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SKT and Ericsson build 5G with precision in the world's largest 5G market



Summary

SK Telecom is providing differentiated 5G services in the world's fastest growing 5G market, South Korea. The company is taking the customer experience to the next level with the delivery of high data speeds and rich content in the areas of gaming, ultra-high definition video (UHD) and augmented and virtual reality (AR & VR), to name a few.

Meeting these 5G ambitions efficiently and economically requires solutions that can both support the required capacity and that can be deployed and operated in an optimized way. SKT is leveraging Ericsson's 'Build with Precision' strategy to optimize the company's network build, matching the capabilities of Ericsson's RAN portfolio with the specific requirements of each network radio site. Together, SKT and Ericsson are maximizing the potential of 5G.



SK Telecom is the largest mobile operator in Korea with nearly 50 percent of the market share. As the pioneer of all generations of mobile networks, the company has commercialized the fifth generation (5G) network on December 1, 2018 and announced the first 5G smartphone subscribers on April 3, 2019. With its world's best 5G, SK Telecom is set to realize the Age of Hyper-Innovation by transforming the way customers work, live and play.

Building on its strength in mobile services, the company is also creating unprecedented value in diverse ICT-related markets including media, security and commerce.

5G live in South Korea

On April 3rd, SK Telecom introduced South Korea to a new era, the age of Hyper-Innovation, with the commercial launch of their 5G network. With 5G downlink speeds that are 10 times faster than 4G, and that exceed 1 Gbit/s in stationary mode and 500 Mbit/s in mobile mode, SKT has positioned 5G as a premium service as they take their customer experience to the next level. In addition to ultra high speeds, 5G delivers rich content in diverse areas spanning gaming, ultra-high definition (UHD) video, and augmented and virtual reality (AR & VR) based applications.

Today, South Korea is the world's largest 5G market with more than 3 million 5G subscribers – a number that is growing

rapidly and that may exceed 5 million by year end. 5G is also driving higher data usage with an average data consumption that has grown from 9 GByte/month on 4G to more than 25 GByte/month on 5G.

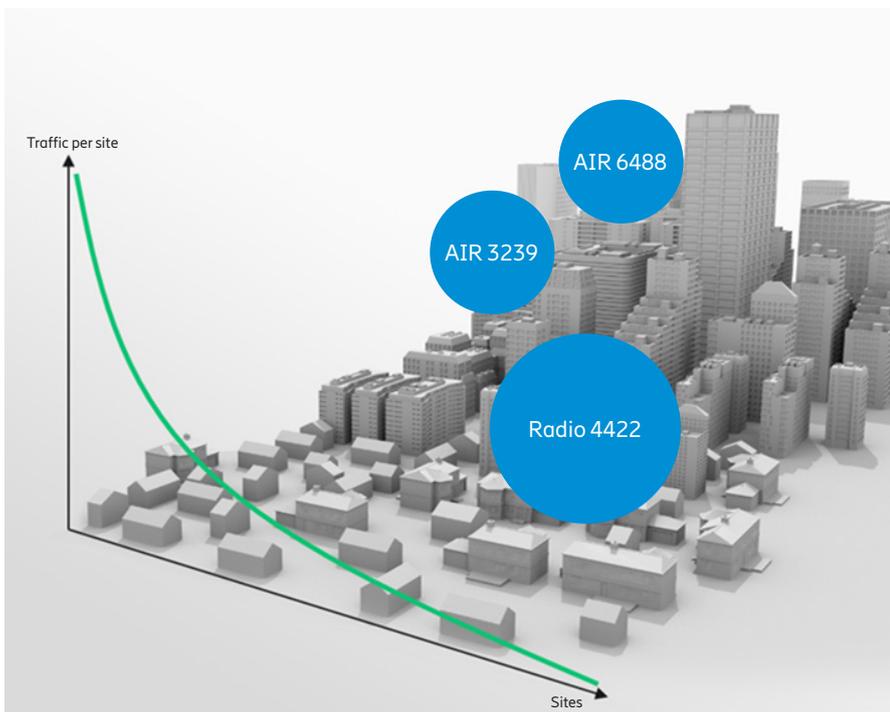
To be the industry best in terms of 5G coverage, speed and latency, SKT has been rolling out 5G in the 3.5 GHz mid-band in the main population areas of eighty-five cities, and other highly populated areas that have high concentrations of data traffic like university districts, high-speed trains, sports stadiums, metropolitan subway lines, and expressways. SKT is also expanding coverage to include nationwide subways, national parks and festival sites. 5G coverage expected to expand.

Building 5G with Precision

To achieve these 5G ambitions both efficiently and economically, SKT is "Building 5G with Precision." Building with precision is the Ericsson network rollout strategy that entails optimizing the network build by matching the right capabilities of Ericsson's diverse RAN portfolio with the specific traffic and coverage requirements of each network radio site, and each SKT market segment.

Building with precision reduces a network operators' capital and operating expenses. To lower costs while meeting the service requirements of each coverage and traffic area, SKT has deployed, with Ericsson, three different 3.5 GHz integrated-antenna radio and standard radio configurations to date, as listed below.

- 64 Transmit / 64 Receive (64T64R) Massive MIMO capable antenna-integrated radio
- 32 Transmit / 32 Receive (32T32R) Massive MIMO capable antenna-integrated radio
- 4 Transmit / 4 Receive (4T4R) radio unit



High Capacity for dense urban areas

To meet the 5G capacity and performance requirements of SKT's most dense urban areas, SKT rolled out the Ericsson AIR 6488. This high capacity antenna integrated radio supports a 64 Transmit/64 Receive (64T64R) 5G Massive MIMO configuration. To ensure good vertical coverage, the AIR 6488 supports 30 degree, wide-

angle, vertical beam forming making it ideal for providing good coverage of the tallest buildings found within SKT's dense urban environments.



Coverage and Capacity for urban areas



To secure good coverage and capacity within urban and suburban areas, SKT is utilizing the Ericsson AIR 3239, a 5G Massive MIMO antenna-integrated configuration with 32 TRX.

A radio product's size and weight are factors that impact the ease of installation and the cost of operating power. The need for more power increases proportionately with the number of radios and

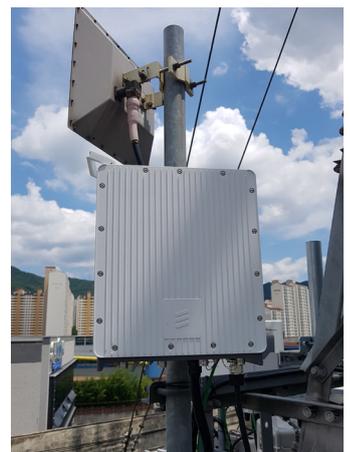
transmitters incorporated within an antenna-integrated radio design.

The AIR 3239 is more compact in size making it easier to transport, with better use of equipment space, making it ideal for providing coverage and capacity in some dense urban and urban areas. By reducing the number of TRXs, the AIR 3239 reduces power related operating costs by 45%.

Extending 5G Coverage

To ensure subscribers have access to good 5G coverage while traveling on public transportation systems, small, lighter-weight radio products are also required to provide coverage within subways and tunnels. To meet these requirements, SKT has been utilizing the Ericsson Radio 4422, a 5G radio unit with 4TRX and a passive antenna design. The Radio 4422 reduces

power related operating costs by 63% as compared to the AIR 6488.



Reduction in Power Related OPEX

	AIR 6488 64T64R	AIR 3239 32T32R	Radio 4422 4T4R
OPEX Reduction	Baseline	45%	63%



SKT says, "As we continue to roll out exciting 5G data speeds and applications to our customers, building our network with precision enables us to expand our 5G network in a way that is both efficient and that provides our customers a superior 5G experience."

5G Momentum

SK Telecom has been and will continue to be a significant contributor to the success of 5G in South Korea as the application base, use cases, and capabilities of 5G continue to evolve. SKT is already evaluating strategies for deploying 5G 28 GHz mmWave to add more network capacity, and studies are underway to determine how 5G can benefit smart manufacturing, transportation and public safety. The South Korean government is also setting targets for the economic areas which 5G should contribute to, including growth in strategic industries, increased exports, and job creation.

It is clear that the expectations for 5G will remain high for many years to come. Meeting these needs economically are important for success. Thus, Ericsson will continue to embrace strategies that enable operators to build their 5G networks with precision. Building with precision will enable SKT and other operators to offer 5G capabilities to subscribers in an optimal manner that maximizes performance while minimizing the Total Cost of Ownership (TCO). As we are learning this year, we are only beginning to see the full potential of 5G – and Building 5G with Precision is a key component to reach that potential.

Want to learn more?

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