

Ultra-Broadband Forum 2021: Recap of Autonomous Networks Session

Dr. Mark H Mortensen, Principal Analyst, ACG Research

I was delighted to chair an Ultra-Broadband Forum (UBBF) session on [#autonomousnetworks](#) at [#ubbf2021](#) in Dubai during the week of 18 October. UBBF is a yearly executive-level invited event sponsored by the UN Broadband Commission for Sustainable Development and Huawei. This year the theme was “Extend Connectivity, Drive Growth.”

There were four sessions:

- Keynote
- Intelligent Cloud Network
- All-Optical Target Network
- Autonomous Networks

In this blog, I recap at high level, each of the talks in the session.

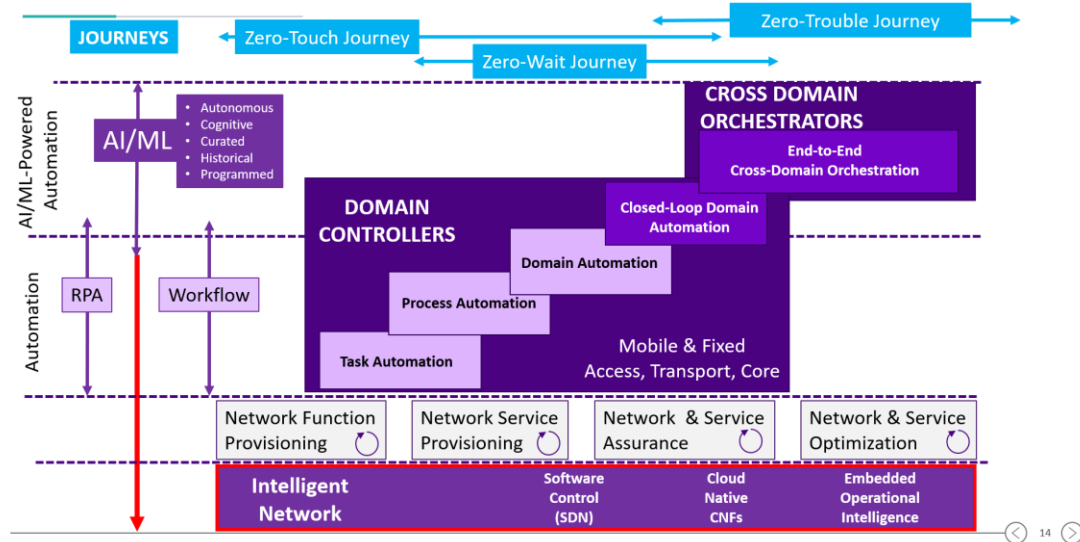
Contact me at mmortensen@acgcc.com for further information.

Mark Mortensen, ACG Research, The ACG Autonomous Networks Roadmap



My introductory talk focused on autonomous networks, the TM Forum's vision of the future. I gave a historical overview of network automation from 1978 to today and shared my thoughts on a roadmap for autonomous networks implementation at scale. This roadmap takes a CSP on the autonomous networks journey and extends proven automation techniques to the area of AI/ML while incorporating the latest technological advances in network intelligence. It requires both external software and increased network operational intelligence to achieve autonomous networks.

How to Achieve Autonomous Networks to Scale



I challenged the participants to implement to scale the autonomous networks principals of zero-touch, zero-wait, and zero-trouble to Level 4 (out of 5) by the time I retire later this century. This will be my revenge for all my former Bell Labs (hardware-focused) colleagues from the 1980s who used to say, "It's only software." It's the software-powered, AI infused, autonomous network of the future!

ACG Research analysts are following this closely and putting it into a larger context of being part of the [Intelligent Composable Fabric \(#ICF\)](#) of the future that will provide digital enablement to a wide range of industries. See <https://www.acgcc.com/blogs/2021/09/11/acg-debuts-intelligent-composable-fabrics-superior-results-digital-enablement/> for more details.

Building a Fully Connected, Intelligent World

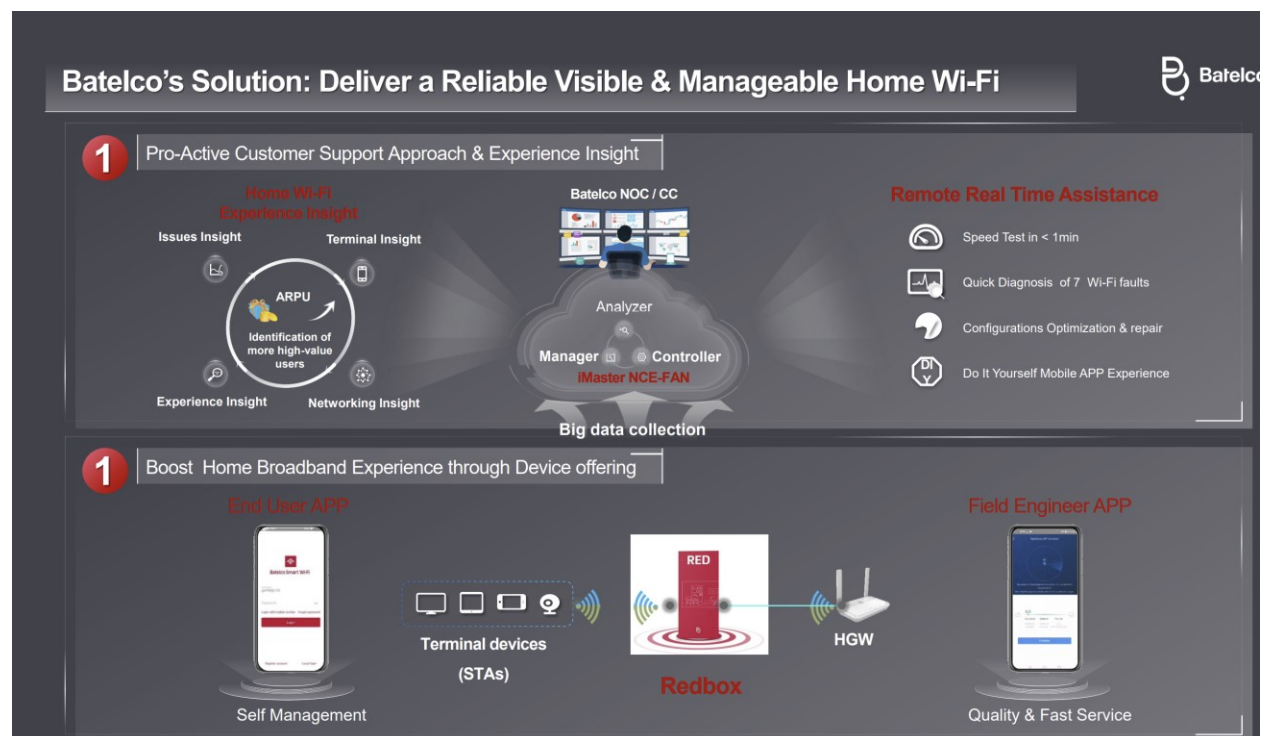
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A reliable home Wi-Fi network has never been more important in this post-pandemic era. Batelco has launched reliable manageable home Wi-Fi services, implementing ideas of Autonomous Driving Network(ADN) on home network that aim to provide the best Wi-Fi experience for Bahraini.

Rashed Mohamed
CTO
Bahrain Batelco



Nowadays, reliable internet has never been more important as everyone is working, studying, gaming, and carrying out unprecedented volumes of online interactions from home. Batelco has launched a reliable, manageable home Wi-Fi service, aiming to provide the best Wi-Fi experience.



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Building a Fully Connected, Intelligent World

China Unicom Hebei and Huawei cooperated to consolidate all-optical infrastructure networks and introduce ADN based on iMaster NCE to build high-quality enterprise leased line services that feature higher bandwidth, lower latency, higher reliability, and smarter operation.

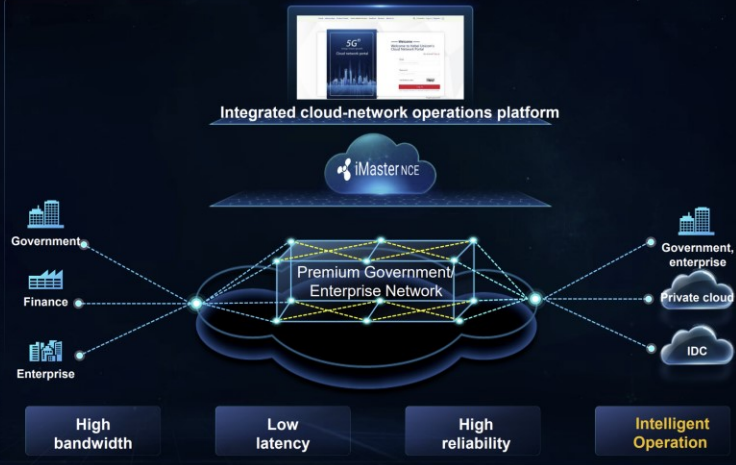

Di Tang
Deputy GM of Network Dept
China Unicom Hebei Branch



Facing the development opportunities of digital transformation in myriad of industries, China Unicom Hebei cooperated with Huawei and industry partners to consolidate all-optical infrastructure networks and introduce the autonomous network solution based on the iMaster NCE all-optical intelligent and automation network. It enables the building of high-quality enterprise leased-line products that feature higher bandwidth, lower latency, higher reliability, and more intelligent operation to serve a wide range of industries, benefiting hundreds of thousands of households and accelerating the development of the digital economy.

"First-Class" Private Line, High Bandwidth, Low Latency, High Reliability, and Intelligent Operation

Covering all 12 cities and more than 900 nodes in Hebei, the premium government/enterprise network of China Unicom Hebei is China Unicom's biggest provincial government/enterprise network, and the biggest government/enterprise OTN network in Hebei.



The premium government/enterprise network of China Unicom Hebei serves **more than 1000 customers** in finance, government, healthcare, and education in Hebei province.

Alan Loh of Zain KSA

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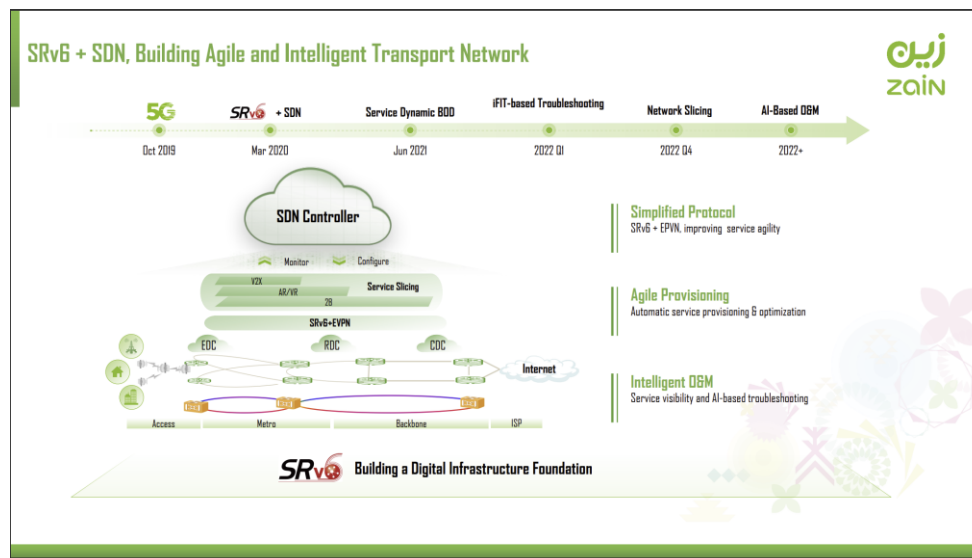
Building a Fully Connected, Intelligent World

With the explosive growth of 5G traffic and the emergence of new services and applications, Zain KSA is building an agile and intelligent transport network based on SRv6 and SDN to meet diversified service requirements of 5G and cloud era to provide better services for users.

Alan Loh
Innovation & Solutions Executive
General Manager
ZAIN KSA




ZAIN KSA has been successful in 5G since launching the region's largest 5G network in 2019. ZAIN KSA is building an agile and intelligent transport network based on SRv6 and automation, intelligence technologies to cope with the explosive 5G traffic growth and the emerging 5G new services and applications. To transform Zain KSA's network into a leading unified network that supports long-term service evolution, Zain KSA introduced IP segment routing (SRv6) to simplify the network deployment. Together with SRv6 network programming and SDN controller centralized path computation and network automation capabilities, Zain KSA can provide on-demand SLA assurance for customers and easily design a new business model. By introducing the iFIT and AI technologies to the transport network, advanced features, such as fast fault diagnosis, are implemented to improve O&M efficiency and business innovation capabilities.



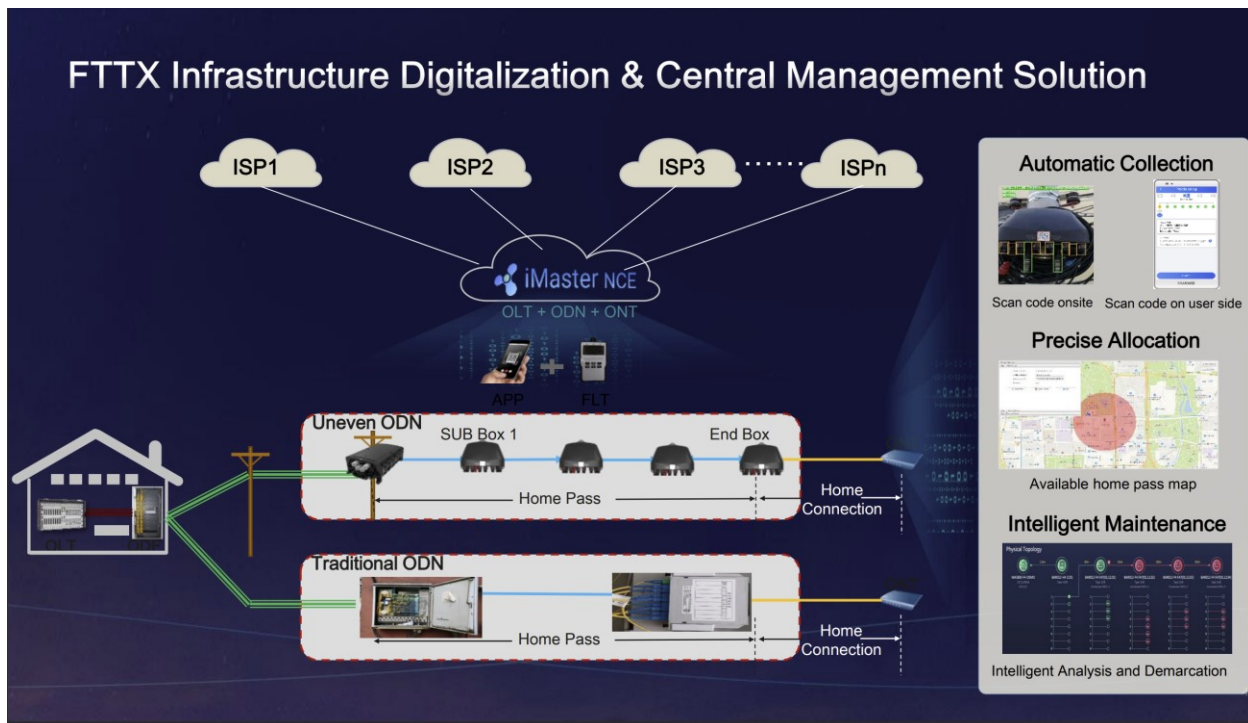
Building a Fully Connected, Intelligent World

We choose 'best customer experience' as PLDT's most important ambition from 'voice centric' to 'data centric' era. 'Designed for Peak Throughput' is the prerequisite to achieve a congestion free network that could serve the best service quality we have promised.

Arvin Siena
VP and Head of Technology Strategy
and Transformation Office
Philippines PLDT and Smart



The pandemic made us realize that connection has become the basic need in the new normal era. Ensuring the best customer experience is critical for PLDT's future-oriented data-centric services. For a congestion-free network, the network design must include peak throughput.



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The all-optical network is the cornerstone of the entire communications network. Huawei aims to build an efficient, secure, and green all-optical ADN and provide zero-touch, zero-wait, and zero-trouble premium home broadband and private line to support the high-quality development of all services.

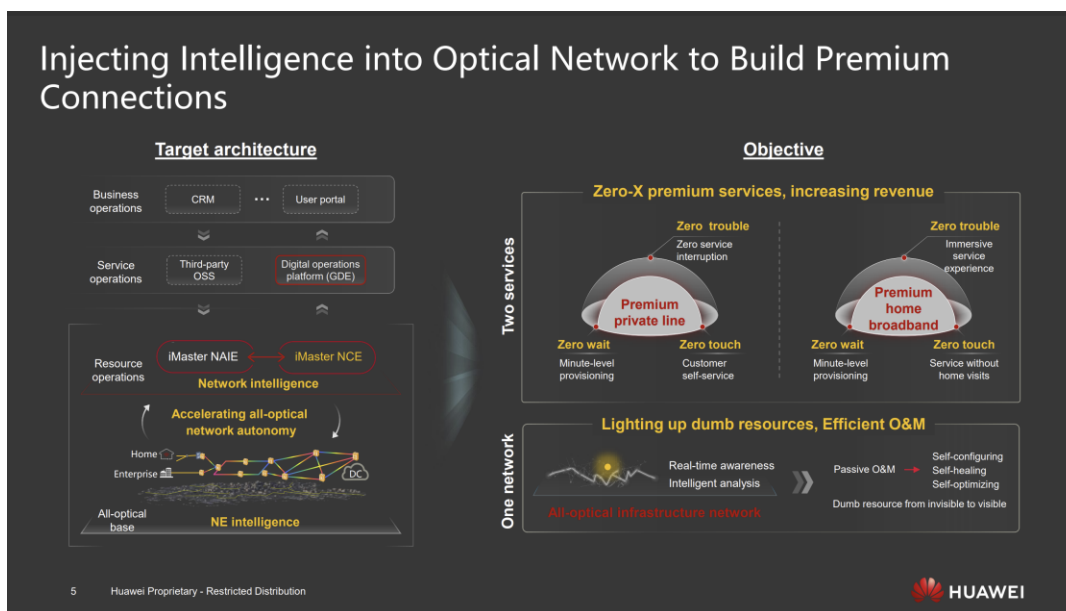
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Kim Wang
Marketing Director of NCE
Optical Network Domain
Huawei





Huawei's all-optical autonomous driving network solution introduces automation and intelligence technologies to build an efficient, secure, and green all-optical base. The solution enables intelligent O&M and automatic operation from end to end, and provides household and industry customers with near zero-touch, zero-wait, and zero-trouble premium home broadband and private line experience.





How to evolve to a highly autonomous IP network? Huawei believes that IPv6+ is a new engine for the network to achieve precise control at the packet level. The intelligent management and control system constructs a real-time digital map of network services through second-level perception and provides upward IP connectivity, topology, and analysis services through its network-agnostic service API. Another is to use hierarchical AI to realize the three-layer closed loop of device, network, and service and realize intelligent decision-making.

