

Toward a Safe Networked Society

Noboru Sugamura

Director of NTT Communication Science Laboratories

At the end of the 20th century, information and communications technologies such as the Internet and cellular mobile telephones greatly changed our social lives. Both the types of changes and the extent of the changes continue to expand, and they represent a radical change in not only the business scene and everyday life but also our communication behavior. Interpersonal communication has widened to include communication between humans and objects, and even communication among objects.

Based on the perception that communication research is the most important task in the 21st century, NTT Communication Science Laboratories was established in Kansai Science City in 1991. Communication science aims to create fundamental rules and concepts by exploring the essential qualities of communication toward the future information-communication world. NTT has presented its vision of "Resonant Communication" and NTT R&D is working with the NTT Group on this vision. The research activities in communication science are strongly related to this vision.

One of the research goals is to exchange information with precision, safety, comfort, and efficiency. The physical safety of humans as well as the security of information and networks is also important. We must balance advances in information, communication environments, and human bodily functions against the comfort and safety of the new information and services. Information resulting from rapid technological innovation may expose us to unforeseen risks. To avoid such accidents, a comprehensive understanding of how human beings process information is indispensable. From this viewpoint, NTT Communication Science Laboratories has been pursuing research that aims to elucidate our information processing mechanisms. Another aspect of comfort and safety is information science. The rash of incidents caused by corruption and crimes is only to be

expected in a highly networked information society. NTT Communication Science Laboratories is investigating the basic theory of networks, information, and security to create a safe infrastructure.

The other research goal is to enhance mutual understanding through the establishment of a communication environment in which people can share their emotions. Even in our advanced information society, we need research that can break down various barriers to let everyone enjoy communication.

To achieve these goals, the approach of NTT Communication Science Laboratories towards basic research takes into consideration information science and engineering viewpoints as well as social and cultural perspectives. The positive role of communication research is becoming increasingly essential to the creation of the future communication environment.

