

## **New Development of Speech Technology**

### Development of Speech toward Mobile Terminal

#### Universal Design of Speech

The telephone had developed rapidly and is now developing in the form of mobile phones to smartphones. As part of this trend, technologies related to speech are also required to further develop into higher quality, higher compression and low delay for mobile terminals. A low bit rate high quality codec by T. Moriya et al., a distributed large vocabulary continuous speech recognition system by T. Kato, et al., and an acoustic quality improvement technology by M. Suzuki have been proposed. The *talking concierge* services combining with cloud services by A. Ando have already developed into commercial services. Studies integrating language processing in addition to the speech recognition and speech synthesis are also going on. As a result of improvements in analytical technologies and recognition technologies, studies toward the universal design concerning speeches are becoming active. With regard to broadcasting, considering the rapidly aging society, the importance of subtitling has increased, and technology to subtitle automatically using audio recognition technology has been developed by A. Ando, et al. Because the speed of speaking influences the listening, technology to convert speaking speed has been proposed by R. Ikezawa, et al. Along with the development of new sensors, an interesting study on non-audible muttering recognition systems by K. Shikano, et al., has been promoted.