



Readers' Choice & Innovation Awards 2015 Shortlist descriptions

1. LTE Innovation of the Year

Allot Communications **Virtual traffic detection function for vEPC**

DESCRIPTION

Allot's industry-first NFV-ready solution powers an application-aware virtualized Evolved Packet Core network for data monetization and value-added services such as security.

Service providers are looking at NFV technologies to reduce cost, achieve greater scale and flexibility and evolve network services to meet customer demands. In October 2014, Allot was the first to demonstrate the industry's first virtual traffic detection function to meet this need.

With Allot's vTDF solution, service providers can build a virtualized, responsive and standard-based policy control and charging framework for rolling out new and enhanced services – such as security – faster and more cost-effectively. Allot's vTDF provides all of the capabilities provided today by the physical TDF including traffic detection, analytics, policy enforcement and charging. The vTDF can be deployed anywhere in the network, from the RAN to the core network, to facilitate application-centric use cases and services.

Following the Internet Engineering Task Force (IETF) and 3rd Generation Partnership Project (3GPP) evolving standards, Allot's vTDF together with Allot's Element Manager (EM) enables dynamic creation and management of pre-integrated security services, such as Allot's DDoS protection and content filtering. As further proof of traction, Allot announced in July 2015 its participation in the HP OpenNFV Partner Program.

Ericsson Networks Software 15B

DESCRIPTION

Ericsson Networks Software 15B delivers world's first software-only upgrade of installed base LTE baseband hardware to support simultaneous LTE TDD/FDD operation.

The new release includes improved Cloud Execution Environment ready for demanding telecom applications.

New virtualized network functions enabling speed and accessibility, including Ericsson Virtual Router offering redundancy and scaling 20 times higher than competition.

Sue Rudd, Director, Service Provider Analysis, Strategy Analytics, says: "Ericsson Networks Software 15B offers end user and operator benefits from radio access to IP core and into the cloud that improve capacity, lower costs and simplify operations. These new capabilities provide substantial incentives for operators to upgrade."

More info:

<http://www.ericsson.com/thecompany/press/releases/2015/02/1895767>

Huawei 4.5G solution

DESCRIPTION

4.5G will enable operators with the capability to deliver the large capacity required in this transition. Some technologies have been recognized as the major capacity enablers who aim at the key performance target of xGbps peak rate.

Massive MIMO (8T8R, the hardware supporting 128T128R) is being tested in Shanghai Jiaotong University, and 256QAM is being tested in the field. Huawei completed Massive MIMO joint test with China Mobile. Huawei are doing the LAA joint test with DoCoMo, LG U+ and Vodafone.

NB CIoT (Narrow Band –Cellular IoT) is one of the key technology of 4.5G. It is the best choice for cellular IoT market. 4.5G supports up to 100K per cell connections via NB CIoT. NB CIoT technology is specifically designed for machines -to-machine connection over cellular IoT. It has deeper coverage of 20dB and much lower power consumption of 10 years battery life than current GSM. More importantly, LTE-M can be smoothly supported from 2G/3G/4G.

4.5G seeks to reduce end to end (latency) to 10ms meaning network

response time from user perspective will be limited to a few milliseconds. This reduction in latency will further improve the user experience by significantly cutting down waiting time. Industry 4.0 requires lower latency between command and execution.

This will be achieved through a much shorter process time (RTT & TTI, 0.5ms) and distributed & cloud core network, the core network function is more closer to RAN side.

Nokia

LTE-based network in a box (NIB)

DESCRIPTION

Public safety networks will gradually evolve to LTE-based technology in the coming years. Such networks must offer much higher resilience and service availability than traditional mobile networks, making the public safety market the key driver for LTE-based network-in-a-box (NIB) solutions. Commercial mobile operators can enhance services with NIB, for example by offering high quality, reliable services in remote locations. NIB for LTE includes the eNodeB and integrated EPC functions. Deployable NIB can provide communications in uninhabited areas without existing network coverage, while pre-installed NIB is an effective recovery solution for mitigating network failures.

3GPP will focus on public safety resilience and its Release 13 will specify isolated E-UTRAN operations for public safety.

Nokia is driving the 3GPP standardization of public safety specific features in Releases 12 and 13 and its products will support Rel-12 and Rel-13 public safety specific features once standardization is complete.

Qualcomm Technologies

Snapdragon X12 and X5 LTE modem for Snapdragon Automotive Solutions

DESCRIPTION

The Qualcomm Snapdragon X12 LTE modem (9x40) and Qualcomm Snapdragon X5 LTE modem (9x28) to Snapdragon Automotive Solutions aim to support connectivity across all tiers of the automotive industry.

The Snapdragon X12 LTE modem (9x40) is designed to enable auto manufacturers to develop next-generation systems with advanced telematics and connected infotainment features while supporting greater coverage at download speeds up to Category 10 (up to 450 Mbps in the downlink and 100 Mbps in the uplink). The Snapdragon X5 LTE modem (9x28) is designed to enable automakers to broadly deploy LTE in all cars at download speeds up to Category 4 (up to 150 Mbps in the downlink and 50 Mbps in the uplink).

In addition to leading LTE features, these multimode modems provide support for all major 3G/2G cellular standards, on-chip integration of global position (GNSS) support for all major constellations, and a 1 GHz processor with Linux and built-in software for key global regulatory mandates like EU eCall and ERA Glonass.

More info:

<https://www.qualcomm.com/news/releases/2015/03/02/qualcomm-drives-future-automotive-connectivity-new-4g-lte-modems>

2. Small-cell Innovation of the Year

Airvana OneCell C-RAN Small Cell

DESCRIPTION

Revolutionary new architecture for indoor LTE in enterprises and large venues

Based on cloud RAN principles, the OneCell system consists of a Baseband Controller and multiple Radio Points. Together they form a single “super” cell that delivers consistently high quality LTE service across indoor spaces ranging from 50,000 to 1,000,000 square feet without handovers or inter-cell interference issues. OneCell supports plug-and-play deployment over standard Ethernet cabling and switches, eliminating the need for proprietary networks or expensive optical links. Further, its unique small cell cloud RAN architecture dramatically simplifies radio frequency planning and integration with wireless macro networks.

“Operators and building owners look for cost-effective, IT-friendly ways to deliver small cell capabilities in enterprise and public space facilities,” said Ken Rehbehn, principal analyst with Yankee Group. “An approach like Airvana’s—which leverages standard Ethernet networks, hides complexity, isolates signaling activity, and aims to make a virtue out of small cell overlap in dense network environments—promises substantial capacity and performance gains.”

More info:

http://www.airvana.com/products/enterprise/onecell/#onecell_explainer

Ciena 3905 Service Delivery Switch (SDS)

DESCRIPTION

The need for Small Cells technology has opened up new business opportunities for backhaul network services from a variety of wholesalers including wireline operators, tower operators, and Cable MSOs that will facilitate the rollout of new Small Cells, and continue to support existing Macro Cells too.

What the Cable MSO industry needs is a platform that is purpose-built for the unique Cable MSO network infrastructure so they can effectively target the Small Cell mobile backhaul services market in an extremely cost-effective manner – enter the 3905.

The 3905 Service Delivery Switch is purpose-built for the Cable MSO Small Cell mobile backhaul services market by offering a unique feature set that not only addresses strict SLA requirements of the Small Cell mobile backhaul network application space, but also addresses the many unique aspects of a Cable MSO's network infrastructure; namely, a DOCSIS-compatible port for seamless integration into Cable MSO HFC plants, WiFi-based management port access, HFC strand mechanical mounting, Zero Touch Provisioning, and intelligent power controls.

Ericsson License Assisted Access (LAA) small cells

DESCRIPTION

Ericsson technology innovation introduces LTE to unlicensed spectrum on small cells to deliver data-speed boost to smartphones

Improves app coverage for all smartphone users, increasing speeds on LAA-enabled devices, reducing wireless network congestion and ensuring fair sharing between LTE and Wi-Fi

Ericsson is first to give smartphone users the benefit of concurrent access to both licensed and unlicensed spectrum, by delivering the first License Assisted Access (LAA) small cells.

Ericsson License Assisted Access enables carrier aggregation of licensed with unlicensed bands to effectively address growth in indoor data traffic.

Using only 4 percent of the 5 GHz band, LAA can provide up to a 150 Mbps speed increase to smartphone users. Each additional 4 percent of available spectrum used will increase the smartphone data speed further. Ericsson LAA also incorporates fair sharing within the 5 GHz band, to accommodate traditional Wi-Fi users. Fair sharing works on the principle that Wi-Fi and LAA users would have equal access to the spectrum.

More info:

<http://www.ericsson.com/news/1884277?query=LAA>

Huawei

LampSite + Service Anchor

DESCRIPTION

Huawei LampSite solution addresses the economics of indoor MBB business in 3 aspects:

- Redefine ROI and TCO through Improvements to Cost Structure:
Due to an advanced architecture, LampSite can save on cost of deployment manpower and cable significantly. Our rich deployment experience from large-scale projects worldwide shows us that our customers have saved 30% to 50% on TCO with LampSite.
- Redefine the Data Consumption Habits of End Users, from Kbps level to 10 Mbps:
With LampSite operators can transform the way they address indoor coverage and capacity challenges today, it provides data rate > 10 Mbps/ user anytime, anywhere for indoor, this greatly stimulates subscribers to use more data traffic, and improves the income of operators.
- Redefine the Network Architecture, from Analogue to Digital:
70% elements of DAS are analogue, making it hard to expand capacity and improve maintenance and monitoring. LampSite is simple, it only includes 3 parts: BBU/ RHUB/ pRRU, this minimizes the interface of the whole project. With a digital design, the cell can be split or merged on demand, to meet the request of different scenarios and MBB development phases.

Huawei Service Anchor, based on NFV architecture, supports third party interfaces, which can help operators to introduce enterprise applications and to provide excellent enterprise services. This will bring new opportunities for operators from traditional public market into the enterprise market.

ZTE

Qcell solution

DESCRIPTION

ZTE innovative Qcell solution is world first 4G indoor active distribution solution that supports multi-frequency and 2G/3G/4G multi-mode network deployment. It enables operators to offer converged network with superior indoor performance.

ZTE Qcell solution consists of Pico RRU (pRRU with n*50mw), P-Bridge, BBU and MAU (optional).

Smallest multi-mode multi-band pRRU: The pRRU is designed with embedded antenna, supports plug & play, and it's the industry smallest multi-mode (2G/3G/4G simultaneously) and multi-band (Max 4 bands simultaneously) pRRU only with 1.2L/1.2kg.

Compared with traditional DAS (Distributed Antenna System), Qcell's simplified architecture reduces construction difficulty and costs, saving around 60% deployment time.

Qcell solution guarantees both capacity and coverage, not only cell combination technology is used to optimize indoor coverage continuity, reduce the interference and handover, but also to fulfill the increasing capacity by cell split technology. And through the indoor and outdoor cloud synergy technology, Qcell solution could efficiently solve the underlying problems such as leakage and outdoor indoor signal interference, to improve the whole network performance.

3. Cloud Innovation of the Year

Ericsson Ericsson Cloud System

DESCRIPTION

Ericsson introduces new software and hardware to its Ericsson Cloud System to mitigate this need, creating new disruptive levels of performance, operations, compliance, economics and can work across multiple clouds to achieve competitive differentiation and value-add for operators and their large enterprise customers.

New products in Ericsson Cloud System include; Ericsson HDS 8000 (Hyperscale Datacenter System), built on Intel® Rack Scale Architecture, Ericsson Secure Cloud Storage and Ericsson Continuum ® delivering the world's best policy driven platform for hybrid cloud leveraging Ericsson's investment in Apcera.

Data, applications and distributed cloud infrastructures can now be automated and governed for security and compliance, meeting global enterprise policy requirements and geo specific regulations. A platform that lets business build trust in their systems as quickly as they embrace new technology.

Ericsson Cloud System adds new software and hardware to ensure highly governed, secure and hyperscale cloud is possible while increasing speed and control.

For the operator it enables the opportunity to provide competitive cloud based offerings focused on modern, automated IT, including operator cloud transformation for Network Functions Virtualization (NFV), IT and commercial

cloud.

More info:

http://www.ericsson.com/news/1898435?categoryFilter=press-releases_1270673222_c

Huawei FusionSphere

DESCRIPTION

FusionSphere is a Huawei-developed, world-class and the most comprehensive cloud OS designed for multiple industries. It can support the largest system capacity in the industries and can be applied to various service deployment scenarios for carriers and enterprises, such as server virtualization, private/hybrid clouds, and consolidation of multiple data centers.

Below are some of the innovations and technology advancement built into our FusionSphere product:

- a) Provides Agile features, including high-performance forwarding, low latency and rapid service rollout. According to the SPECvirt test, FusionSphere outperforms other products by 10%-30%. It also provides centralized management and allows service level agreements to improve efficient operation and maintenance.
- b) Provides High reliable features to meet requirements of key telecom services. FusionSphere offers active/active data centers, carrier-class resource isolation and protection, sub-health detection, system backup and disaster recovery, management node HA comprehensive features.
- c) Open architecture: developed based on OpenStack, FusionSphere consolidates cloud and non-cloud resources, heterogeneous virtualization platforms, multiple data centers, and multiple clouds. The Huawei-developed OpenStack cascading solution supports centralized management of up to 100 data centers, 100,000 physical servers, and a million VMs.

IBM Identity Mixer

DESCRIPTION

Identity Mixer is a cloud-based technology that holds potential to help consumers better protect online personal data, including date of birth, home address and credit card numbers.

Identity Mixer uses a cryptographic algorithm to encrypt the certified identity attributes of a user, such as their age, nationality, address and credit card number in a way that allows the user to reveal only selected pieces to third parties. Identity Mixer can be used within a digital wallet, which contains credentials certified by a trusted third party, such as a government-issued electronic identity card. It's important to note that the issuer of the credentials has no knowledge of how and when they are being used.

Previously available for download and demonstrated to work on smart cards, Identity Mixer is now being made available to developers as an easy-to-use web service in IBM Bluemix, IBM's new platform-as-a-service (PaaS) cloud that combines the strength of IBM software, third-party and open technologies.

More info:

<http://www-03.ibm.com/press/us/en/pressrelease/45929.wss>

Vmware vSphere 6

DESCRIPTION

VMware vSphere 6 is the newest edition of the virtualization solution for the hybrid cloud and foundation for the software-defined data center. With more than 650 new features and innovations, VMware vSphere 6 provides customers with a highly available, resilient, on-demand cloud infrastructure to run, protect and manage any application.

VMware vSphere 6 delivers breakthrough new capabilities to address the unique needs of business-critical and cloud-native applications, and drive higher performance, scale and consolidation ratios. VMware vSphere 6 will also re-define infrastructure and application service-levels and availability.

New capabilities and features include:

- Broad Application Support
- New Long-Distance Live Migration Capabilities
- Instant Clone Technology
- 3D Graphics for Desktop Virtualization
- Virtual Machine-Awareness for Third-Party

More info:

<http://www.vmware.com/company/news/releases/vmw-newsfeed/Introducing-VMware-vSphere-6---The-Foundation-for-Hybrid-Cloud/1920294>

4. SDN Innovation of the Year

Brocade

SDN-enabled Smart Packet Brokering for Mobile Service Providers

DESCRIPTION

To feed the ever-growing number of monitoring and analytics tools, operators deploy Network Packet Brokers (NPBs), which aggregate, replicate, filter, and forward network traffic to analytics tool farms. The current generation of NPBs are monolithic, inflexible, and hardware-based, requiring manual reprogramming or reconfiguration when new traffic recipients are introduced or when forwarding rules need to be modified. Moreover, these legacy NPBs are expensive and time-consuming to scale.

As networks transition to agile and scalable architectures, their network visibility infrastructures need to evolve alongside to remain relevant. Brocade is leading the charge in the transition to next-generation visibility architectures (Visibility 2.0) with the

Brocade's Smart Packet Brokering platform and smart mobility engine features the following:

- Next-generation visibility infrastructure with Brocade smart packet brokering
- Industry-leading programmable packet broker with high port density (768 10-GbE, 128 40-GbE and 64 100-GbE wire-speed ports)
- SDN-based engine that dynamically and intelligently reprograms flows on the Brocade programmable packet broker
- Real-time traffic engineering based on subscriber, application, network, and device parameters
- GPRS Tunneling Protocol (GTP) and Real-time Transport Protocol (RTP) correlation functions that reduce analytics tool scale-up costs by up to 50 percent

More info:

<http://www.brocade.com/en/products-services/network-visibility-analytics.html>

Huawei

Agile Network

DESCRIPTION

Huawei Agile Network provides multiple end to end SDN solutions from DC, branch and WAN across access part, backhaul and backbone.

a) **CloudMall SDN Based DC Solution:** CloudMall solution could be classified into 3 phases: **vDC**, i.e. to connect the physically scattered data centers into a unified cloud data center via SDN+VxLAN technology. That will lead to a centralized management that bring up the IT utilization rate by 30%, while also fits carriers' operation model by providing a public cloud service to their customers; **hybrid cloud**; and **cloud broker**, which is to setup a broker platform with the help of SDN

b) **SDN Based Backbone Solution:** SDN Based Backbone Solution includes SDN-based IP + Optical synergy, SDN-based IGW optimization (RR+). This solution realizes the automatic cross-layer route calculation and on-demand bandwidth adjustment, both of which helps to improve the backbone deployment efficiency along with its bandwidth utilization efficiency. End user service quality will also be improved.

c) **SDN Based Backhaul/Metro Solution:** SDN Based Backhaul/Metro realizes the automatic provision of mobile backhaul, fixed network, enterprise leased line. It also realizes the automatic provision of multi-layer enterprise business, which could be combined with cloud service, cloud collaboration to improve the competency within the enterprise market.

Nuage Networks

Virtualized Services Assurance Platform (VSAP)

DESCRIPTION

VSAP addresses the need for visibility and correlation between the virtual networks for applications and workloads (the “overlay”) and the physical connectivity provided by the datacenter network infrastructure (“the underlay”).

VSAP also addresses the correlation between policy-based overlay networks while preserving an enterprise’s freedom of choice in the underlying network hardware. It provides timely visibility for fault isolation, service management, and inventory management. To do so, the VSAP uses open protocols to discover and maintain topologies, and aggregates virtual and physical topologies to correlate services, analyze faults and facilitate remediation actions.

Unlike other approaches that are tied to specific hardware, the underlying intra and inter-datacenter infrastructure can consist of any networking equipment that supports standard protocols (e.g. OSPF, BGP, ISIS, SNMP). This provides enterprises building or expanding their open cloud the freedom of choice across all key elements of their infrastructure while delivering the service assurance and visibility that is critical to the operation of their cloud-based network services and the timely and secure delivery of applications to their workgroups.

More info:

<http://www.nuagenetworks.net/news/nuage-solves-challenge-to-accelerate-adoption-of-sdn-powered-enterprise-cloud-and-wan-services-with-vsap/>

ZTE iSDN solution

DESCRIPTION

Comparing to competitive products, ZTE iSDN solution has the following advantages:

Higher Performance & Less Service Delay: iSDN GW's User Plane adopts SDN forwarder for traffic transmission, so iSDN GW has higher traffic forwarding rate than pure NFV GW. The Control Plane of iSDN GW can also select the nearest forwarder to offload local traffic quickly, service delay and transmission detour are reduced.

Service Flexibility: Based on flow and user's characteristics, iSDN GW selects suitable service components and inserts them into flow's processing path, so service processing resource can be scheduled dynamically and efficiently to meet operator and user's requirement.

Better Network Reliability: iSDN GW's User Plane is distributed in different locations and scheduled by a unified Control Plane to implement geographic redundancy.

5. NFV Innovation of the Year

Cisco Systems Virtual Packet Core (VPC)

DESCRIPTION

The Cisco Virtualized Packet Core (VPC) solution redefines the paradigm of agility for service providers. It can enable operators to capture untapped revenue opportunities, particularly along with Internet of Everything (IoE) and machine-to-machine (M2M) connections.

Cisco VPC takes the promise of NFV to reality for Mobile Network Operators. With fully feature parity of the proven ASR5000 packet core series, the Cisco VPC provides a tool to create new revenue-generating services by accelerating the process of adding new enterprise and M2M customers, bringing new applications to market faster than ever before.

Features and benefits:

- Field proven stability
- Easy transformation to virtualization
- Opex and Capex benefit
- Service Flexibility and integration
- Scale for New Applications

More info:

<http://www.cisco.com/c/en/us/solutions/service-provider/virtualized-packet-core/index.html>

Genband NFV portfolio

DESCRIPTION

Genband's network functions virtualization solution fully supports the key elasticity, scalability and orchestration tenets for cloud and virtualized environments as specified by ETSI.

Genband's differentiated Virtual Network Functions (VNF) portfolio includes fully virtualized, high-performance communications signaling, control and media management solutions including Session Border Controller, Applications Server, WebRTC, Wireless Access Gateways, Intelligent Messaging and Session Routing solutions. An intelligent VNF Management framework and open APIs enable seamless interworking with other network functions virtualization and cloud infrastructure components.

Genband is working closely with leading industry ecosystems including Intel, WindRiver, HP, Nokia and Alcatel Lucent to deliver tightly integrated and differentiated end-to-end NFV solutions.

More info:

<http://www.genband.com/solutions/communications-service-provider/network-modernization/network-functions-virtualization>

Huawei CloudEdge, CloudCore and Digital inCloud

DESCRIPTION

CloudEdge Solution: Provides virtualization on network functions such as EPC, MSE (Multiple Service Engine) and UIC (virtualized Unified Intelligence Center). Its vEPC could reach cross-DC redundancy, graceful scalability and KPI-based self-heal, through the separation of database and the program.

Along with Huawei's MANO, new network capabilities – either provided by Huawei or from 3rd-party – can be easily composed and delivered on vMSE. vUIC can also provide customized network slices to its customers, according to the different business requests specified

CloudCore Solution: Provides virtualization on network functions such as IMS, SDA, SBC, DRA, etc. It could also reach cross-DC redundancy, graceful scalability and KPI-based self-heal, through the separation of database and the program.

Along with Huawei's MANO, new network capabilities – either provided by Huawei or from 3rd-party – can be easily composed and delivered. Customized network slices would also be composed and provided, according to the different business requests specified

Mitel

mOne Convergence Platform (Virtualized IMS Core suite)

DESCRIPTION

First, the Mitel software-only solutions, developed through mOne software platform, have been designed from the beginning for a virtual environment, rather than simply ported over from purpose-built legacy hardware. As a result, the breadth of carrier grade software-only solutions supported – all with highly resilient, consistent, common software code and management elements – provides tremendous flexibility and operational assurance to operators trying to smoothly integrate and migrate legacy infrastructure towards virtualized architectures. Nearly all core network functions are available through Mitel solutions developed on the mOne platform.

Secondly, Mitel has demonstrated the key advantages of NFV (i.e., significant cost savings and faster time-to-market) through commercial deployments with Tier 1 operators, not just POC or trials. The Mitel software-only solutions have enabled leading mobile service providers to quickly offer innovative services that strengthen competitive advantage and be first to market for these innovations. In addition, the flexible deployment options provide an easier, one-node-at-a-time transition path for operators navigating the operational complexity of a NFV migration.

Mitel solutions empowers mobile operator with a strong step into NFV, jumpstarts the service innovation cycle, and enables rapid scalability up or down– all while retaining legacy service parity and integrating with other elements that have not yet reached end-of-life.

VMware

vCloud for NFV

DESCRIPTION

VMware vCloud for NFV is an integrated NFV platform that will combine VMware's production-proven virtualized compute, networking, storage and management solutions with integrated OpenStack support. With support for more than 40 different virtual network functions (VNFs) from more than 30 vendors, VMware vCloud for NFV is the only platform available today that runs different VNFs from different vendors side by side on the same unified platform for the cloud. With vCloud for NFV, communication service providers (CSPs) can deploy NFV solutions into production on a proven platform to achieve faster time to market for new and differentiated services while driving sustainable cost reductions.

The VMware vCloud NFV Platform features VMware vSphere, the industry-defining compute virtualization solution for the cloud; VMware NSX, a full network virtualization platform that delivers the entire networking and security model from L2-L7 in software; VMware Virtual SAN, software-defined storage that reduces storage CapEx and OpEx; and VMware vRealize Operations, an extensible cloud management solution which will deliver purpose-built management packs to meet the unique requirements of CSPs. The platform will include full OpenStack compatibility through VMware Integrated OpenStack.

More info:

<http://www.vmware.com/company/news/releases/vmw-newsfeed/VMware-Unveils-vCloud-For-NFV-With-Integrated-OpenStack-to-Help-Service-Providers-Accelerate-Service-Innovation/1928525>

6. 5G Innovation Of The Year

Ericsson

Multipoint Connectivity with Distributed MIMO

DESCRIPTION

Ericsson's latest 5G initiative sounds deceptively simple; a 5G mobile device connects to several 5G cells at the same time, this is known as multipoint connectivity. It provides the resiliency to ensure that the device maintains a high-quality connection with the 5G network as it moves between cells. It also enables the transmission of several different sets of data signals (Multiple Input Multiple Output, or MIMO, streams) to the mobile device over the same radio frequency channel. This is called distributed MIMO, and it can increase downlink throughput by 100%. The combined technical capability is called Multipoint Connectivity with Distributed MIMO.

Multipoint Connectivity with Distributed MIMO involves very sophisticated

signaling methods, which are not part of today's LTE standards, to control the mobile device's interaction with the network. So, while LTE technology is evolving to become an integral part of tomorrow's 5G networks, 5G will also include innovative new air interfaces (including signaling, modulation schemes and other software-driven innovations) between the device and the network. Ericsson's 5G air interface initiative, labeled "NX", includes this new Multipoint Connectivity with Distributed MIMO capability.

Video: [Live 5G Test Network - Multipoint Connectivity with Distributed MIMO](#)

White Paper: [5G radio access - technology and capabilities](#)

[5G Media Kit](#)

[Ericsson and King's College London collaborate to realize the potential of 5G](#)

[Ericsson 5G delivers 5 Gbps speeds](#)

Huawei Technologies

5G new air interface on sub-6GHz band

Huawei's "5G new air interface" features a set of 5G technologies introduced to improve spectrum efficiency on sub-6GHz band by 3 times; new technologies include SCMA (Sparse Code Multiple Access), F-OFDM (Filtered-Orthogonal Frequency Division Multiplexing), massive MIMO, polar code (channel coding technology), full duplex etc.

Huawei completed a large scale field test of new air interface. The test performed together with NTT DOCOMO proves that the new technologies proposed by Huawei can support up to 24 layers, the largest number of layers achieved in the multiple-user massive MIMO scenario. The test also proves that SCMA can increase the number of uplink connections by 300%, compared with 4G/LTE with the same frequency resource and 70-80% downlink throughput gain. Furthermore, the test verifies the feasibility of user data transmission through the protection band of F-OFDM and the support of synchronizes transmission.

<http://pr.huawei.com/en/news/hw-415290-5g.htm>

<http://pr.huawei.com/cn/news/hw-415731-5g.htm>

<http://pr.huawei.com/en/news/hw-444980-deepinnovation.htm>

<http://pr.huawei.com/en/news/hw-443968-5g.htm>

<http://pr.huawei.com/en/news/hw-397407-5g.htm>

Samsung and SK Telecom

3D Beamforming in millimeter-wave frequency bands

DESCRIPTION

‘3D Beamforming’, an antenna technology that supports high-speed data transmission was applied to demonstrate the record-high speed of 7.55Gbps. The technology compensates high propagation loss, which arises with the use of millimeter-wave frequencies, by producing a pencil beam and steering the direction of radio signals.

So far, millimeter-wave frequency bands were not generally accepted as a means for cellular communication due to high propagation loss. However, due to saturation of frequency bands below 6GHz used today for mobile telecommunications, mobile operators are making strenuous efforts to develop new technologies that allow for the utilization of the ultra-high frequency bands to realize 5G, the next-generation network system.

ZTE

Pre5G Massive MIMO base station

DESCRIPTION

ZTE’s Pre5G Massive MIMO base station uses space division multiple access technology improves wireless spectrum efficiency exponentially, increases both network coverage and system capacity. It allows telecom operators to maximize the use of existing site and spectrum resources. Field test results indicate that throughput of Massive MIMO base stations is 4-6 times of a traditional 8-antenna TDD BS. Massive MIMO could enable commercial 4G terminals to enjoy 5G-like user experience on top of available 4G spectrum in 2.6GHz

ZTE and China Mobile Complete Test of World’s First Pre5G Massive MIMO Base Station

<http://www.businesswire.com/news/home/20141119006912/en/ZTE-China-Mobile-Complete-Test-World’s-Pre5G#.VbnvqNJQqSI>

ZTE Signs Joint Pre5G R&D MOU With SoftBank

<http://finance.yahoo.com/news/zte-signs-joint-pre5g-r-064400872.html>

ZTE and KT Sign Strategic Partnership on 5G in Korea

<http://www.businesswire.com/news/home/20150715006714/en/ZTE-KT-Sign-Strategic-Partnership-5G-Korea#.VbnttdJQqSI>

7. Fixed Broadband Innovation of the Year

Adtran

10G wavelength symmetric ITU/FSAN for NG-PON2 FTTP

DESCRIPTION

Using the latest 10 Gigabit per second (10G) wavelength symmetric ITU/FSAN standards-based technology, Adtran is accelerating the delivery of NG-PON2 architecture by transforming the economic paradigm that typically relegates new technologies to niche or premium services delivery for several years because of higher cost points. For service providers, this is the first time both existing residential FTTP customers and early business adopters of next-generation premium technology can be immediately supported on a single, common access architecture afforded by streamlining high cost areas of the next generation architecture.

Adtran traffic engineering studies show that NG-PON2 can double the life of a FTTP network used for converged 1G residential and business services while providing an architecture that supports cost-effective 10G business and backhaul services delivery.

“Adtran’s NG-PON2 implementation has the potential to advance the adoption of 10G FTTP for residential markets by three to five years, while its increased capacity will double the life of the network,” said Jeff Heynen, research director for Broadband Access and Pay TV at Infonetics Research, now part of IHS Inc. “NG-PON2’s initial rollout was thought to primarily benefit premium business and backhaul services because of its much higher cost over GPON FTTP solutions. Adtran will dramatically change this dynamic, delivering 10G NG-PON2 solutions at costs approaching today’s volume-priced 2.5G GPON. This allows service providers to affordably scale next-gen PON deployments and provide flexibility without compromising future capabilities.”

More info:

<http://www.businesswire.com/news/home/20150513005310/en/ADTRAN-Accelerates-Path-Symmetric-10-Gigabit-Broadband#.VfOfnWDfvDM>

Cisco Systems cBR-8 Converged Broadband Router

DESCRIPTION

Cisco’s cBR-8 Converged Broadband Router is the industry’s first Evolved CCAP that helps cable operators to compete in billboard data rates. Its multigigabit broadband services can offer revenue-generating Internet-of-Everything (IoE) services to subscribers at a lower TCO over the next five years.

The cBR-8 is the first integrated CCAP product designed for DOCSIS 3.1. Our full-spectrum platform can converge: all services, including DOCSIS data services and MPEG video services, into a single chassis.

This all-service convergence functionality can reduce on-going OpEx for rack space and power at the service provider's headend, and meet the service group growth demand.

The cBR-8 is also designed to support distributed CCAP architecture (DCA) with Cisco Remote PHY technology. This can help cable providers increase service revenues with an increased number of service groups and more bits per Hertz for the network. It can also reduce OpEx by supporting one access network for both residential and business services.

Huawei

Fiber to the Door (FTTD) solutions

DESCRIPTION

Huawei Fiber to the Door (FTTD) solutions is an advanced solution in reusing existing copper infrastructure while boosting its capability to provide high speed broadband to end users. Through VDSL2-Vectoring, broadband with up to 100Mbps can be delivered while G.Fast can deliver up to 1Gbps of bandwidth.

Huawei's FTTD solution aims to help operators to upgrade their bandwidth with minimal CAPEX and OPEX. This equipment is an all-in-one box with the main equipment, power module and mdf all in one small box. It is water proof and support reverse power feeding, so no local power is required. On the other hand, it can be installed on pole supporting up to 8 users or wall installation outside customer premises for 1 user. This is certainly important as in many countries; operators are facing problems in getting site permits and power for outdoor equipment.

Huawei's FTTD solution is the first in industry to be able to achieve 1Gbps through copper with the largest equipment capacity. Operators can deploy Vectoring at the moment and upgrade to G.Fast future when required. This can save their initial investment by reusing existing copper now and reusing the same equipment in the future when higher bandwidth is required. This is certainly



important for operators as they don't need to upgrade their equipment every now and then, 100Mbps broadband will still be around for few years before a real Giga era reaches. This is a breakthrough in copper access network as it is previously believed to be unable to provide high speed internet.

8. Analytics Innovation of the Year

Amdocs

New Big Data Actionable Analytics

DESCRIPTION

Amdocs' new big data actionable analytics applications:

Amdocs High Definition Marketing Analytics accesses the large volumes of usage data, web surfing trends, social feeds and care channels to help service providers transform the practice of customer management and upselling by using dynamic micro-segmentation for improved targeting and contextual analytics to offer customers the most appropriate new product or services. This includes multi-channel engagement and interfaces into the service provider's product catalog and campaign management systems.

Amdocs Deep Network Analytics provides a holistic set of network insights from the combination of radio access feeds, deep packet inspection from the network, and customer value parameters from business support systems. The network suite helps service providers to more effectively target their network capital expenditure towards more valuable customers, improve the connectivity experience, identify network issues before they occur and obtain a deeper understanding of the network factors that drive customer satisfaction.

Amdocs Consumer and Business Satisfaction Analytics spans a wide array of data sources which allows executives to break down the siloed approach of different business units in order to assist business managers understand what drives customers' Net Promoter Score (NPS) and resolve issues before they impact customer satisfaction. These analytics also improve the performance of the call center and self-care capabilities helping to deliver an optimal customer experience.

Read more about [Amdocs' big data analytics portfolio](#)

Netscout nGeniusONE Service Assurance platform

DESCRIPTION

The nGeniusONE Service Assurance platform and Adaptive Service Intelligence (ASI) technology provide a carrier grade, highly scalable, distributed service assurance solution that takes a holistic approach to monitoring service delivery. The solution provides multi-dimensional customer experience metrics, and simplifies complex IP networks into a series of services upon which Netscout run real-time analytics, giving you the ability to focus on forensic details and quickly triage service issues.

The nGeniusONE Service Assurance platform and ASI technology helps you:

- Gain real-time visibility of all services and their network and application components

- Proactively and predictively protect service availability and performance
- Conduct comprehensive, multi-dimensional analysis of location, handset/device, service network performance in context with the performance of all dependencies
- Perform session-level, as well as deep-dive, protocol-level analysis and forensic evidence collection
- Watch over all your systems, services and vulnerabilities vigilantly today and into the future

More info:

<http://www.netscout.com/product/service-provider/ngeniusone-platform/>

IBM Watson Analytics

DESCRIPTION

Watson Analytics is a breakthrough natural language-based cognitive service that can provide instant access to powerful predictive and visual analytic tools for businesses. According to analysts, only a small fraction of business people use powerful analytics tools as part of their decision making today. Watson Analytics is designed to make advanced and predictive analytics easy to acquire and use.

Unlike analytics offerings designed primarily for data scientists and analysts predominantly focused on visualization, IBM Watson Analytics automates steps like data preparation, predictive analysis, and visual storytelling for business professionals across data intensive disciplines including marketing, sales, operations, finance and human resources.

Three key innovations can greatly reduce the skills required to engage in advanced analytics:

- Single Business Analytics Experience
- Guided Predictive Analytics
- Natural Language Dialogue

More info:

<http://www.ibm.com/news/hk/en/2014/09/16/A598143O05039J20.html>

SAP

hybris Marketing solution

DESCRIPTION

SAP hybris Marketing solution unifies customer data into one centralized hub and allows companies to unleash the power of truly contextual marketing. Having real-time context-based data about individual customers and anonymous visitors enables brands to deliver contextual, consistent and relevant experiences throughout a customer journey, regardless of the marketing channel or device. Adding telco industry functionality to the SAP hybris Marketing solution sets a new standard for telco marketers, and is expected to improve their current marketing programs and open up new avenues to serve customers with relevant contextual marketing.

The SAP hybris Marketing solution uses real-time contextual data to continuously update a 360-degree profile of both identified customers and prospective customers. This dynamic profile spans what each customer has done in the past, what they might do in the future and what they are most interested in at any moment in time. Using powerful targeting tools, marketers can reach customers through one-to-one personalized campaigns on the Web site, via e-mail, or through digital display advertising. They can trigger a sales or service call or push messaging to mobile applications and devices. Campaigns can be automatically triggered by customer behaviors in real time, planned and scheduled by marketers or created ad hoc by marketers with a few mouse clicks.

More info:

<http://news.sap.com/sap-announces-contextual-marketing-platform-designed-telcos/>

Tektronix Communications TrueCall FOR VoLTE

DESCRIPTION

Tektronix Communications' latest release of TrueCall, developed by its wholly owned company Newfield Wireless, further enhances the company's VoLTE and single radio-voice call continuity (SRVCC) troubleshooting and optimization capabilities.

The combined solution ensures operators have access-to-core visibility across multiple networks, comprehensive VoLTE service KPIs, expanded subscriber experience management and supplementary VoLTE service support, among other features.

With SRVCC capabilities, TrueCall ensure seamless call handover from LTE to legacy networks. New VoLTE services are becoming increasingly common

with the launch of VoLTE-enabled devices, such as the iPhone 6 and iPhone 6 Plus.

More info:

<http://www.tekcomms.com/about-us/news/truecall-expands-support-volte>

9. CEM Innovation of the Year

Nokia

Predictive marketing via CEM on Demand + Mobile Marketing Suite

DESCRIPTION

Nokia's predictive marketing brings customer experience and network analytics from our award winning CEM on Demand solution together with the Mobile Marketing Suite which enables rapid campaign creation, provides analytics to predict consumer behavior and includes insights from interactions with the operator.

This offering gives operators the ability not only to create personalized campaigns in an hour rather than in weeks but can also predict what target groups will take up the campaign. This gives greater potential for increased revenues and retention. One operator was able to increase their click-through rate increased from 4% to 25%.

CEM on Demand can be used across all departments of the operator for customer experience and network analytics, while the Mobile Marketing Suite brings together this information with the analytics of customer interactions with the operator.

Operators today tend to average 2-4 weeks for their campaign creation because gathering the information from across organizational silos takes time and then analysis to create target groups takes longer still. With this innovation, campaign creation is not only smarter and better targeted, but faster as well. One hour to create a useful campaign that increases revenue is amazing.

NetCracker

Netcracker 10 Suite

DESCRIPTION

NetCracker 10 combines capabilities in virtualization, cloud-based delivery of applications, embedded analytics and biometrics onto a single, unified platform. With these capabilities, NetCracker 10 fundamentally redefines the economics of network deployment and management, IT operations, customer experience and service creation and delivery.

Using its revolutionary single-platform approach across network, service and customer domains, NetCracker 10 enables communications service providers to migrate seamlessly from existing environments to the next generation of virtualized networks and IT infrastructure.

The capabilities incorporated in the NetCracker 10 suite have demonstrated numerous financial and operational improvements including: up to 40 percent reduction in total cost of ownership; more than 30 percent increase in infrastructure utilization; up to 30 percent increase in net promoter score.

“Extreme competition in the communications marketplace has forced operators to deliver and differentiate their offerings with superior customer experience. Advanced analytics and biometrics-driven CEM solutions will help operators humanize their customer experience initiatives and deliver expected levels of customer experience,” said Sheryl Kingstone, Research Director at 451 Research. “NetCracker 10’s CEM solution, which seamlessly brings together advanced analytics, big data and biometrics, will help operators transform their customer experience programs.”

“As service providers make the transition from network virtualization trials to commercial deployments, they require vendors to demonstrate the business value of a wide range of solutions, including network and service orchestration, control and infrastructure, and how physical and virtual networks will coexist,” said Dana Cooperson, Research Director at Analysys Mason. “NetCracker 10 is an example of a flexible, comprehensive, pre-integrated platform from which communications service providers can design, deliver and monetize classic and new digital economy services in a hybrid environment.”

More info:

<http://www.netcracker.com/company/news-and-events/press-releases/netcracker-launches-revolutionary-netcracker-10-suite.html>

NICE Systems Complaints Management Suite

DESCRIPTION

The NICE Complaints Management Suite helps organizations manage customer dissatisfaction at an early stage, prevent the escalation of complaints, and proactively address the issues that lead to customer grievances.

The NICE Complaints Management solution is based on a unique combination of advanced speech, text and desktop analytics. This allows companies to automatically detect complaints inferred from customer interactions across various channels. It also provides a platform to manage

and monitor complaints status, generate reports and statistics, and proactively resolve customer issues before they are escalated.

For example, during a conversation with a customer, the analytics engine will detect a specific phrase like “this is unfair.” The interaction is then classified as a potential complaint and is pushed, via the Complaints Dashboard, to a complaints officer for further review. This also triggers the opening of a case file for further investigation and management.

More info:

<http://www.nice.com/engage/press-releases/Got-a-Complaint-New-NICE-Solution-Tackles-Customer-Grievances-Headon-to-Create-Perfect-Experiences--374>

Amdocs

CES 9.3

DESCRIPTION

Amdocs CES 9.3 is the company's latest portfolio release introducing new solutions for online commerce, interactive bills, big data marketing, care and network analytics, as well as cross-portfolio enhancements to improve system performance. As a result service providers are able to inspire customers with exciting services, create intelligent interactions and deliver a dynamic quality of experience, all the while accelerating business value.

Amdocs CES 9.3 spans industry-specific business and operational support systems (B/OSS) and network control and optimization systems. Continuing to build on strong portfolio integration, Amdocs CES 9.3 enables service providers to respond to the multi-dimensional market demands that are driving The New World of Customer Experience™, an era where service providers are expected to offer innovative and personalized services, delivered consistently across channels and with a seamless network service experience. This latest portfolio release also accelerates business value for service providers by streamlining complex operating environments, driving cost reduction and speeding time to market for new products and services.

More info:

<http://www.amdocs.com/news/pages/latest-portfolio-release-enables-new-world-of-customer-experience.aspx>

Polystar

Customer Insights solution

DESCRIPTION

Polystar's Customer Insights solution enables operators to address the challenges of understanding and enhancing customer experience. The Customer Insights suite, comprising Subscriber and Network Analytics, provides visibility of both an individual subscriber's experience and a consolidated view of the entire subscriber base.

The Customer Insight suite provides deep and specific insight – based on real big data from inside operator networks – on the experience of individual subscribers as well as a consolidated view of the complete subscriber base. This means that every operator can make sense of its own unique data and obtain the intelligence to deliver outstanding performance and enhance customer experience.

Polystar's unique proposition is the ability to provide end-to-end visibility of services: from the perspective of an individual subscriber to a network-wide holistic view. Real-time network data is captured, aggregated, correlated and presented in a manner that is defined by an operator's own criteria. This enables customised, configurable reports to be created for individual departments and delivered in a regular schedule. In turn, this allows different stakeholders to focus on metrics that matter to their unique needs.

10. Network Optimization Innovation of the Year

Gladiator Innovations G-Station

DESCRIPTION

Gladiator g-station is a desktop-based open platform tailored for the optimization of cellular networks.

The solution suite comes with a comprehensive set of engineering tools for drill-down troubleshooting and reporting. The platform debuts the industry's first fully embedded customization and automation engine. Now, you are empowered to customize, automate, and streamline your engineering best practices into standardized and repeatable workflow. The platform features enabling applications and tools tailored to the specific needs of Network Operators, System Integrators, Engineering Services Providers, Test and Measurement Manufacturers, and Infrastructure Manufacturers.

Through its revolutionary open, flexible and lightweight architecture, g-station enables customers to reduce operating expenses, standardize business and engineering processes and encapsulate trade secrets and other IP into customized software applications for automation.

More info:

<http://www.gladiator-innovations.com/solutions/open-platform/g-station/>

Amdocs

Centralized Management and Optimization Solution

DESCRIPTION

Amdocs Centralized Management and Optimization Solution helps service providers to squeeze better performance, better customer experiences and greater return on investment (ROI) from their existing networks and accelerate the rollout of new technologies including VoLTE.

Amdocs Centralized Management and Optimization Solution is the only optimization solution that embeds multi-technology and multi-vendor network intelligence that focuses on improving network performance. It enables service providers to target network investments accurately, use resources more efficiently, and deliver optimal coverage and capacity in complex multi-vendor networks across 2G, 3G, and LTE/ 4G, providing customers with a seamless quality of experience.

Key capabilities include:

- Customer Experience Geo-Location which enables speedy resolution of experience issues by isolating the subscriber, location, handset and activity problems. It also enables accurate targeting of network investments and optimization that boost coverage and capacity where it matters. A service provider has reduced corporate customer dropped calls by 75% as a result.
- Automatic Intelligent Correlation which automatically collects correlates and analyzes network data to identify problems, proposes short-term operational and maintenance fixes and long-term optimization solutions, such as triage. This saves engineers' time and allows them to focus on proactive network optimization activities.
- Self-Optimizing Networks (SON) providing automated real-time optimization which is proven to deliver 10% faster mobile broadband speeds, 20% increase in capacity utilization, and 40% fewer dropped calls.

Read more about [Amdocs Centralized Management and Optimization solution](#)

Cisco Systems

WAN Automation Engine

DESCRIPTION

The Cisco WAN Automation Engine is a powerful and flexible SDN platform that automates the engineering and operations of multivendor physical and virtual WAN infrastructure. By abstracting and simplifying the network domain while making it fully open and programmable, the Cisco WAN Automation Engine provides a consistent operational experience for optimizing and

deploying new services such as global load balancing, bandwidth on demand, and premium network routing. It allows service providers to optimize their network infrastructure through the continual monitoring and analysis of networking elements and applications and to offer new services being delivered. To stay competitive, service providers need to do more than just re-engineer their networks. Service providers need to rethink how they engage with their customers to meet their business needs.

The Cisco WAN Automation Engine reflects an evolutionary approach that combines the best of both distributed control plane and server based control approaches. Distributed control planes are utilized for normal traffic and server-based software for the ever-increasing quantity of traffic that requires special handling. Server software brings with it the benefit of being fast to develop and allows the use of open source tools, which support a GUI-driven front end and ultimately allow the customer to take control and develop capabilities suited to their unique needs. Policies that are handled today with Border Gateway Protocol (BGP), Resource Reservation Protocol Traffic Engineering (RSVP TE), or Access Control List (ACL)-based forwarding can be handled through a centralized controller running on a server. The use of open APIs and standardized protocols (such as Representational State Transfer [REST]) at the orchestration layer provides a simple means for intelligent interaction between applications and the network. Applications now have visibility into the global network and can also make requests for specific service levels. This visibility and automation capability is delivered in a completely non-disruptive way without need for new network hardware or major infrastructure upgrades.

The Cisco WAN Automation Engine provides a cross-sectional view of traffic, topology and equipment state and takes advantage of a predictive analytical model that performs “what-if” analysis based on failure impacts. These simulations can be performed at the rate of hundreds of thousands per second, and they provide a centralized, high-fidelity view of the network. This allows operators to predict the behavior of the network across planned and unplanned changes. The explicit handling of new traffic demands based on how they affect the current network state helps ensure that networks can run at their optimal utilization, with predictable performance and around link or node failures. As new demands are added to the network, the Cisco WAN Automation Engine promotes end-to-end optimization and load balancing within specified constraints in conformance with policies to help ensure compliance with SLAs.

Ericsson

App Experience Optimization

DESCRIPTION

App Experience Optimization is a new service that transforms how operators optimize their networks to meet the new demands created by a fast-evolving app ecosystem. The service addresses this challenge by providing a true

picture of the local app experience and correlating this with network-related KPIs, which can then be acted upon. Ericsson Network Design and Optimization experts then optimize for app experience, drawing upon global experience, tools and methods.

In a recent [project](#), Ericsson optimized XL Axiata's network for performance of the Facebook app - making substantial, targeted improvements to XL Axiata's network. As a result, app experience - defined by the ability to complete transactions within a maximum time of three seconds - improved by between 20 and 70 percent. Time to content improved by up to 70 percent, while upload time improved by up to 50 percent. These results show that it is possible to optimize app experience using existing network resources.

Ameet Suri, Partnerships Manager at Facebook, says: "In addition to building apps that use less data, we need more efficient infrastructure to serve people in low-bandwidth areas. Over the last year, we have worked with Ericsson and XL Axiata in Indonesia to create a methodology to analyze, monitor and improve end-to-end network performance for app experience. This methodology will help operators cost-effectively target network improvements in the areas that affect users most, thereby delivering greater utility for the two-thirds of the world not yet connected. Initially launched with XL Axiata, we are excited to expand the program to more operators who have expressed an interest."

More info:

http://www.ericsson.com/news/1895777?categoryFilter=press-releases_1270673222_c

Astellia Nova RAN Optimizer

DESCRIPTION

As a result of the integration of Ingenia Telecom's radio expertise with Astellia's 15 years of RAN optimization, the Nova RAN Optimizer solution now empowers radio engineering teams with customer-centric geo-location and SON capabilities to maximize access network performance, while increasing optimization teams' efficiency through automation

The massive multi-technology & vendor agnostic radio optimization solution uses network equipment call traces and 100% of subscribers' activity to provide automatic detection of RF issues, recommendation of parameter changes and uses geo-located network data to improve the customer experience. On top of that, Nova RAN Optimizer is Centralized SON (C-SON) ready which means that it can automatically push recommendations to the OSS.

Mobile operators can now gain improved operational efficiency thanks to

automated problem detection & parameter reconfiguration, reduce drastically drive tests by 90% by geo-locating every subscriber and target optimization activities on high value locations such as tourist attractions, shopping malls, business centers, roads, airports and high speed train lines.

“Optimize the RAN and you optimize the business. It’s as simple as that, conceptually. However, it takes sophisticated tools to optimize a RAN that simultaneously meets the requirements for customer experience, network performance, demanding real-time applications and operational efficiency,” said Tim McElligott, senior consulting analyst at Stratecast | Frost & Sullivan. “Through acquisition and internal development, Astellia has assembled a RAN optimization approach that includes essential capabilities in geo-location, analytics and radio performance monitoring that meets this challenge.”

More info:

<http://www.astellia.com/en/Astellia-introduces-Nova-RAN-Optimizer-for-automated-and-geolocated-radio-optimization>

11. Optical Network Innovation of the Year

Infinera

Cloud Xpress metro optical platforms

DESCRIPTION

The Cloud Xpress is a family of metro optical platforms designed for network operators delivering Cloud-based services to consumers and businesses worldwide.

The Cloud Xpress platform is optimized for the metro Cloud, the transport network that provides data center connectivity within a metro area. A small, stackable platform, Cloud Xpress is designed to simplify the deployment of high-bandwidth connections while lowering the power and space required to scale metro Cloud networks.

As Cloud adoption increases, large network operators are reporting a magnification effect on incoming traffic, such that a single request from an end user can generate a dramatic increase in the amount of East-West traffic between data centers. This magnification effect is dramatically accelerating the deployment of high-capacity transport solutions into the metro Cloud. The Cloud Xpress is designed specifically to address this need.

“As Cloud applications and services have grown in importance, the need for high-speed data center interconnection has grown at a very high rate,” said Paul Parker-Johnson, practice lead, Cloud and virtual system infrastructures at ACG Research. “This has generated the need for new transport solutions with leaner form factors, higher densities and superior operating efficiencies. Cloud Xpress is well-positioned to participate in the emerging service provider data center interconnect transport market, which we expect to reach \$4 billion

by 2019.”

The Infinera Cloud Xpress features one terabit per second of input and output capacity in just two rack units with up to 500 gigabits per second (Gb/s) of line-side capacity and a mix of 10 gigabit Ethernet (GbE), 40 GbE and 100 GbE client-side interfaces. The Cloud Xpress is designed with a rack-and-stack form factor and a new software approach that enables it to plug into existing Cloud provisioning systems using open software defined networking application programming interfaces. In addition, the Cloud Xpress consumes half as much power as the leading solutions from the vendors providing comparably-sized metro Cloud platforms.

In June, Infinera announced the expansion of the Cloud Xpress family of metro Cloud platforms. This release adds a new Cloud Xpress platform with 100 gigabit Ethernet (GbE) client services in the same compact form factor along with enhanced functionality.

More info:

<http://www.infinera.com/go/cloud>

ZTE

100G OTN solution

DESCRIPTION

With PM-QPSK modulation, Soft Decision FEC technology, and improved OSNR tolerance, the ZTE 100 GB/s system can reach over 3,500 kilometers without electrical regeneration. Industry's most advanced DSP processing technology can support 60ps of PMD tolerance and ± 70000 ps/nm of chromatic dispersion tolerance. ZTE 100Gb/s system supports 3000km transmission distance without chromatic dispersion compensation and PMD compensation, will significantly save investments and greatly facilitate maintenance.

Client card supports multiple services access including STM-N, FE/GE/10GE/40GE/100GE, OTU1/2/3/4, DVB, ESCON and Fiber Channel services.

Intelligent and Three-Dimensional Service Scheduling and Grooming Capability in support of WASON, 100G products incorporate ROADM technologies including WB, PLC and WSS, electrical cross-connect technologies to build an intelligent and multi-layer service grooming system.

CapEx Reduction: The equipment can realize service interworking and they can use the same boards so as to provide full of WDM solutions at different network levels, reduce quantity of spare parts and cut down TCO of the customers to the fullest extent. The line side and client side are separated to increase board integration. The separation of client side and line side can

aggregate various different client-side services to the same line-side board to share the bandwidth, which effectively increases bandwidth utilization rate.

OpEx Reduction: With the industry leading 40nm process ASIC chip, SD FEC and advanced coherent demodulation algorithm can be effectively integrated to achieve higher levels of integration and lower power consumption compared to the 65nm process, in line with the industry's green trend.

MRV Communications

Dynamic Wavelength Routing For Optidriver Platform

DESCRIPTION

MRV Communications has enhanced its flagship OptiDriver optical transport product line with dynamic wavelength routing for intelligent optical network control capabilities, enabling service providers to create a more seamless transition to automated, flexible networks to intelligently support unpredictable traffic and bandwidth needs.

Dynamic wavelength routing allows individual wavelengths to move flexibly across the network via software, making it simpler for operators to add new services or address changing service demands. Built on Reconfigurable Optical Add-Drop Multiplexer (ROADM) hardware, this approach is especially useful in ring and mesh networks where demands are large and unpredictable due to redundant paths to multiple locations or multiple links between locations.

The enriched OptiDriver solution is fully integrated into MRV's advanced Pro-Vision® service provisioning and management software that enables remote point-and-click service turn up and circuit reconfiguration. In combination with the highly programmable ROADM and open LINUX operating software, the OptiDriver solution contains the comprehensive building blocks for optical SDN. This approach reduces time-to-revenue and saves operational expenses to significantly increase service velocity and deliver an improved ROI.

More info:

<http://ir.mrv.com/mobile.view?c=103858&v=203&d=1&id=2024570>

12. OSS Innovation of the Year

Cisco Systems

Network Services Orchestrator

DESCRIPTION

NSO addresses three key challenges for CSPs:

- Service agility. CSPs need to reduce their time-to-market for new services from many months (in some cases, years) to weeks. One of the main reasons for the current service agility problem is that services are hard-coded in the network and in the OSS layer. This means that CSPs need to re-architect the network and the OSS for every new service.
- Operational efficiency: CSPs need to automate network operations in order to drastically reduce the production cost of their services. Many complex services, such as VPNs, are most often managed manually or with solutions that have unacceptably high manual fall-outs.
- Migration to next-generation NFV-based networks.

Comptel Comptel Operational Intelligence Module (COIM)

DESCRIPTION

The Comptel Operational Intelligence Module (COIM) performs service monitoring in real time, and detects any deviations in the usage data processed by Comptel's EventLink platform. With the automatic triggering of early warnings, supported by machine-learning capabilities, operators can respond quickly to these anomalies and identify root causes, protecting their revenues, as well as better understand network and service behaviour to effectively plan for future usage against system resources.

COIM is the result of closely linking analytics, prediction and machine learning capabilities (Comptel's DATA FASTERMIND™ solution) with data collection, processing and refinement capabilities (Comptel's DATA REFINERY™ solution).

Key benefits include:

- Faster access to “sleeping revenue”
- Operational efficiency through automation
- Real-time view of different business streams and forecasting
- Ability to detect anomalies early stage and identify root cause

Comptel rolled out two SOFTBLADES (COIM extensions) in just two weeks' time, which delivered immediate results. FarEasTone was able to quickly see that an abnormal amount of call detail records (CDRs) were being rejected - this insight prompted them to take action in a timely manner, so no revenue was lost.

Ericsson

Adaptive Inventory 9.3

DESCRIPTION

Ericsson Adaptive Inventory provides 360 degree-view of dynamic network and service assets.

Innovative OSS/BSS solution gives customers full control to build customized applications for critical agility and autonomy.

As operators spend more on software to speed cloud deployments, virtualize network functions and grapple with surging data traffic, Ericsson Adaptive Inventory brings the full visibility and control that operators need to advance networks. This includes autonomy to build new technologies, capabilities, web-based GUIs and applications.

Ericsson Adaptive Inventory, formerly Ericsson Granite Inventory, uses data from a broad range of available sources to offer the most complete view of a network at any given moment, including past, present and future configurations. The result is faster service rollouts, improved trouble resolution and new network efficiencies as mobile data and IP-centric service delivery becomes more fluid. It features an enhanced Unified Inventory Engine, intuitive web interface, component-driven design automation, and system extension kit. Ericsson has created a migration path to Ericsson Adaptive Inventory for existing Ericsson Granite Inventory customers.

More info:

http://www.ericsson.com/news/1925427?categoryFilter=press-releases_1270673222_c

13. BSS Innovation of the Year

ZTESoft **ZSmart API Management Solution**

DESCRIPTION

ZSmart API Management solution is designed to help CSPs to cope with the threaten of OTT in the digital era. It could help CSPs to orchestrate and open their valuable capabilities, including the capabilities of connect, channel, brand, customer loop, payment, analysis, calculation, storage and etc., and make those capabilities into money.

ZSmart API Management is more like to provide a business host platform. This platform host all kinds of 3rd party partners and allow partners to acquire CSP's open capabilities which are going to be embedded into their own

products/services so as to create a new attractive service to serve customers. By this way, CSP and partners use the advantages of both sides to fight and develop together. They co-produce service, share channel, co-build brands, and share revenue and profit.

ZSmart API Management is designed to address the cooperation and then perfectly supports all the cooperation modes including sell-through, sell-of, sell-to, and sell-with. In a functional view, it consists of 3 main function components:

- 1) API Hub
- 2) Partner Management
- 3) Partner Billing.

In a technical view, it uses SOA concept to build a bridge between backend IT system and front-end application, which enables a clear and flexible IT architecture that allows 3rd party partners to easily access CSP's capabilities and quickly re-build and issue services.

Elitecore Technologies

Bill Shock Prevention and Real Time Credit Control

DESCRIPTION

Elitecore's Real time Credit Control is the right fit for service providers to bring subscriber value through personalized offerings ensure network utilization and greatly increase ARPU by enhancing customer experience. Crestel Online Charging System(OCS) empowers subscribers keep track of their account, services, usage in real time, with support for dynamic notifications to customers prior to reaching their credit limit thresholds, Real-time Credit Policy Management for configuring credit limit rules which form business rules for credit control. These Credit-Limit Rules comprises Action to be performed when the customer's service usage range is reached.

Some other features of Elitecore Real Time Credit Control Solution includes:

- Support for event based and session based metering
- Support for variety of services, network types, subscribers types, customer segments, etc
- Customizable actions to enforce usage control on breach of credit limit
- Empower customers to take control of their usage & set usage limits, real time view of usage on MSelf Care (Mobile Selfcare)
- Support limiting excess usage charges for services by limiting/restricting services when limits are reached
- Support credit limit top-up to increase the credit limit
- Opportunities for real-time interactions between operator & customers, thus improving customer experience and enhance operator's ability to serve customers better

- Availability of a variety of customized targeted rating plans such as voice/data rating, discount rating, step rating, etc
- Open & modular solution architecture enabling easy integration with existing components such as CRM system, Provisioning system, Billing system, Financial system, etc

Elitecore offers competitive edge as compared to other vendors in the market as it offers Direct Engine Interface with Diameter Embedded in memory and not running as separate application most of our competitors offer Diameter Charging – Via charging Gateway this Increase latency and makes prone for failover in multiple instances and operations cost, hardware cost are higher.

CSG International

CSG Ascendon Digital Services Platform

DESCRIPTION

CSG Ascendon is a digital services platform that allows CSPs, content producers and retailers to launch, scale and monetize new digital services such as movies, music, games, home security and more. By overlaying existing BSS and other technology systems, CSG Ascendon enables providers to quickly launch new digital services without uprooting existing infrastructure.

CSG Ascendon offers an overlay strategy that enables providers to quickly define, deliver, analyze and refine new digital content or service offers. The platform gives providers a better method to support always-connected consumer experiences across devices with the addition of cloud-based consumer profiles, preferences, digital entitlements, e-wallet and payment options. Ascendon leverages CSG's extensive experience with SaaS to minimize initial costs and risk for providers as they evolve their approach to service presentation, ordering, delivery, payments and revenue settlement.

Ascendon offers four solution configurations that unify CSG Content Direct® and the company's market-leading BSS products into an integrated platform that supports various stages of digital service evolution:

Evolved Customer build, manage and monetize new customer relationships for digital services across multiple devices and payment methods.

Digital Commerce merchandize digital products and services with offer and order management.

Network Commerce monetize network provider assets in new ways using charging, policy and network control.

Business Transformation enable DSPs to deliver traditional services while rapidly introducing new digital services.

14. Data Center Innovation of the Year

Ciena

Waveserver Data Center Interconnect Platform

DESCRIPTION

With over 6,000 data centers globally, and interconnect requirements growing at 30-40% per year, the proliferation of data centers is fueling enormous network growth. However, today's networking equipment consumes too much space and power, and it doesn't scale well which results in a high cost of connectivity and complexity in operations.

Waveserver is unique in the market – it integrates optical networking with a web-scale IT toolset to tackle scalability and automation challenges in metro Data Center Interconnect (DCI). It leverages open interfaces for integration with existing software tools, and it utilizes best-in-class optical technology to provide high-speed connectivity over any fiber in the metro.

Waveserver's industry-leading density reduces footprint and power consumption. Instead of being 3-6 feet tall, Waveserver is only 1.75 inches tall (the height of a pizza box). It provides two wavelengths of 200 Gb/s using 16QAM modulation, one of the most advanced modulation schemes for optical transmission. This equates to 400 Gb/s of total wavelength capacity, which is 60% more per Rack Unit (RU) than competing available solutions. In other words, Waveserver is fast - enabling 400 Gb/s speed equates to downloading 12 two-hour HD movies in one second. And, as traffic increases, it can scale up to 25 Tb/s per fiber.

Waveserver's entire lifecycle, from planning and ordering to provisioning and maintenance, has been simplified for ease of use. Waveserver can be turned-up in minutes instead of hours, and it can be managed easily from an app running on a tablet. It's the first DCI platform that is highly programmable with open APIs and a virtual emulation and testing environment. Waveserver can be plugged into back office tools (using YANG models as well as XML and JSON via REST). Like a smartphone, Waveserver can use any custom-built app, such as apps for enhanced shelf visualization, fault/capacity issue notification, or detailed performance monitoring.

Huawei

Service Driven-Distributed Cloud Data Center (SD-DC2)

DESCRIPTION

With the Huawei service driven-distributed cloud data center (SD-DC2) as reference architecture and the OpenStack-based cloud OS FusionSphere as

the core, and the OpenStack-based cloud OS FusionSphere as the core, the Huawei cloud transformation solution uses IT infrastructure (server, storage, and network resources) to build a standard and shared cloud resource pool, improves resource utilization and reduces OPEX by migrating existing services (such as VAS and BSS) onto cloud, and assist carriers to expand new services (such as public cloud) to increase revenue. Based on automation and process orchestration technologies, users can install hardware, middleware, OSs, and applications by dragging icons on the network management interface. In this mode, services can be deployed within days instead of months, quickly responding to business requirements and market changes.

More info:

<http://www.huawei.com/minisite/mwc2015/en/articles/cloud-transformation.html>

Cisco Systems Virtual Managed Services Solution

DESCRIPTION

Enables service providers to offer secure customizable cloud based network services to their customers in the way their customers want to consume them. End customers can select/buy their cloud network services via a self-service portal from a comprehensive site of cloud VPN, cloud MPLS, cloud intelligent WAN and optional security applications. From the time the request their service(s) , they are up and running in minutes. The only thing the end customers may need to do is plug in their CPE device.

The provisioning and orchestration is completely automated using standardized YANG database models of the service intent mapped to all physical / virtual elements , including SDN controllers, VNF Managers, and Virtual Infrastructure Managers. Cisco VMS makes these services easy to sell, manage, and deploy -- helping operators to accelerate and grow their revenues while reducing their operational costs by up to 76%.

Cisco VMS is priced/package using a success based model with flexible software licensing that accelerates the operators return on investment. Cisco VMS is open and modular and operators may add third party VNFs and applications to further expand their service offerings.

More info:

<http://www.cisco.com/go/vms>

Brocade SDN Controller

DESCRIPTION

Brocade SDN Controller is an OpenDaylight-based, open source SDN controller designed to give network operators the benefits of a programmable infrastructure without vendor lock-in. The Controller can manage switches, routers, firewalls, VPNs, load balancers and other elements of both virtual and physical networks.

As Brocade SDN Controller is entirely based on OpenDaylight without proprietary extensions, apps written for Brocade SDN Controller will run on any other OpenDaylight controller, of which there are many.

Unlike other vendors, Brocade has committed to contributing any enhancements made to the Brocade SDN Controller back to the community to ensure interoperability with other OpenDaylight-based controllers on an ongoing basis. As a result, new features, functions and enhancements are incorporated on a frequent cadence, as opposed to traditional bi- or triennial management software updates.

More info:

<http://www.brocade.com/en/products-services/software-networking/sdn-controllers-applications/sdn-controller.html>

15. Test & Measurement Innovation of the Year

Accedian Networks SkyLIGHT VCX Virtualized Instrumentation

DESCRIPTION

First fully virtualized, real-time performance monitoring solution that provides uniform QoS and QoE visibility over multi-vendor networks. Details here: <https://goo.gl/JmjnoV>

SK Telecom Nationwide Roll-Out, 100 other service providers in 35 Countries deploying this solution due to compelling cost disruption and visibility. See case study here: <http://goo.gl/yBDoYe>

Viavi TrueSpeed VNF

DESCRIPTION

TrueSpeed VNF is the first solution capable of assessing customer quality of

experience in a virtualized computing environment. TrueSpeed VNF helps service providers proactively resolve customer complaints about poor network performance.

TrueSpeed VNF delivers service provider workforce efficiency benefits, including reduction in service call times, reduction in dispatches and increased testing flexibility. Service provider adoption of TrueSpeed VNF drives up to a 40 percent reduction in customer services costs.

TrueSpeed VNF is a breakthrough virtual test technology because it provides centralized, software-based test capabilities with embedded software clients that generate standardized measurements. Operators can now streamline troubleshooting from a central site (ie., a call center) and generate replicable and easy-to-understand throughput measurements resulting in increased customer satisfaction with fewer service technicians dispatched.

“As networks move toward becoming virtualized, operators must access solutions that are standardized for what it takes to meet the high demands of ensuring service quality in complex virtual network settings – TrueSpeed VNF is a game changer,” said Olga Shapiro, program manager for Measurement and Instrumentation at Frost & Sullivan, a global research group. “Impressively, JDSU has broken through with the first industry-compliant test software that serves the virtualized environment. An innovation perfectly timed while NFV and SDN stay top of mind as both challenging and promising network architectures.”

More info:

<http://www.viavisolutions.com/en/corporate/media-room/news-releases/jdsu-launches-virtualized-test-solution-nfv-sdn-networks>

Anite Virtual Drive Testing Toolset

DESCRIPTION

Virtual Drive Testing Toolset is an automated, lab-based performance and interoperability test solution for cost-effective assessment of mobile devices and network infrastructure.

The innovative solution bridges the gap between lab and field testing through seamless real-world representation of the network environment in the lab, significantly reducing testing time and cost as well as accelerating product availability. Anite’s virtual drive test solution uses data captured in the field to build tests that replay drive or indoor test routes by emulating real-world RF network conditions in a controlled laboratory environment. Users are thereby able to cost-effectively verify device and infrastructure performance.

This unique approach offers users a complete end-to-end solution

revolutionising the testing of mobile devices and network infrastructure with quicker set-up times and more accurate results.

Virtual Drive Testing Toolset uniquely allows users to either utilise real network infrastructure or deploy a simulated network through integrating the Anite 9000. The solution enables mobile operators as well as device, chipset and network equipment manufacturers to control the device under test from a single, easy to use graphical user interface, conducting real-time diagnostics monitoring, logging test results and analysing test data.

More info:

<http://www.anite.com/businesses/handset-testing-networks-testing/news/anite-introduces-virtual-drive-testing-toolset-real>

Rodhe & Schwarz

5G test solution for mm-wave apps (R&S SMW200A high end vector signal generator)

DESCRIPTION

Rohde & Schwarz now offers a test setup for wideband applications in the millimeter-wave range.

The solution consists of an R&S SMW200A vector signal generator and an R&S FSW signal and spectrum analyzer in combination with an R&S RTO oscilloscope. When equipped with the R&S FSW-B2000 option, the R&S FSW provides an analysis bandwidth of 2 GHz. The R&S FSW67 model additionally allows signal analysis in the frequency range up to 67 GHz. The R&S FSW family is especially suited to the challenging tests to be performed during the development of 5G mobile networks. The R&S SMW200A supports signal generation up to a frequency of 40 GHz, or even beyond using external upconverter assemblies. The test setup to be presented at MWC 2015 generates and analyzes wideband signals in the 60 GHz range.

The Rohde & Schwarz test solution to be demonstrated supports the research activities aimed at making the spectrum in the millimeter-wave range usable for 5G.

More info:

https://www.rohde-schwarz.com/en/news-press/press-room/press-releases-detailpages/rohde-schwarz-to-present-a-test-setup-today-for-the-mobile-network-of-tomorrow-press_releases_detailpage_229356-108160.html

Ixia

25 Gigabit Ethernet Validation Solution

DESCRIPTION

The world's first 25 Gigabit Ethernet validation solution, Ixia's solution—the latest in its history of first-to-market Ethernet speed innovations that span 40/100/400GbE—enables its customers to successfully deploy 25GbE in order to meet both the growing bandwidth requirements and cost and space considerations of ever-evolving data centers.

25GbE has quickly emerged as a key in-rack connectivity technology for the ever-exploding, hyper-scale data center. 25GbE is a win-win option for data centers, by providing 2.5x the bandwidth of 10GbE, with minimal increase in footprint and an eye on OPEX.

Ixia's 25GbE solution builds on its first-to-market, native QSFP28 Xcellon™-Multis load modules by providing the 25GbE speed in addition to the previously available 100GbE speed.

More info:

<http://www.ixiacom.com/products/qsfp28-100ge25ge-load-module>

16. Telecoms Security Innovation Of The Year

Gigamon GigaSECURE Security Delivery Platform

DESCRIPTION

GigaSECURE is the industry's first Security Delivery Platform that provides pervasive visibility of network traffic, users, applications and suspicious activity, and delivers it to multiple security devices simultaneously without impacting network availability. As a direct result, third party security appliances are more effective at protection and remediation, and the cost and complexity of security infrastructure is reduced.

GigaSECURE is comprised of scalable hardware and software elements that provide security administrators with unparalleled visibility and capability for bolstering the effectiveness of their third party security systems and instrumentation.

Key features of GigaSECURE include:

- Infrastructure-wide reach via GigaVUE-VM and GigaVUE® nodes
- High-fidelity, un-sampled Netflow/IPFIX generation
- Application Session Filtering
- SSL decryption
- Inline bypass capabilities.

In particular, Application Session Filtering (ASF), a new, patent-pending GigaSMART® application, provides a powerful filtering engine that identifies applications, based on signature or patterns that appear within a packet or packets that form the application flow of network traffic. Once positively identified, ASF extracts the entire session corresponding to the matched application flow from the initial packet to the last packet of the flow, even if the match occurs well after the first packet. This allows an administrator to forward specific “traffic of interest” to security appliances thereby optimizing their operational efficiency and improving overall performance.

More info:

<https://www.gigamon.com/company/newsroom/press-releases/gigamon-transforms-security-market-champions-security-delivery>

FireEye

Next-Generation Endpoint Threat Prevention Platform

DESCRIPTION

Built around the Adaptive Defense™ security model for detecting, preventing, analyzing, and responding to advanced and unknown attacks against on-premise, remote, and mobile endpoints, the next-generation Endpoint Threat Prevention Platform greatly surpasses current endpoint security solutions.

Chief information security officers are currently challenged by several shortcomings in endpoint security, including the presence of multiple agents and signature-based detection. The FireEye next-generation Endpoint Threat Prevention Platform is designed to address these security challenges by offering:

Proactive and adaptive security features for searching and sweeping endpoints in real-time as well as providing response capabilities.

Industry-proven and highly scalable MVX™ technology powering endpoint threat detection.

Advanced Threat Intelligence from FireEye DTI cloud and real-time feeds from FireEye network products, enabling real-time blocking of advanced attacker activities.

More info:

<https://www.fireeye.com/current-threats/next-generation-endpoint-security.html>

Gemalto

LinqUs On-Demand Connectivity solution

DESCRIPTION

Gemalto's On-Demand Connectivity greatly simplifies solution design, development and deployment by providing secure subscription management from an embedded SIM (eUICC) in accordance with GSMA specifications. Gemalto's "bootstrap" connectivity facilitates secure operator profile downloads and immediate connectivity from a device's first use. In addition, it enables subscription management over the life span of the device without the need to change a SIM card. This gives end users the flexibility to manage their connectivity. They can easily add new devices such as tablets, connected cars and smart home solutions to existing wireless service contracts.

Gemalto and China Telecom are developing a proof-of-concept for connected cars using LinqUs ODC subscription management solution. The two companies presented a demo at the Mobile World Congress Shanghai to show how remote 'over-the-air' provisioning can enable secure connectivity on mobile devices. Next, they will integrate this ODC solution on vehicles, paving the way for China Telecom's auto-maker customers to offer instant connectivity on cars, anytime and anywhere.

The embedded SIMs will allow motorists to enjoy a safe and enjoyable drive, with the flexibility to choose or switch their service subscription throughout the entire lifecycle of their cars.

More info:

<http://www.gemalto.com/press/Pages/China-Telecom-and-Gemalto-present-joint-innovation-for-connecting-cars-and-IoT.aspx>

F5 Networks BIG-IP 12.0

DESCRIPTION

BIG-IP version 12.0 takes advantage of F5's application delivery services fabric, extending the F5 Synthesis model by combining physical and virtual resources to better support cloud and hybrid scenarios. This approach allows customers to more easily transition workloads to cloud environments as needed and incorporate technologies like HTTP/2, while maintaining the same visibility, security, and control of traditional infrastructures.

F5 accelerates cloud migrations, enabling customers to integrate security, management, and orchestration capabilities for their evolving on-premises and off-premises deployments. Moreover, F5's programmable, extensible architecture and growing ecosystem of technology partners make its

application services an ideal fit for emerging IT trends such as SDN, NFV, and converged systems offerings.

F5's BIG-IP 12.0 release includes many integrated enhancements to F5's security and access solutions:

- Reliable Access in All Types of IT Environments with SSO
- Superior Protection with the Largest DDoS Vector Spectrum and Increased Attack Visibility
- Improved SSL Capabilities for Comprehensive Security

More info:

<https://f5.com/about-us/news/press-releases/f5-drives-enhanced-cloud-and-security-services-with-big-ip-120>

Ixia

Application and Threat Intelligence for Visibility Architecture

DESCRIPTION

Ixia announced enhancements to its network visibility product portfolio, which extends the capabilities of its Visibility Architecture. With the latest releases incorporating Ixia's Application and Threat Intelligence, comprehensive solutions come together to meet the needs of enterprises for simplified and actionable network insight, marking a significant advancement in the tools that IT professionals can leverage to better understand the application performance and security implications of network events.

Updates to Ixia's Visibility Architecture include:

- **Application filtering technology** – Using Ixia's ATI Processor, administrators are able to select precise geo-tagged application traffic for forwarding to specific monitoring tools. File transfers to suspicious locations or VoIP connections from a branch office with performance problems can be automatically highlighted and directed to the appropriate tools for immediate analysis.
- **New high-density platform** – Ixia's ATI Processor is available in the new NTO 6212 packet broker, which enhances Ixia's NTO family with application brokering and NetFlow generation in an efficient 48-port 1U package.
- **Advanced packet processing and 100G support** – Ixia's NTO 7300 now supports 100Gb interfaces and 1.8Tb of advanced processing (such as header stripping and deduplication), the highest capacity and density in the industry by a substantial margin.

- **Monitoring of financial feeds** – Ixia's recent TradeView release allows for the monitoring of market data down to the channel level providing early warning of health issues with channel feeds that can save millions in revenue lost to trading errors.

More info:

<http://www.ixiacom.com/about-us/news-events/press-release/ixia-brings-application-and-threat-intelligence-network>

17. Video Platform Innovation of the Year

ZTE Integrated CDN platform

DESCRIPTION

The ZTE iCDN deployed video platform is designed to help telecom operators to improve pipeline capability, explore network value, and provide newer services and more effective experience for users. It uses innovative technologies to greatly accelerate content distribution. Innovative features include OTT multicast/unicast, integrated cache, and video acceleration, which can effectively reduce operators' CAPEX and OPEX.

The solution can, together with PCRF and PCEF network elements, provide each CP with QoS differentiated intelligent pipeline services. In addition, the iCDN supports operators to provide capability leasing services for contracted CPs, including CDN bandwidth, traffic, concurrency, storage resources, and build intelligent pipelines to realize traffic operation. Thus a video service provider can serve more subscribers with current network resources, and significantly improve user experiences.

Ericsson Cloud DVR solution

DESCRIPTION

Ericsson's cloud DVR solution is applicable to all QAM and IP-based TV platforms. This consumer application is powered by the Ericsson Video Storage and Processing Platform, a high performance, software-based infrastructure.

Ericsson's new platform offers a unique, proven infrastructure, which allows for seamless augmentation and replacement of legacy TV services with new cloud-based services. It integrates and virtualizes the storage and processing capabilities of as many Commercial-Off-The-Shelf (COTS) servers as needed,

providing outstanding performance gains and allowing operators to avoid many of the complexities and costs associated with launching new services.

In addition to powering the most proven-at-scale cloud DVR deployments, the Ericsson Video Storage and Processing Platform also enables multiple video storage and video processing applications that include:

- Master video library
- Long tail server
- Dynamic origin server
- CDN assist
- Enhanced VOD

Qwilt Mobile Video Fabric

DESCRIPTION

Qwilt Mobile Video Fabric is a new SDN-based open caching and acceleration suite, allowing mobile operators to improve the performance of their network while maximizing their current infrastructure investment.

Mobile Video Fabric enables dynamic caching of unmanaged and managed streams of video content on mobile networks. This open caching solution, which can be deployed either at a centralized (Gi/SGi) level or distributed (eNodeB) level, will extract the most value and capacity from existing mobile network infrastructure by improving network effective capacity by up to 35 percent.

Powered by the SDN-based Qwilt QwOS™ software and enhanced with transmission control protocol (TCP) acceleration capabilities, the Qwilt Mobile Video Fabric reduces network latency, improves throughput and addresses complicated mobile video RAN and backhaul challenges such as packet loss and congestion.

More info:

<http://qwilt.com/qwilt-launches-nfv-caching-acceleration-solution/>

<http://www.telecomasia.net/blog/content/mwc2015-qwilt-wants-turn-your-c-ran-video-server>

**Verimatrix
Verspective Intelligence Center**

DESCRIPTION

Verspective Intelligence Center is an innovative cloud-based engine for system deployment, management, monitoring and analytics that optimizes solution performance and reduces operational expenses.

Next-generation video service providers can capitalize on a broader range of global resources from their revenue security platforms to more optimally manage the system and identify potential threats—plus a new layer of network and subscriber intelligence—ideally suited for multi-network, multi-screen deployments.

Today, service providers see the operational benefits of flexible software-centric security architectures to help simplify the realities of a complex, multi-network, multi-device, multi-DRM environment. The Verimatrix Verspective Intelligence Center advances this concept by interconnecting otherwise isolated operator security instances, capitalizing on global management of performance and integrity for a highly distributed world of connected devices.

As IP-based technologies continue to transform the delivery of video, the capacity of Verspective to gather and analyze “big data” on system performance and potential threats will exponentially expand. A globally interconnected revenue security support engine is able to proactively address a highly dynamic world of revenue threats, such as new vulnerabilities and emerging threats, to benefit the entire user base.

More info:

<http://www.verimatrix.com/press-releases/verimatrix-defines-connected-future-revenue-security-verspective-intelligence-center>

Envivio

Envivio Nuage (virtualized cloud-based software-as-a-service (SaaS) video solution)

DESCRIPTION

Envivio Nuage is a virtualized cloud-based software-as-a-service (SAAS) video solution, designed to manage content for video service and content providers – from content acquisition to the consumer – on any screen.

Envivio Nuage supports live linear and on-demand video, and operates as a service on private, operator-owned networks, on the public cloud, or in hybrid environments.

This software-as-a-service video solution is built on the cloud instantiation of the broad solution set of Envivio offerings for video processing, video delivery and video personalization, including Envivio’s award-winning Muse, Halo and Guru software products for video processing, encryption, packaging, storage,

distribution and network management.

These products support the full range of video streaming formats and DRM technologies, HEVC, H.264, and MPEG-2 standards, and feature personal TV applications such as time shifting, Catch-Up TV, Start-Over TV, nPVR, Follow Me TV, and targeted advertising, plus blackout, ad insertion, subtitling and just-in-time packaging. Live linear and on-demand content can be simultaneously delivered to high-engagement platforms such as Apple TV, XBox, Roku, Amazon Fire TV, iOS/Android tablets, and smart TVs.

More info:

<http://www.envivio.com/press-releases/introducing-envivio-nuage-software-service-video-solution/>

18. Future TV Innovation Of The Year

Ooyala Ooyala IQ

DESCRIPTION

Ooyala IQ is the first analytics platform to provide a 360-degree view of video performance and audience behavior, including multi-dimensional filtering by device, operating system, browser, country, state, DMA (for U.S.), player or traffic source, all processed in milliseconds and provided in one view. This latest version of Ooyala's industry-leading analytics engine maximizes video monetization across all screens through real-time, actionable insights that help providers better understand and target audiences, based on actual usage patterns.

Ooyala IQ is laser-focused on revenue optimization. It was conceived and built from the ground up for a world where video is distributed and consumed across a wide variety of devices, reaching audiences wherever they are.

Real-time Programming Optimization
Robust Player Tracking
Streamlined UI for Holistic View of Video Performance
Granular Asset-By-Asset Measurement & Performance

Michelle Abraham, SNL Kagan: "Ooyala's IQ will expand the publisher and broadcaster toolkit for video monetization and programming. As TV continues to move online, understanding the multidimensional nuances of how audiences are engaging with video will enable content providers to better invest, program and build more contextualized, personal experiences."

More info:

<http://www.ooyala.com/about/press/ooyala-strengthens-video-analytics-leadership-ooyala-iq>

Ineoquest Technologies Endpoint Analytics SDK

DESCRIPTION

IneoQuest's Endpoint Analytics SDK gives Video Service Providers (VSPs) real-time visibility into the customer experience by delivering behavioral and operational data directly from endpoint devices to IneoQuest's Audience Measurement Platform for Adaptive Streaming (AMP ASM).

Integrating the Endpoint Analytics SDK with IneoQuest's comprehensive suite of video analytics and service assurance products for Multiscreen and OTT provides VSPs with complete visibility into video streaming quality along with the necessary information to understand the customer's behavior when impacted by service issues. The complete solution allows VSPs to unlock the revenue potential of video and deliver the best customer experience across all endpoint devices.

IneoQuest offers the industry's only solution that correlates operational issues to the consumer's behavior in real-time enabling VSPs to fully understand why an issue happened and how consumers reacted. This level of comprehensive analytics reduces the mean-time-to-resolve (MTTR), helps control OPEX and increases customer satisfaction.

More info:

<http://www.ineoquest.com/ineoquests-audience-measurement-platform-amp-now-provides-per-subscriber-video-analytics-from-endpoint-devices/>

Kaltura Open source video library for HLS (HTTP Live Streaming) playback on Android devices

DESCRIPTION

Kaltura has launched the industry's first open source video library for HLS (HTTP Live Streaming) playback on Android devices. The new video library streamlines and simplifies video playback on any Android device. Kaltura is complementing this with the launch of an open source Flash HLS library.

Until now, the fragmented nature of the Android ecosystem has made it difficult to ensure reliable, smooth HLS video delivery. The issue is exacerbated by Android users' expectations that more advanced playback options - such as adaptive streaming, DVR during live streaming, captions, and multi-track audio work seamlessly.

Kaltura's open source library overcomes these problems by ensuring a consistent experience using HLS features across a broad range of legacy and current Android devices/platforms. This brings Android playback in line with the high quality consistent HLS playback experience available on iOS devices.

More info:

<http://corp.kaltura.com/company/news/press-release/kaltura-'cracks-code'-reliable-hls-video-streaming-android-devices>

Brightcove Video Cloud

DESCRIPTION

Brightcove Video Cloud, the company's flagship solution, has been re-architected to simplify the complexity of next-generation online video distribution and publishing. The new Video Cloud incorporates a new HTML5 user interface, faster upload and playback, mobile publishing, and new custom analytics to scale workflows, speed time-to-live, and measure the impact of video content. Using Brightcove's next-generation Video Cloud, organizations can expand audience reach, propagate their brand, and engage audiences across devices and platforms.

The new Brightcove Video Cloud is engineered to simplify the complexities of publishing video across devices and destinations. New features include:

- Faster time-to-live
- Mobile publishing
- Advanced video analytics
- Industry-leading playback
- Social publishing
- Connections to leading content management systems
- Platform APIs

More info:

<https://www.brightcove.com/en/company/press/brightcove-powers-next-generation-online-video-new-video-cloud>

SPB TV OTT TV platform featuring 4K encoding and "swipe" feature

DESCRIPTION

SPB TV's new OTT TV platform features 4K encoding and the "swipe" feature. The 4K solution for video encoding and streaming in real time is available for telecom operators as a part of SPB TV Media Platform. The smooth multiscreen experience with the "swipe" feature makes switching between devices easy and fun, allowing users to simply swipe content on a smartphone or a tablet to a TV set.

More info:

<http://www.spbTVsolutions.com/press/press-releases/spb-tv-to-showcase-Intel-enabled-mega-encoder-and-introduce-new-service-in-south-asia.html>

19. IoT/M2M Solution Innovation of the Year

Huawei Agile IoT Solution

DESCRIPTION

The Huawei Agile IoT Solution consists of three core components:

(1) LiteOS an IoT operating system (OS)

Compared with other IoT OS, LiteOS is three times smaller in size (10KB), consumes four times less power and supports zero configuration, auto-discovery, and auto-networking. Its microsecond response speed is also 20 percent faster. The system fosters the development of the IoT system as partners can obtain codes from the open source community free of charge and quickly build their own IoT products.

Huawei's mission for LiteOS is to enable the developer community with fundamental programming techniques to develop smart devices easily. Huawei LiteOS has pioneered an approach for addressing issues currently facing IOT operating systems focusing on the necessity to be lightweight, ultra-low energy consumption, connectivity options, interoperability, security, real-time response, DIY deployment.

(2) Agile IoT gateways

Huawei Agile IoT Gateway products provide more than 17 types of IoT interfaces, which can dynamically load protocols from the Agile Controller according to varying service requirements. A key feature is also support for local processing and decision-making by integrating computing and storage resources.

Gateways have been customized for various vertical industry segments e.g. Power distribution and transformation, Railway and bus, Intelligent metering, Building Efficiency Management Systems, Safe City, Smart Factory. This innovation allow vertical industry customers to scale IoT operations as their business's grow and assist in joining Huawei customers to vertical industry

aligned sensor and related product ecosystems for rapid deployment and value/ benefit realization.

(3) the Agile Controller.

Huawei's Agile IoT Controller is based on an open platform with standard, open north-/south-bound interfaces (REST) allowing quick integration of third-party apps and IoT terminals. Network infrastructure and data management services are offered to third party application services provided open resources, O&M, policies and tools with application container support assisting customers define their IoT management platform needs.

Huawei has driven innovation on the Agile IoT Controller via self-defined services with independent service management and a scale out architecture with system capacity expansion and support for massive terminal management. A Cassandra distributed database management with high availability and no single point of failure adds resiliency to the controller.

Convergent management for network and computing resources, industrial applications and sensors and systematic, elastic expansion and management support of millions of devices sets Huawei's Agile IoT Controller apart from the competition.

Aricent

IoT Engineering Services portfolio

DESCRIPTION

Aricent's dedicated "IoT Engineering Services" portfolio aims to help innovators accelerate development of software, hardware and network products for the Internet of Things.

Aricent's expanded IoT services, coupled with Aricent's enabling software and reference designs, are proven to cut product development cycles by 30% to 50%. Target product initiatives include connected cars, connected homes, wearable devices, embedded systems, industrial automation, smart energy and smart cities.

Aricent's IoT Engineering Services encompass the entire concept-to-cash product lifecycle, including: product and service strategy, hardware and silicon design, software and mobile development, cloud infrastructure, device and application management, systems integration, end-to-end testing and product support.

Aricent has also created several pieces of enabling software for IoT development, including new IoT Gateway middleware. The middleware provides connectivity across IoT devices and machines, multiple network technologies and cloud infrastructure. The IoT Gateway's components can be fully customized and re-used as part of a client's solution, including horizontal and vertical IoT applications and services.

More info:

<https://www.aricent.com/blog/2015/02/iot-and-beyond-third-wave-emerges-blending-physical-and-digital>

<https://www.aricent.com/news/aricent-expands-iot-commitment-creates-dedicated-iot-engineering-portfolio>

Sequans Communications Calliope LTE Platform

DESCRIPTION

The Calliope LTE Platform has been optimized for low cost and low power and is ideal for wearables and other LTE Category 1 (10 Mbps downlink) IoT/M2M devices. Calliope complements Sequans' Colibri LTE Platform, a Category 4 (150 Mbps downlink) solution, introduced last year.

"With Calliope, we answer the growing demand for an especially low cost LTE solution for those highly cost-sensitive devices such as wearables that don't require the high throughput of our Cat 4 Colibri solution," said Georges Karam, Sequans CEO. "Calliope is the first Cat 1 LTE solution in the industry, and by designing it specifically for this segment, it enables the design of wearables and other devices for industrial and home applications at a cost that is competitive with many of today's entry-level 3G (WCDMA and EVDO) solutions.

"Cat 1 capability is an important step towards the LTE-enabled Internet of Things. It allows operators to manage their networks much more efficiently by not allocating excessive resources to devices that don't need high throughput. Furthermore, Cat 1 devices can be deployed in most of today's existing LTE networks without requiring new network equipment or other major network upgrades. LTE is about much more than high speed as evidenced by the inclusion of Cat 1 in the original 3GPP LTE specification, and by the move of 3GPP to define even lower-cost, lower throughput Cat 0 (1 Mbps) capability in next year's Release 12. This roadmap has accelerated the trend of operators to shutter 2G and 3G networks and migrate to the much more efficient 4G LTE."

Among Calliope's key features are ultra low power consumption, allowing several days of battery life, and a very compact form factor, which is a function of wafer-level packaging for both the baseband and RF chips.

More info:

<http://www.sequans.com/press-release/sequans-introduces-calliope-lte-platform-internet-things/>

Cisco Systems

Cisco IoT System

DESCRIPTION

The Cisco IoT System addresses the complexity of digitization with an infrastructure that is designed to manage large scale systems of diverse endpoints and platforms, and the data deluge they create.

The new Cisco IoT System comprises six critical technology elements or 'pillars' which – when combined together into an architecture – help reduce the complexities of digitization:

- Network Connectivity
- Fog Computing
- Security
- Data Analytics
- Management and Automation
- Application Enablement Platform:

Cisco also announced 15 new Internet of Things products within the six pillars.

<http://newsroom.cisco.com/press-release-content?articleId=1667560>

Intel

Intel IoT Platform

DESCRIPTION

The Intel IoT Platform is an end-to-end reference model and family of products from Intel and the industry that provides a foundation for seamlessly and securely connecting devices, delivering trusted data to the cloud, and delivering value through analytics. It represents Intel's commitment to increasing the viability of IoT so that its full promise can be realized worldwide.

With the Intel IoT Platform, a broad spectrum of interoperable, cross-ecosystem IoT solutions can be built and optimized—with the added Intel advantages of scalable compute, security from device to cloud, and data management and analytics support.

More info:

<http://www.intel.com/content/www/us/en/internet-of-things/iot-platform.html>

Nokia

IoT connectivity solution for LTE core and radio networks

DESCRIPTION

Nokia Networks' IoT connectivity solution for LTE core and radio networks makes existing LTE networks IoT ready. Operators can now prepare their current networks for the business opportunities of the IoT era and related machine-to-machine (M2M) traffic. Following an easy 3-step approach, operators can smoothly migrate their LTE core network to IoT overlay. Starting with subscriber data management they can move on to gateways and mobility management. This stepwise approach allows them to flexibly migrate their core domains so they can tackle the mix of mobile broadband and M2M traffic in a cost efficient way while keeping operational impact at minimal level.

The new IoT connectivity solution consists of two elements:

1. Nokia's Core for IoT

Drives down total cost of ownership (TCO) for IoT solutions on operators' networks and allows for a business mix of high ARPC* and low ARPC* M2M traffic

Improves operational efficiency by about 35% compared to legacy networks and provides 40% better CPU utilization e.g. for smart meter traffic

Open APIs allow for real-time data mining, service control and integration, making it much easier to ensure network optimization and service enablement for IoT applications

Programmability enables operators to cope with a multitude of applications and proactively reduce signaling traffic, e.g. by adjusting the timer value for service based paging for connected cars

2. Enhanced Smart Scheduler

With self-adapting algorithms in Flexi Base Stations, it adapts to the IoT device traffic profile, which will become more relevant with the increasing variety of IoT use cases from stationary metering applications to demanding vehicle-to-infrastructure communications

It reduces signaling load in the network, enhances responsiveness of the service and lowers power consumption of the IoT modem

It improves connection quality even at the cell edge with minimized impact on network capacity

More info:

<http://company.nokia.com/en/news/press-releases/2015/07/16/launch-nokia-networks-makes-lte-networks-iot-ready-mwcs15>

20. Wireless Network Project of the Year

Elitecore Technologies and Tata Tele Services Mobile Data offload, Public Wi-Fi and event-based Wi-Fi services

DESCRIPTION

To help operators' with innovative Wi-Fi Solutions including Mobile Data offload and Public Wi-Fi services and help them deliver unique business cases, Elitecore designed a unique Elitecore Wi-Fi Service Management Platform (SMP) thus helping them to be the first mover in the market and enhance their monetization opportunities.

Elitecore Wi-Fi SMP is a converged Wi-Fi platform which can serve the Carrier Wi-Fi offload, Public Wi-Fi and Wi-Fi monetization solution. With its innovative offerings, the platform holds great potential to resolve the market challenges and can easily suffice the upcoming requirement of the Service Providers.

With the endeavor of keeping up with the changing demands of users and to cater to the emerging demand of Wi-Fi, Elitecore SMP enabled Tata Tele Services Ltd (TTSL) to roll out seamless Mobile Data offload, Stadium Wi-Fi, Public Wi-Fi and monetization services across over 1000 hotspots in India, thus ensuring increasing customer reach, faster roll out of services and generating new revenue opportunities.

- Solution Offered: Successful roll out of Mobile Data offload, Public Wi-Fi and Event based Wi-Fi services by offering innovative business cases like EAP SIM, Non EAP SIM and OTP based authentication, voucher based Wi-Fi access, location specific differential prepaid plan packages, Wi-Fi bundled with 3G plans etc.
- Scalability: Up to 139k concurrent sessions
- Delivery Time – Fastest ever roll out – in less than 9 months
- Services Supported: 3GPP Mobile Data offload, Walk-in, Event based Wi-Fi, Location based advertisement display, notifications
- Traffic Supported: Data: Time and Volume based

Cisco Systems and Telstra Telstra Air

DESCRIPTION

The Telstra Air Network, Australia's largest Wi-Fi network, launched in June 2015, comprising of 3600 Telstra built Wi-Fi hotspots at various locations including at selected payphone sites and retail stores. The national rollout of the Telstra built public hotspots was completed in just eight months.

Uniquely in Australia, Telstra Air members' homespots are created using innovative Wi-Fi sharing technology, in collaboration with Fon, which sees members make available a portion of their home broadband bandwidth (using a second SSID) which other Telstra Air members can access.

To support such a rapid deployment a unique network solution was required. Telstra turned to Cisco Meraki with its unique cloud based architecture which scales out-of-the-box to seamlessly enable the rollout of such a massive, multi-customer, cross-vertical, distributed site deployments with millions of network users.

Cisco Meraki's hardware products are built from the ground up for cloud management. As a result, they come out of the box with centralized control, layer 7 device and application visibility, real time web-based diagnostics, monitoring and reporting.

By using the Cisco Meraki dashboard to centrally deploy and administer network devices on the Telstra built hotspots, Telstra can easily monitor and manage the large-scale network.

In the less than 2 months since the network has been live, more than 100,000 customers have joined the network and thousands of new members continue to join each day.

Ericsson and China Mobile Hong Kong FDD/TDD 3CC Carrier Aggregation in Live Converged LTE Network

DESCRIPTION

Ericsson and China Mobile Hong Kong successfully completed a live demonstration of LTE-Advanced FDD/TDD three-component carrier (3CC) carrier aggregation and achieved a peak download speed of 272 Mbps.

The demonstration was performed on China Mobile Hong Kong's network using Ericsson FDD+TDD carrier aggregation technology and TM500 network testers supplied by Cobham Wireless. In the demonstration, one 15 MHz LTE FDD carrier in 2.6 GHz band was aggregated with two LTE TDD carriers in 2.3 GHz band (one 20 MHz and one 10 MHz carrier) via carrier aggregation technology.

More info:

http://www.ericsson.com/hk/news/20150803_cmhk_3cc_carrier_aggregation_254740126_c

Huawei and China Mobile Demonstration of Cloudified VoLTE Solution and Mobile Network

Architecture

DESCRIPTION

Huawei demonstrated its virtualized VoLTE solution designed specifically to support China Mobile's Cloudified VoLTE service.

The Huawei Cloudified VoLTE solution runs on Huawei commercial off-the-shelf (COTS) hardware servers and cloud operating system. The demonstration featured NFV-based core network elements, including a virtualized IP Multimedia Subsystem (vIMS), a virtualized evolved packet core (vEPC), a virtualized subscriber data management (vSDM), and a virtualized policy and charging rules function (vPCRF). Customers were able to personalize their experience of the Cloudified VoLTE solution through HD audio and video services.

China Mobile and Huawei also displayed the solution and prototype system of the next-generation mobile network architecture. This solution adopts innovative concepts such as SDN and NFV to meet the future requirements of mobile services on network flexibility, scalability, and rapid deployment. The demonstration of this prototype system included showcasing the automatic instantiation and dynamic scalability of the forwarding entity, the switchover of local gateway forwarding plane, and real-time service chain policy control.

More info:

<http://pr.huawei.com/en/news/hw-419356-volte.htm#.VfPy3mDfvDM>

Nokia Networks and StarHub

Demonstration of LTE-Advanced at 600Mbps using 4X4 MIMO technology

DESCRIPTION

StarHub successfully demonstrated 600-Mbps peak download speeds using Nokia Networks' 4X4 MIMO technology with LTE-Advanced Carrier Aggregation in a technical trial conducted at its headquarters.

The 600Mbps data transmission speeds were achieved through combined 4x4 MIMO technology, along with Carrier Aggregation, to reach LTE-Advanced data speeds.

In addition, StarHub and Nokia Networks have successfully tested 3-band carrier aggregation using a commercial mobile device. The successful trials of 4x4 MIMO and multiband carrier aggregation pave the way towards even faster mobile broadband in future.

Brief summary of Nokia Networks' solutions implemented to enable the trial:

- Flexi Multiradio 10 Base Station with LTE-Advanced Carrier Aggregation
- LTE-Advanced 4X4 MIMO technology that doubles download speeds using four transmit and four receive antennas for communication between a mobile device and the base station

21. Fixed Broadband Project of the Year

ZTE and AIS

AIS transformation to full-service operator

DESCRIPTION

ZTE's QRun technology helped Thai cellco AIS transit from a pure mobile service operator to a full-service operator with a new FTTx offering.

ZTE QRun fully covers planning & construction, operations readiness, service fulfilment and O&M assurance for AIS' FTTx network:

1) Planning & Construction. ZTE QRun provided an optical fiber network planning & design tool, eDesign, and a site survey tool, eSurvey. These tools guide the construction and import data into the Inventory Management after construction is completed and accepted, realizing planning & design data, construction data and resource data interlinking seamlessly.

2) Operations Readiness. ZTE QRun has complete operation readiness mechanisms of IM (Inventory Management) and WFM (WorkForce Management). IM manages all resources of the FTTx Network including active and passive infrastructure and enables end-to-end inventory allocation. WFM provides functions of staff, tool & vehicle management and skill & capacity management. WFM offers the guarantee that the right task will be sent to the right staff at the right time and makes team performance management more effective.

3) Service Fulfilment. ZTE QRun provides a complete-service fulfilment process for OM, IM, WFM, PROV, & Easygateway (for CPE provisioning). It makes service provisioning flexible, stable and offers rapid support. It also offers the capability of service provisioning based on APP, which improves the live release rate significantly.

4) O&M Assurance. ZTE QRun provides closed-loop process for EasyOptical (location), OFM (analysis), TND (testing), IM (resource) and WFM (dispatching).

AIS completed the deployment of FTTx networks covering 100K homes within a half year, and leveraged QRun to build a broadband access OSS platform

within four month. At present, AIS has allocated numbers for more than 10,000 subscribers.

Arris, SK Broadband Gigabit Broadband over Cable

DESCRIPTION

SK Broadband unveiled its 1Gbps broadband service in August 2014 thanks in part to its deployment of the ARRIS E6000 Converged Edge Router (CER), a Converged Cable Access Platform (CCAP). The success of the ARRIS E6000 CER has been pivotal for SK Broadband to reach landmark broadband speeds, and also enabling further innovations such as the world's first 4K (UHD upscaling) TV service.

With the launch of 4K quality channels in Korea, it's now become imperative that the IPTV operators need to upgrade their network so that they'd be able to handle the bandwidth constraint predicted from migration of their live channels and VoD titles to 4K-grade.

SK Broadband has over 3 million IPTV subscribers as of June 2015, and has seen their subscription growing 5~6% YoY over the past couple of years.

As their content portfolio get UHD-enabled across the board and more and more of their subscribers appreciating the value of UHD, SK Broadband intends to expand their 1Gbps footprint across their network and this investment will work towards their business growth for both their broadband and IPTV services as the consumers enjoy the superb video quality of UHD and the enhanced broadband speed enabling such services.

More info:

<http://www.prnewswire.com/news-releases/the-arris-e6000-cer-enables-sk-broadband-to-deliver-asia-pacific-region-first-1gbps-broadband-service-and-opens-the-door-to-4k-innovations-300050908.html>

Huawei and HKT 10Gbps FTTH access

DESCRIPTION

PCCW-HKT has teamed up with Huawei to launch the world's first 10Gbps FTTH service in Hong Kong.

The service promises 10Gbps download speeds, 1Gbps Wi-Fi speed and 5Gbps USB3.0 speed.

Huawei said 10Gbps FTTH will pave the way for multicast 4K streaming and facilitate instant sharing or information storage on cloud-based networks.

Prior to the mass launch later this year, Huawei and HKT have completed the preparation of 10Gbps access based on Huawei's new OLT MA5800 and its unique XG-PON gateway Optical Network Terminal (ONT) for a trial launch for selective FTTH customers in the second quarter of 2015. In the pilot launch, users can experience the 10Gbps Internet download speed, 1Gbps Wi-Fi speed and 5Gbps USB3.0 speed which will dramatically enhance customer experience.