# Executive Summary

IIR Vol. 57 is our last issue covering 2022. One major topic in Japan's ICT industry over the year was the huge impact that the suspension of ICT companies' services had on activity throughout our society. Television news programs covered the suspension of services not only by traditional telecommunications carriers but also by cloud service providers. And this was not limited to Japan. In South Korea, as well, it was reported that disruptions to smartphone apps with many users affected social life across a wide range of areas.

It goes without saying that ICT companies should be working to improve service quality. In the case of Japan's mobile communications, vigorous discussion about roaming between mobile carriers during emergencies is ongoing. The idea here is that not only should users take steps to protect their own interests by, for instance, arranging alternative means of communication, but service providers should also back each other up to ensure continuity of service in the event of disruptions.

In the mobile communications industry, progress is being made globally on the infrastructure sharing front in pursuit of efficiency, and we are seeing gradual change versus the traditional approach of competing to expand coverage areas by building infrastructure. And when it comes to emergency roaming, too, this shift from infrastructure building being seen as an area of competition to it being an area of cooperation also looks to be in play.

With a new order and new ideas being discussed and worked out in the ICT industry, including with respect to international cloud services, we are keeping a close eye on what we believe to be signs that the fundamental mobile communications business frameworks are being probed from different perspectives.

The IIR introduces the wide range of technology that IIJ researches and develops, comprising periodic observation reports that provide an outline of various data IIJ obtains through the daily operation of services, as well as focused research examining specific areas of technology.

Our periodic observation report in Chapter 1 presents the 2022 edition of our look at Internet trends as seen from IIJ's infrastructure. The report covers IPv4 and IPv6 routes on the Internet, an analysis of DNS queries obtained from the full resolver provided by IIJ, and IPv6 and mobile traffic. The Internet is constantly changing, and we believe that considerable insight can be gained from continuously analyzing, on both an absolute and proportional basis, data that is easy to overlook in the midst of such change. This is the rationale behind our periodic observation reports. The results this year are again quite intriguing, and I encourage you to take a look.

The focused research report in Chapter 2 introduces VX, IIJ's new backbone network. Released in 2022, VX was built for use with new services and thus implements features such as SDN, automation, and API linkages. The report explains the background to VX's development and its implementation, and also goes over the history of the backbone network so far. It also provides some insight into our thinking about the IIJ backbone network, which has been at the core of IIJ's business since its founding.

Chapter 3 is our focused research report on illumino, the analytics platform we built within IIJ. The services and systems we operate generate massive amounts of data. Collecting and analyzing that data is something that creates meaningful value for both us and our customers. The report discusses the possibilities that the collection and analysis of data open up and what sort of things we are trying to achieve, along with an example of this in action.

Through activities such as these, IIJ strives to improve and develop its services on a daily basis while maintaining the stability of the Internet. We will continue to provide a variety of services and solutions that our customers can take full advantage of as infrastructure for their corporate activities.

**Junichi Shimagami**

Mr. Shimagami is a Senior Executive Officer and the CTO of IIJ. His interest in the Internet led to him joining IIJ in September 1996. After engaging in the design and construction of the A-Bone Asia region network spearheaded by IIJ, as well as IIJ's backbone network, he was put in charge of IIJ network services. Since 2015, he has been responsible for network, cloud, and security technology across the board as CTO. In April 2017, he became chairman of the Telecom Services Association of Japan's MVNO Council, and in June 2021, he became a vice-chairman of the association.