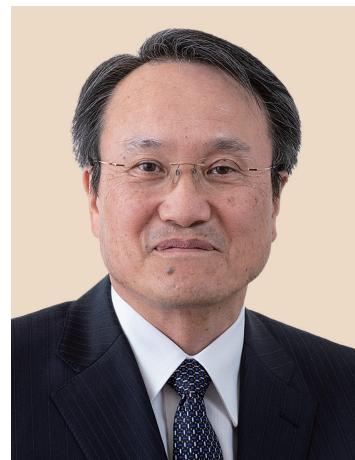


# FOREWORD

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Remarkable progress has been achieved in ICT (Information and Communication Technology) in recent years, and the Japanese government has proposed the construction of “Society 5.0,” a social model for a new era centering on this kind of technological innovation, as a core element of national policy. As society enters this new era of innovation, industry is also introducing the new technologies of IoT, AI and big data analysis (data science) at a rapid pace. I think that it is fair to say that this innovation, which spans diverse directions, is the result of digital technology, and application of the vast amount of multidimensional digital data that digital technology has made possible.

The JFE Group is also powerfully promoting the application of this technology and data. Since data science is the linchpin for application of digital data, this Special Issue of JFE Technical Report, which summarizes recent efforts related to ICT and digital data in the JFE Group, is entitled “Data Science.”

JFE Steel Corporation is promoting the adoption of IoT by reconstructing the information infrastructure of its manufacturing processes as a next-generation type, while also implementing process analysis, modeling and various types of optimization utilizing leading-edge level data science. To mention just an example, in electrical maintenance, JFE Steel has deployed a malfunction response support system using AI company-wide. JFE Engineering Corporation has realized advanced IoT which enables remote monitoring and AI-supported remote operation of waste incineration plants throughout Japan from its Global Remote Center in Yokohama, and has begun to supply various forms of ICT, beginning with a plant remote integrated monitoring platform, and related services. JFE Techno-Research Corporation has established a Data Science Center and has begun to provide solutions utilizing deep learning and other data science technologies.

While we still have not entered the realm of innovation, this issue of JFE Technical Report presents examples of the results of our efforts like those described above, which we hope readers will find interesting. Both JFE Steel and JFE Engineering have created full-time organizations for data science, and are promoting measures to further accelerate digital

transformation (DX), and both companies are also actively cooperating with public research institutes and dedicated vendors in this field.

DX by use of digital data, data science and AI can be considered a key technology which will bring about further innovation in society in the future. We also recognize its importance as one measure for achieving the JFE Group's Corporate Vision of "Contributing to society with the world's most innovative technology." We intend to utilize these technologies widely, in areas from environmental protection to the supply of high quality and reliable products and services, and will ceaselessly promote the development and practical application of new technologies for continuous growth as a corporate group which can be evaluated highly by its customers.