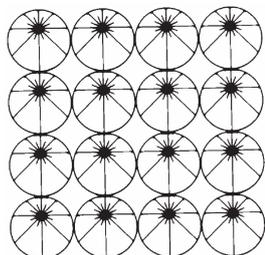


## Foreword



### Solving Social Issues with Measurement

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Commercial mobile 5G services started in the USA in April 2019, followed by roll-outs in South Korea, the UK, and China. In Japan, trial services were offered during events, such as the Rugby World Cup, and full roll-out started in March 2020. In other words, this year marks the start of 5G for Japan.

With 4G, mobile phones have been the locomotive driving widespread person-to-person communications, but the appearance of 5G not only links people but also links "things" to networks (IoT). Progress in communications technologies, such as Factory Automation (FA), self-driving vehicles, etc., is creating an SF-like world. In manufacturing plants, wireless sensors on production lines are collecting data via 5G wireless networks and production processes are visualized by edge-computer processing, leading to more efficient manufacturing. In automotives, automatic acquisition via 5G networks of the latest map information will provide us with data on current location, traffic jams, time to destination, and traffic ahead, etc. When shopping, we will be able to evaluate the prices of objects we want and also pay for them automatically too. These functions are not only convenient, they also meet social needs. Aging societies are a megatrend worldwide, resulting in smaller workforces and requiring factory automation to compensate for too-few workers; self-driving vehicles will help assure mobility for older citizens while replacing drivers of public transport. 5G is going to bring these big changes to our lives and not only as a simple communications medium. And of course, we cannot omit the essential existence of AI technologies. The combination of AI and edge computing enables instant extraction of important information from "big data" like video, converting it to

high-value data and supporting factory automation and self-driving transport.

The switch to 5G will completely change the mobile communications ecosystem. 5G technology will revolutionize links between various worldwide players beyond the boundaries of today's vendors of chipsets, mobile terminals, network infrastructure, and communications carriers. Anritsu is also thinking about how to further strengthen its cooperation with various industries.

For this purpose, Anritsu Technical No. 95 introduces some technologies related to implementation of 5G, such as cutting losses in the food industry. It also describes AI applications and research into mmWave products likely to be used in future 6G technologies.

2020 marks Anritsu's 125th anniversary; for the next quarter century, we are looking to pushing forward with development and expansion of even more advanced "measurement" technologies meeting future social needs. Finally, I hope that each and every one of us will continue putting his and her efforts into using Anritsu technologies to build a better society for all.

