# Executive Summary

In the IIR, we have published in-depth periodic observations of the Internet and network-related technology themes. Starting with this volume, we have reorganized its content. The quarterly briefing on Internet security that we used to present here will now be delivered in a different format to provide more timely information.

Going forward, the IIR will be comprised of periodic observation reports that provide an outline of various data obtained through daily service operation, as well as focused research where we examine specific areas of technology, with a focus on the wide range of technologies that we research and develop at IIJ.

In Chapter 1, we present an analysis of broadband traffic trends as our periodic observation report for this volume. We perform this analysis every year, but this year we observed a slowdown in the growth of both broadband and mobile traffic. Our analysis of TCP port usage also revealed that port 443 HTTPS now accounts for an even larger percentage of the total traffic.

In Chapter 2, we discuss the server-based honeypots that IIJ uses for observation. With an increasing number of attacks targeting IoT devices recently, our honeypots require additional functions to accurately observe these new attacks. Here, we provide a general overview of these honeypots, and discuss the functions we are adding, as well as the data observed during this process.

In Chapter 3, we look at a project involving the construction of modular data centers in Lao PDR. IIJ runs a modular data center at the Matsue Data Center Park, and we are developing new technologies through a range of experiments. Based on the technology we have developed through these activities, we built a modular data center in Lao PDR. Here we provide a summary of this project, and discuss the role that IIJ played in the project, as well as the technology we introduced.

In Chapter 4, we cover SMF. SMF, short for SEIL Management Framework, began as a function for supporting the operation and management of the SEIL routers that IIJ developed 20 years ago. We later generalized this framework to enable it to be used with equipment other than SEIL, and we have continued development to support the device management needs of the IoT age by applying technology refined through SMF, such as expanding the monitoring function to collect data. Here we provide a summary of this history.

IIJ continues to strive towards improving and developing our services daily, while maintaining the stability of the ICT environment. We will keep providing a variety of services and solutions that everyone 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 MVNO Council.