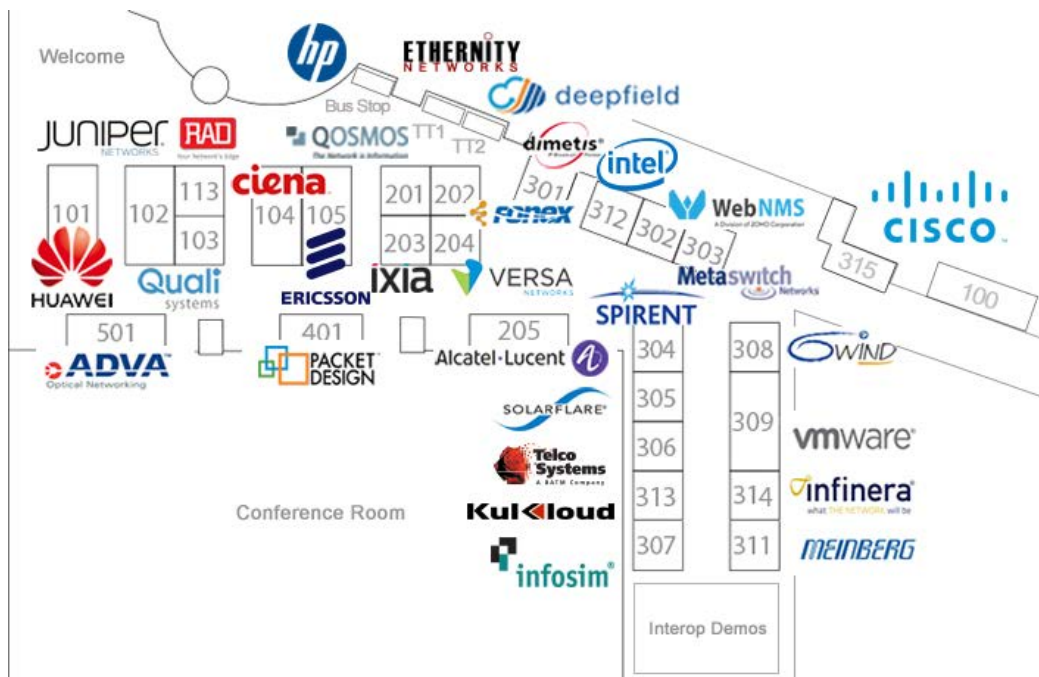
## Co-located with the NFV & SDN Summit

The 17th Edition of MPLS SDN World will be jointly organized with the NFV & SDN Summit, whose 2014 edition attracted more than 400 participants, making this event the largest in Europe. The growing interest in this new technology should attract about 1500 attendees for the 2015 edition of MPLS SDN World Congress and the NFV & SDN Summit.

The two events will share a common agenda during the first day of the event, and will end with the following panel discussion:

### Open source & standards: how they can fit together

Key players from carriers, open source organisms and equipment vendors will discuss open source as a force for creating de facto standards versus traditional standardization mechanisms.



- # 100 CISCO
- # 101 HUAWEI
- # 102 JUNIPER NETWORKS
- # 103 QUALISYSTEMS
- # 104 CIENA
- # 105 ERICSSON
- # 113 RAD
- # 201 QOSMOS
- # 202 FONEX
- # 203 IXIA

- # 204 VERSA NETWORKS
- # 205 ALCATEL-LUCENT
- # 301 DIMETIS
- # 302 WebNMS
- # 303 METASWITCH
- # 304 SPIRENT
- # 305 SOLARFLARE
- # 306 TELCO SYSTEMS
- # 308 6WIND
- # 309 VMWARE

- # 311 MEINBERG
- # 312 INTEL
- # 313 KULCLOUD
- # 314 INFINERA
- # 315 CISCO
- # 401 PACKET DESIGN
- # 501 ADVA OPTICAL
- # TT1 ETHERNITY NETWORKS
- # TT2 DEEPFIELD
- HP BUS STOP



08.00 WELCOME, REGISTRATION AND COFFEE



## PRESENTED BY BROADBAND FORUM AMBASSADORS

**Diane Patton**, CISCO  
**Gert Grammel**, JUNIPER NETWORKS  
**Manuel Paul**, DEUTSCHE TELEKOM  
**Konstantinos Samdanis**, NEC

### Building Converged IP and Optical Transport Networks

Service providers need a transport infrastructure that is optimized for IP and packet services. The Broadband Forum is standardizing on an architecture to support this new era with a paradigm shift. The architecture uses ITU-T SG 15 and IETF standards along with various advances in the technology. It supports interoperability between different vendors and all modes of operation. By combining IP and Optical (DWDM) interfaces, service providers can build a robust metro and long haul network delivering a variety of services while reducing CapEx and OpEx.

### Reducing Operating Costs through Energy Efficient Mobile Backhaul

The Broadband Forum Mobile Backhaul architecture facilitates unified Mobile Backhaul supporting different radio technologies (2G/UMTS/HSDPA/LTE) via the use of IP/MPLS and overlay networks, transport equipment and interfaces of various technologies. Such an architecture can efficiently handle the challenge of progressive network infrastructure deployments using different radio and transport technologies, while it is inherently energy efficient since fewer network nodes and communication links are needed.

### 09.00 Building Converged IP and Optical Transport Networks - First part

- Introduction to IP and DWDM Integration
- Market Drivers
- Integration in the Metro
- Technology Overview
- Overall IP and DWDM Architecture

10.00 COFFEE BREAK

### 10.30 Building Converged IP and Optical Transport Networks - Second part

- Common Management and Control plane
- Integrated Models
- Separated Model
- Integration Standards
- Integration Use Cases
- Summary

### 11.30 Energy Efficiency in the Mobile Backhaul Network

- Network Design focusing on the BBF Mobile Backhaul architecture.
- Energy Efficiency Mechanisms, considering Energy Efficient Ethernet (EEE), ITU-T G-PON, Power over Ethernet (PoE) and Link Aggregation (LAG) and their applicability on BBF Mobile Backhaul.
- OAM and Management including related standards work at IETF, ETSI and ATIS.
- Evolving technologies considering ONF SDN solutions, ETSI Green Abstraction Layer (GAL), EEE for higher speed links, IETF routing and transport.
- The applicability of energy efficiency at different levels of a network considering:
  - Device-level: load-adaptive and power-adjustable components
  - Equipment-level: through low-power states and dynamic adaptation of operational parameters (sleep mode control); e.g. mechanisms for such an equipment-level sleep mode control are Energy Efficient Ethernet and GPON power saving modes.
  - Network-level: resource consolidation, energy consumption-based routing/traffic engineering

12.30 LUNCH



## PRESENTED BY MEF AMBASSADORS

The Third Network - SDN, NFV, and LSO Seminar features new MEF work on the implementation of SDN and NFV together with Lifecycle Service Orchestration (LSO) to accelerate the implementation of agile and dynamic carrier services and improve operational efficiency of the world's most popular business services in the context of the Third Network.

**14.00 Welcome**

Introducing the Third Network and the new interdependence of SDN, NFV and LSO.

**Johan Witters, ALCATEL-LUCENT**

**14.05 The Third Network: SDN, NFV, and LSO**

An overview of the MEF's emerging Lifecycle Service Orchestration (LSO) as the third pillar, together with SDN and NFV, of the Third Network.

**Isabelle Morency, VERYX**

**14.35 Using LSO, SDN and NFV to enhance Carrier Ethernet Services**

A detailed review of the MEF LSO Reference Model including the underlying information models and APIs of LSO, SDN and NFV and the importance and challenges in aligning them.

**Abel Tong, CYAN**

**15.05 Using LSO, SDN and NFV to enhance Carrier Ethernet Services**

Illustrations of the use of LSO, SDN and NFV to enhance CE 2.0 services and future looking Third Network services, and the use of their capabilities to maximize the automation of different aspects of the service lifecycles. In addition, Service Orchestration capabilities for Wholesale services, specifically in the context of Product Catalogs, Product Ordering, Service Configuration, Service Activation Testing and Service Delivery.

**John Hawkins, CIENA**

**15.35 COFFEE BREAK****16.05 Service Provider Panel: Ethernet Services Migration to LSO, SDN and NFV**

A service provider panel discussing strategies for the migration of Ethernet services delivery from current network architectures and existing BSS/OSS solutions to take advantage of the benefits of LSO, SDN and NFV in the short to mid term, and in preparation for Third Networks services in the longer term.

Moderator: **Carsten Rossenhoel, EANTC**

Panelists:

**Divesh Gupta, PCCW**

**Youcef Ayad, TELIASONERA**

**Jamy Rousseau, SFR**

**Matthias Homann, COLT**

**16.35 Panel: The New Generation of Stakeholders in the LSO-SDN-NFV Era**

Industry standards organizations and associations, Open Source organizations, service providers, equipment manufacturers, technology solution developers - all these stakeholders and more need to collaborate ever more closely in order to realize the vision of agile, assured and orchestrated networks. This wrap up session reviews the classes of stakeholders involved in this work, and proposes how collaboration will drive the industry forward in this LSO-SDN-NFV era.

Moderator: **Rami Yaron, MEF**

Panelists:

**Marc Cohn, ONF**

**Chris Price, OPENDAYLIGHT**

**Tom Nadeau, OPNFV**

**Manuel Paul, BROADBAND FORUM**

**17.05 Inter-Operator connectivity for end-to-end dynamic service**

Creating a dynamic service through multiple network using MEF ENNI - Survey & First Panel

**Rami Yaron, TELCO SYSTEMS**

**17.35 Panel: APIs for Orchestration and Automation**

APIs are the key to the long term goal of automation and rich end-to-end connectivity service capabilities. This panel reviews how to identify which APIs are required, defining API requirements through inter-body collaboration and the evolving OpenSource environment that is required to develop APIs in a way suited to today's industry expectations.

Moderator: **Emerson Moura, CISCO**

Panelists:

**Abel Tong, CYAN**

**Shahar Steiff, PCCW GLOBAL**

**Rami Yaron, TELCO SYSTEMS**

**Nir Halachmi, HUAWEI**

**18.05 Wrap up****18.15 END OF THE TUTORIALS**

# MPLS SDN WORLD CONGRESS + NFV & SDN SUMMIT 2015

## WEDNESDAY 18 MARCH 2015 COMMON CONFERENCE DAY 1

07.45 WELCOME, REGISTRATION AND COFFEE



**MORNING CHAIRPERSON**  
**Luyuan Fang**, Principal Network Engineer, MICROSOFT

## OPENING SESSION

08.30 **LSO, SDN & NFV**



**Nan Chen**, President, MEF

09.10 **SDN Snapshot: HW versus SW, De Facto versus De Jure, Open Standard versus Vendor**



**Curt Beckmann**, CTO Europe, Chair of ONF Forwarding abstraction WG, BROCADE

08.50 **Is 'Open' the 'Organic' of the IT Industry?**



**Nicolas "Neela" Jacques**, Executive Director, OPENDAYLIGHT

## KEYNOTES SESSION

09.30 **MPLS Architecture in Practice: SDN New Requirements**



**Loa Anderson**, MPLS IETF WG Chairman, HUAWEI

11.30



**Kireeti Kompella**, JUNIPER NETWORKS

10.00 COFFEE BREAK

10.30 **SDN Technology and the Organization Transformation**



**Jan Häglund**, Head of Product Area Network Analytics & Control, Business Unit Cloud & IP, ERICSSON

12.00



**Dave Ward**, CISCO

11.00 **Role of Inter Data Center Technologies: Application Performance**



**Sunil Khandekar**, CEO of NUAGE NETWORKS

12.30 LUNCH

AFTERNOON CHAIRPERSON  
**Jean-Marc Uzé**, JUNIPER NETWORKS**VIRTUAL ENTERPRISE CPE SESSION****14.00 SDN & NFV Carriers Strategies**

Demonstrating how vBusiness CPE is the top NFV use case for revenue generation.

**Michael Howard**, Co-founder and Principal Analyst  
Carrier Networks, **INFONETICS**

**14.20 EasyConnect: a Digital Experience of the IPVPN Service**

EasyConnect is a new IPVPN service designed by Orange Business Service for SMB providing a complete digital experience to customers thanks to SDN technologies. Easy Connect introduces a self care portal where the customer can customize its service chain and flow policy in real time: all the changes are dynamically applied to the network thanks to Software Defined

Network. Presenting the results of the EasyConnect service Proof of Concept in Orange Business Service live network.

**Stephane Litkowski**, ORANGE BUSINESS SERVICE

**14.40 Evolution of Colt's Data Services Platform: from Vision to Execution**

Solving today's per-product silo approach and simplifying operations with next generation access. Accelerating innovation with a modular multi-service Carrier Ethernet platform, SDN and NFV. Simplifying the network stack with layer 1/2/3 integration. Describing the service evolution (Ethernet, Internet and IPVPN) and the customer benefits

**Valéry Augais**, Senior Network Architect, Network & Platform  
Strategy and Architecture, Technology Services Unit, **COLT**

**15.00 NFV and the Evolution of Managed Services to Boost Profitability**

Service Providers deliver today a comprehensive set of managed services in conjunction with their IP VPN service portfolio, including managed CPE and security gateways. NFV enables SPs to enhance their agility and efficiency in delivering managed services, deliver new services to existing customers in a cost-effective manner and ultimately, improve

the bottom line. This presentation describes several NFV-based managed services uses cases.

**Hector Avalos**, VP Strategy & Business Development,  
**VERSA NETWORKS**

**15.20 Life (cycle) Assurance from vCPE**

Migration to orchestrated SDN/NFV networks requires rethinking of existing procedures, which in many cases can be made faster and more efficient. The vCPE, although driven by other requirements, is a key enabler for this new generation of flexible life-cycle management.

**Yaakov Stein**, CTO, **RAD**

15.40 COFFEE BREAK

**OPEN SOURCE AND STANDARDS SESSION****16.10 The Open Platform for Network Functions Virtualization (OP-NFV)**

Recently a new organization was formed under the Linux Foundation called OP-NFV. This organization's goals are to build, largely from an operator's view, an NFV deployment infrastructure. The basis for this organization was founded on the base architecture from the ETSI NFV WG, but is quickly evolving that architecture to include modern twists.

**Tom Nadeau**, BROCADE

**16.30 Open Source vs. Standardisation: Moving away from Competition (the NFV Use Case)**

Reviewing the myths and realities about the alleged shortcomings of conventional standardization processes (delivery lifecycle, unsatisfactory compromise...) and about the expected benefits of Open source software development way and distribution based on the access to software source code. Discussing the NFV use case as it provides a good illustration of the need to combine both approaches on several axes.

**Bruno Chatras**, **Morgan Richomme**, ORANGE

**16.50 OpenContrail Deployments Examples**

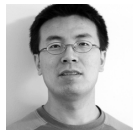
Highlighting key OpenContrail deployment examples. Describing major product/solution differentiators and previewing key service delivery capabilities on the way.

**Pedro Marques**, JUNIPER NETWORKS

**17.10 Towards a Common Platform for Open NFV**

How OpenSource can boost interoperability but at the same time sustain a healthy business ecosystem. How ODL and OpenStack can help SP transition from legacy networking to agile networking. More specifically, the Cloud Network Controller use case

**Chris Price**, ERICSSON

**17.30 Reinvent Network Dataplane: From POF to OpenFlow 2.0**

Network dataplane is used to be closed and rigid. Protocol-oblivious Forwarding (POF) opens the network dataplane and allows user to agilely customize and control the forwarding protocol and behavior. POF has successfully made it an essential proposal toward the next generation.

**Dr. Haoyu Song**, Senior Network Architect,  
**HUAWEI TECHNOLOGIES USA**

**17.50 Open Solutions for NFV**

Reviewing the work that Intel is doing with software partners to make Carrier Grade NFV Infrastructure and Management components freely available.

**David Fraser**, INTEL

## DEBATE

## 18.10 Open Source &amp; Standards: How they can fit together

Moderator  
Tom Nadeau, BROCADENicolas "Neela" Jacques, Executive Director,  
OPENDAYLIGHT

Dave Lenrow, HP

Curt Beckmann, CTO Europe, Chair of ONF  
Forwarding abstraction WG, BROCADE

Diego Lopez, TELEFONICA



Dave Ward, CISCO



Thomas Morin, ORANGE



Andy Kennedy, VMWARE



Pedro Marques, JUNIPER NETWORKS



Andrew G. Malis, HUAWEI



Wim Henderickx, ALCATEL-LUCENT

## 19.30 END OF CONFERENCE DAY ONE

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welcome cocktail sponsor

## 19.30 WELCOME COCKTAIL

08.00 WELCOME, REGISTRATION AND COFFEE

**CHAIRMAN**  
Andrew Malis, HUAWEI

## SPRING SESSION

### 08.30 Re-thinking Traffic Engineering in the light of SDN & Segment Routing



Segment Routing offers new capabilities in how traffic can be engineered. It can engineer traffic while keeping nodes other than the ingress free of state. It can define paths for tunnels that take advantage of ECMP over select segments. Further SR offers fine grain control of BGP egress selection. Examining the elements above and how they can be combined to enhance Traffic Engineering.

**George Swallow**, Distinguished Engineer, CISCO

### 08.55 Segment Routing: Ongoing Deployment Use-cases



By March 2015, the first SR deployments will be ongoing. Reviewing the requirements of the involved network operators as well as the experience collected during the design and lab qualification process.

**Clarence Filisfil**, CISCO FELLOW

### 09.20 SPRING Interoperability Testing Report



First early or official version of codes including SPRING technology are available from different vendors. Providing feedback on intensive interoperability tests of three implementations including basic MPLS transport, FRR and LDP interoperability.

**Stephane Litkowski**, ORANGE BUSINESS SERVICE

### 09.45 Network Service Chaining for Service Providers: Opportunities and Challenges



Use Cases and Requirements  
Scalability  
Challenges, Benefits and Service Impact  
Architecture and Solution Options

**Werner Weiershausen**, Chief Architect Packet-Optical Transport Networks, DEUTSCHE TELEKOM AG

### 10.10 Evolution and Migration Path into Programmable Multi Layer Networking



Discussing controlling and managing IP / MPLS architecture using SDN. Demonstrating a concept of support for Segment Routing based on Open Daylight architecture. Examples of Segment Routing applications such as: optimization of the network in near real-time, network applications optimized angle and multi-tenant environment, segment routing and packet optical networks are presented.

**Jeff Tantsura**, ERICSSON

10.35 COFFEE BREAK

### 11.05 SPRING-based (i.e., source routing based) Service Chaining

Talking about how to leverage the SPRING-based source routing mechanism to realize the service path layer functionality of the Service Function Chaining (SFC), i.e., steering the selected traffic through the Service Function Path (SFP).

**Xiaohu Xu**, Senior Staff Engineer, HUAWEI

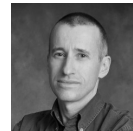
### 11.30 A Practical Approach for Inter-domain Traffic Engineering



Doing automated outbound load-balancing of Internet traffic is an emerging trend of Data Center Operators. Highlighting the use and role of BGP-LU (RFC3107) and MPLS for controller based load-balancing of egress traffic.

**Hannes Gredler**, JUNIPER NETWORKS

### 11.55 Microsoft Segment Routing



Describing the design and implementation of Segment Routing with an MPLS dataplane in a Cloud Scale service provider network, including deployment challenges and interop issues.

**Tim LaBerge**, MICROSOFT

12.30 LUNCH

08.00 WELCOME, REGISTRATION AND COFFEE

**CHAIRMAN**  
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**Xiaohu Xu, Senior Staff Engineer, HUAWEI**

### 11.30 A Practical Approach for Inter-domain Traffic Engineering



Clarifying the use of BGP-LU for Egress Peering traffic-engineering purposes and discussing both implementers and network operator to use a widely deployed and operationally well understood protocol, rather than inventing new protocols or new extensions to the existing protocols.

**Hannes Gredler, JUNIPER NETWORKS**

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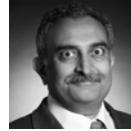
12.30 LUNCH

## RESILIENCE SESSION

**14.00 Stitching Layers and Domains for Enhanced Service Resiliency**

Reviewing the existing end-to-end service resiliency technologies in a single domain and single layer network. One of the significant progresses is to use the shared backup path protection for enhance service resiliency against any dual-link failures in poorly connected networks.

**Victor Liu, HUAWEI USA**

**14.30 Resilient MPLS Rings**

Describing the special nature of rings, and the special needs of MPLS on rings. Showing how these needs can be met in several ways, some of which involve extensions to protocols such as IS-IS, OSPF, RSVP-TE and LDP.

**Kireeti Kompella, JUNIPER NETWORKS**

**15.00 V6 World Conference Report**

**Mark Townsley**  
CISCO

## 15.15 COFFEE BREAK

## SDN WAN SESSION

**15.45 SDN for the WAN: Benefits of Centralised Traffic Engineering**

Discussing a model for SDN in the Wide Area Network (WAN). In particular, focusing on the use of a centralised real-time traffic-engineering controller. Discussing key protocol ingredients that enable the implementation of such a real-time controller, including BGP-LS and Active Stateful PCE.

**Julian Lucek, JUNIPER NETWORKS**

**16.15 A New SDN-based Paradigm for Hyper-Scale Cloud/DC at Low Cost**

Introducing a new SDN-based paradigm for hyper-scale elastic cloud at low cost, which supports tens of millions of physical servers as the network endpoints and thousands of NFV instances. We reformulated highly-complex, NP-complete problems into manageable ones, while achieving a global optimality. Both Fat Clos ECMP fan-out and any-to-any

TE with tens of millions of tunnel endpoints are supported concurrently with surprisingly small FIB size in all DC fabric and core switches.

**Luyuan Fang, MICROSOFT**

**16.45 Correlating Overlay and Underlay SDN Performance**

Presenting SDN analytics for monitoring the performance of overlay networks, and the IP/MPLS control plane protocols in the underlay network. Showing how performance degradation in the overlay network is linked to routing incidents and traffic congestion in the underlay network, and how a Network Access Broker can remedy these problems by

computing and provisioning alternate paths.

**Cengiz Alaettinoglu, CTO, PACKET DESIGN**

**17.15 Carrier Grade SDN: Requirements and Gaps**

While it could be cost-effective for service providers to move their infrastructures from traditional architectures to one based on SDN, there are a number of obstacles as well. This talk will discuss the current state of the art in carrier grade SDN, service provider requirements which distinguish them from data center and campus networks, and how the resulting gaps may be met.

**Andrew Malis, Distinguished Engineer, HUAWEI**

**17.45 Cloudwatt: Extending Private Networks in the Public Cloud**

One of the key reasons for Cloudwatt to use OpenContrail as its SDN, beyond the distributed nature of the vrouter and associated scalability, was the native support for standard based protocols BGP & MPLS. Covering the client use cases that are enabled by this implementation.

**Foucault de Bonneval, CLOUDWATT**

## 18.15 END OF CONFERENCE DAY TWO

08.00 WELCOME AND COFFEE



CHAIRMAN

**Matthew Bocci**, Director, Technology and Standards,  
ALCATEL-LUCENT

## DATA CENTER OVERLAY SESSION

### 08.30 VPN Multicast Deployment: Can we Re-enable Multicast in the Public Cloud?



Discussing a cloud networking appliance, VNS3, which re-enables multicast in cloud networks by creating a sealed network overlaid on top of the existing cloud network.

**Chris Swan**, CTO, COHESIVEFT

### 08.55 Network Virtualization: Keep it Simple Stupid



Exposing the progress of BaGPipe, a lightweight integration of BGP-based VPNs in Openstack Neutron. Discussing what can be achieved with this solution architecture, such as L2 connectivity, seamless connectivity with IP VPNs, L3 inter-subnet connectivity and service-chaining. Exploring how the KISS principle and opensource implementations of existing techniques can be combined.

**Thomas Morin**, ORANGE

### 09.20 From Software-Defined Networking to the Software-Defined Enterprise



The software-defined enterprise (SDE) represents a milestone in the evolutionary road of SDN, SDI, and the software-defined data center (SDDC). Based on an ecosystem centered around software-defined infrastructure involving compute, network and storage, in addition to operational components and interfaces, it shows how the enterprise can benefit from leveraging network overlays and virtualization.

**Victor M. Grado**, VERIZON TERREMARK

09.45 COFFEE BREAK

### 10.15 Extending Automation, Abstraction and Simplicity beyond Datacenter Networks

By reusing concepts and technologies such as policy controllers, network service directories, OpenFlow, Open vSwitch, VXLAN and BGP-EVPN discussing how operators can leverage datacenter and cloud networking functionality elsewhere in the network to reduce time to revenue, present a new operational model, and introduce flexible cloud networking. Discussing the trends and evolution of this concept as the cloud network moves beyond the datacenter.

**Alastair Johnson**, Principal Solution Architect, NUAGE NETWORKS

### 10.40 Alibaba Case Study



Cloud Alibaba Backgrounder  
Cloud Alibaba Architecture Goals/Requirements  
SCiON and SUPA Overview  
Cloud Ali Implementation  
Lessons Learned (best practices, successes, fails, recommendations to peers)

**Tina Tsou**, Technical Lead and Principal Engineer, HUAWEI

### 11.05 Microsegmentation and how it relates to the Datacentre SDN Overlay



Security should be part of the datacenter SDN DNA, and not afterthought to the overlay. We will review the concept of microsegmentation and explore why it is a critical aspect that needs to be inherent within the SDN overlay.

**Andy Kennedy**, VMWARE

## PROTECTION & RESTORATION SESSION

### 11.30 Topology Independent Local Protection for LDP-based LSPs



Describing a mechanism to provide local protection for LDP-based transport LSPs that relies on bypass LSPs. The mechanism provides local protection both for link and for node failure. The mechanism does not place any restrictions on the network topology - in that sense it provides topology independent local protection.

**Santosh Esale**, JUNIPER NETWORKS

### 11.55 SDN Controlled Service Chain Path Restoration



Describing the framework of protection and restoration of Service Chain Instance Path when some instances on the path fail or need to be replaced. Analyzing various schemes for service instances restoration and demonstrating a mechanism to replace instances on the chain with minimum impact to the overall service.

**Linda Dumber**, Distinguished Engineer, HUAWEI

12.30 LUNCH

## OPTICAL SESSION

**14.00 OIF Global Transport SDN Prototype Demonstration**

Reviewing the recent demo conducted by members of the OIF and ONF. The demo tested prototype transport SDN technology in a real-world cloud-bursting application to illustrate a potential deployment use case, common interfaces required, needs for interoperability, and operational challenges.

**Juergen Loehr**, OIF Representative, Director Advanced Technology, ALCATEL-LUCENT IP Transport Advanced Technology

**14.30 Scaling Inter-DC Cloud Networks with Packet-Optical Transport and Transport SDN**

Discussing emerging use cases for managing the underlay network for inter-data center networks, and how the trend towards convergence of packet/OTN/WDM technologies is beginning to shape new architectural thinking. The role of multi-layer SDN in facilitating the orchestration and coordination of resources in these use-case scenarios and in ensuring performance SLAs are properly satisfied while ensuring maximum network efficiency and utilization.

**Chris Liou**, VP Network Strategy, INFINERA

**15.00 Benefits and challenges of using a GMPLS UNI to enable IP and Optical Network Integration**

Looking at which end to end and segment protection mechanisms make sense across a GMPLS UNI. Quantifying the benefits of different combinations, including some novel protection mechanisms applicable to the UNI, and discussing control plane integration in a future where SDN techniques also play a role in IP/Optical integration.

**Matthew Bocci**, Director, Technology and Standards, ALCATEL-LUCENT

**15.30 Multi-layer Transport SDN: The Broader Context of SDN Deployments in SP Networks**

Talking about the role of SDN in driving innovation, agility and efficiency in the transport network. Covering a few use cases where this SDN capability in the IP/Optical domain can be combined with some already well talked about applications of SDN (like Service Chaining , NFV Connectivity).

**Bala Thekkedath**, ERICSSON

**16.00 Convergence as the Catalyst for Simplifying Inter Data Center Networks**

Covering the latest advances in packet and optical technologies applicable to the SDN infrastructure layer and how increased levels of convergence will allow metro network operators to greatly simplify metro networks that interconnect data centers.

**Brian Lavallée**, Director, Product & Technology Business Solutions, CIENA

**16.30 Split Control Responsibility in Multi-layer Networks: Who should do What?**

Who is responsible for restoring optical connections upon failure? An SDN controller or the distributed control plane of the network? And in the latter case: is the router responsible for initiating the process or is it the optical layer? Attempting to organize these questions according to some general guiding principles and assessing the pros and cons of each approach.

Authors: **Mazen Khaddam**, Cox Communications and **Ori Gerstel**, Sedona Systems

**Mazen Khaddam**, COX COMMUNICATIONS

17.00 END OF CONFERENCE DAY THREE



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## DATES AND VENUE

17/20 March 2015

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## ORGANIZED BY

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## TERMS OF PARTICIPATION

Full payment or Purchase Order is required for admission to the conference.

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The conference passes include: access to the conference room(s), access to the exhibition and interop event; coffee breaks, luncheons, welcome reception and slides of the speaker presentations.

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