Title: PS-LTE, LTE-R, and LTE-M Networks for Public Safety

Abstract:

The fourth generation of mobile telecommunication standards, LTE, is so successful that it is currently being used by about 2.1 billion mobile subscribers out of about 7.6 billion users worldwide, and the ratio continues to grow. This standard is also very flexible and allows for a variety of different network configurations based on it. This keynote speech introduces three networks that are now being developed for public safety purposes. The PS-LTE (Public Safety LTE) is a standard being developed for public safety. It is a network of reliable and fast communications that can be utilized in national emergency situations. The use of PS-LTE is expected to help extend the barriers of rescue efforts in a catastrophic manner, such as a natural disaster or terrorist attack. LTE-R (LTE-Railway) is an LTE based railway radio communication network to carry train control, command, operational information and monitoring data between on-board radio equipment and related radio infrastructure. This network needs to support not only data but also voice and video services. LTE for maritime wireless communications, LTE-M (LTE-Maritime) network is for providing ships within 100 kilometers of the coast access to high speed mobile broadband services. In Korea, one frequency band is allocated for public safety in the 700 MHz band. Therefore, these three networks should share this one band of spectrum. In this case, they may interfere with each other. This keynote speech discusses technical challenges and solutions to many issues, including the spectrum sharing. The deployment status and plans of these networks are also to be introduced.