

IDF 2015 Mega Session 5G: Innovation from Client to Cloud

News Highlights:

- Intel is applying its unique combination of computing, networking and wireless communications expertise to develop 5G solutions that integrate intelligence across the entire network, from device to data center
- Intel is collaborating with equipment and device manufacturers such as Nokia*, network operators, service providers such as NTT DOCOMO* and SK Telecom*, academic institutions and others to accelerate 5G standards development and solve key technical challenges
- Intel announced the creation of the Intel Network Builders Fast Track, a program designed to accelerate innovation in the network ecosystem

August 19, 2015 — At IDF 2015, Intel hosted a panel on 5G to discuss how the next generation of mobile networking will power entirely new categories of applications and user experiences by integrating innovative wireless techniques with intelligent, high-performance network technologies.

Intel is collaborating with equipment and device manufacturers, network operators, service providers, academic institutions and others to accelerate 5G standards development and solve key technical challenges. Through these collaborations, Intel is applying its unique combination of computing, networking and wireless communications expertise to develop 5G solutions that integrate intelligence across the entire network, end-to-end, from the data center to device and throughout systems in between. This systems-level approach will enable more functional devices, more cost-effective and efficient networks and user experiences that are more intuitive, enriching and immediate than ever before.

5G and Future Networks: Using fast wireless connections to cloud-based computing and data services, and to other connected devices, 5G will enable a variety of new capabilities such as self-driving automobiles with intelligent traffic routing, smart cities, connected health innovations and more. Meeting this challenge and the capacity and efficiency demands of 5G will require new approaches to network and device design.

Computing and Communications Will Converge: 5G will not be about simply increasing speed and capacity, but will also be about intelligence throughout the network to enable devices and the network to communicate more efficiently, transport data and content more quickly, and share computing resources. Devices and the network will also need to work together to establish intelligent service awareness. They will need to prioritize actions based on level of importance and be flexible enough to accommodate many devices that have widely varying connectivity, processing, power and latency requirements.

Devices and Sensors Get Smaller and Smarter: Devices will evolve in size, form, function and computing capability on the road to 5G. Networks and devices will need to intelligently manage connections as users move in to, out of and between cell coverage areas, as well as suppress interference from neighboring cells. They will also take a greater role in sharing contextual information, creating opportunities for developing new breeds of video, web browsing, gaming and interactive cloud-based applications.

Building a Network for the Future: Increasingly, networks must be designed to be flexible, efficient and scalable in order to accommodate the rapid growth in number and variety of connected devices in the Internet of Things, including wearables and immersive services like augmented reality. This will require new wireless spectrum and greater network efficiency.

Making 5G a Reality: Intel is developing wireless radio access and device processing technologies for PCs, smartphones, tablets, wearables and many future connected devices and sensors. As part of this effort, Intel is offering an open, general purpose platform for network operators and investing in transforming the network in four key areas, including advancing open source and standards, enabling open networking platforms, building out an open ecosystem on Intel architecture and accelerating trials and deployments. To help accelerate future deployments, Intel is working on a variety of initiatives and proofs of concept with industry leaders to shape future service aware networks and devices.

To that end, Intel announced the Intel Network Builders Fast Track, the company's next step in working with the networking industry to accelerate innovation in the ecosystem through a combination of market development activities and Intel Capital investments into strategic and disruptive companies that are part of the Intel[®] Network Builders program. The program is designed to drive the integration of solutions for deployment, ensure interoperability across stack layers and across networks and accelerate adoption of standards-based technologies using Intel architecture with trials and deployments with industry leading service providers.

Intel Collaborations:

Nokia* - Nokia and Intel are working together to define 5G system specifications, software requirements and implement a test bed to showcase the proofs of concept. As part of that effort, Nokia AirFrame Data Center Solution will use Intel's high performance processors as the basis for a more flexible and distributed cloud architecture to enable 5G. Additionally, building on existing collaborations in wireless access technology, the two companies intend to develop a framework for an interoperable air interface designed to demonstrate 5G performance, aimed at a mobile broadband use case.

NTT DOCOMO* - Intel is [collaborating with NTT DOCOMO](#) to conduct experimental trials of 5G handset chipsets. The two companies will also work together on 5G interface concepts, design and laboratory and field trials.

SK Telecom - [SK Telecom announced a collaboration with Intel](#) to develop and verify 5G technologies. Together, they will build a modem that supports 5G, the existing LTE and 3G networks and ensure seamless interworking among multiple RATs (Radio Access Technology). The two companies will also continue to develop Anchor-Booster Cell, one of the core 5G technologies that enables seamless transmission of massive amounts of data via a combination of an LTE network and WiGig, next-generation wireless LAN.

Industry Consortia:

Intel is a member of seven research projects as part of the [5G Public Private Partnership \(5G-PPP\)*](#) under the Horizon2020* Program. Intel is the project coordinator of the [Flex5GWare*](#) project, a Horizon2020 project, that includes 17 industry and academia partners to execute research on 5G key components to enable flexible, reconfigurable communications platforms for 5G mobile services and applications.

Links: 5G Mega Session Replay and IDF News Room: www.intel.com/newsroom/idf

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