Challenges and Opportunities of 5G Mobile Edge Cloud
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The 5G services require a network with "high bandwidth and ultra-low latency." High bandwidth can be enabled by wider frequency bands. To achieve ultra-low latency, however, network operators have come up with the concept of "mobile edge." By leveraging mobile edge, we can deliver novel 5G applications that can benefit from sub 10msec latency, such as cloud XR, cloud gaming, connected cars, cloud robots.

While providing ultra-low latency itself is useful, this does not fully justify the cost of deployment of numerous edge sites. In fact, it is not difficult to see mobile edge provides a couple of additional benefits: (1) huge volumes of data (that may be generated by, for example, connected cars) can be processed at the edge instead of sending them to a remote data center, which is extremely costly; (2) mission-critical and sensitive data from a smart factory or hospital can be processed at the edge without leaving the site. By enabling edge data processing and local security, mobile edge provides a unique opportunity for mobile service providers to bring new values to its B2C and B2B customers.

In this keynote, I propose that mobile edge should be “programmable” and “cloud native.” This does not mean just running a few VMs at the edge site. At SKT we are developing its mobile edge as a fully functioning cloud. SKT’s MEC or “mobile edge cloud” will provide virtualized infrastructure with Kubernetes, serverless, and service mesh support. We are also pairing our MEC with public clouds so that our users have options to quickly build new applications using widely understood cloud APIs and services. In addition, we will provide our unique service assets, such as telco APIs, natural language processing, real-time data processing, etc. “as a service” to developers so they can quickly build something that was truly not possible before.

I will conclude this talk by presenting several early use cases that we are developing on 5G MEC with our partners.
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As Vice President and Head of 5GX Cloud Labs of SK Telecom, Dr. Kang-Won Lee has been leading the research and development of cloud technologies to expand the company’s 5G service portfolio and strengthen its leadership. He is currently developing innovative technologies aimed at enhancing customer’s experience and value. They include 5G MEC, telco cloud infrastructure to provide next-generation 5G services, such as cloud gaming, autonomous driving or 5G robots.

Before joining SK Telecom, he worked at IBM Watson Research Center in New York for 14 years leading a number of R&D projects as Research Manager, and successfully applied his R&D results to IBM’s main products, such as Informix and Tivoli.

He received his bachelor and master’s degrees from Seoul National University and a doctor’s degree in Computer Science from University of Illinois Urbana-Champagne (UIUC).