

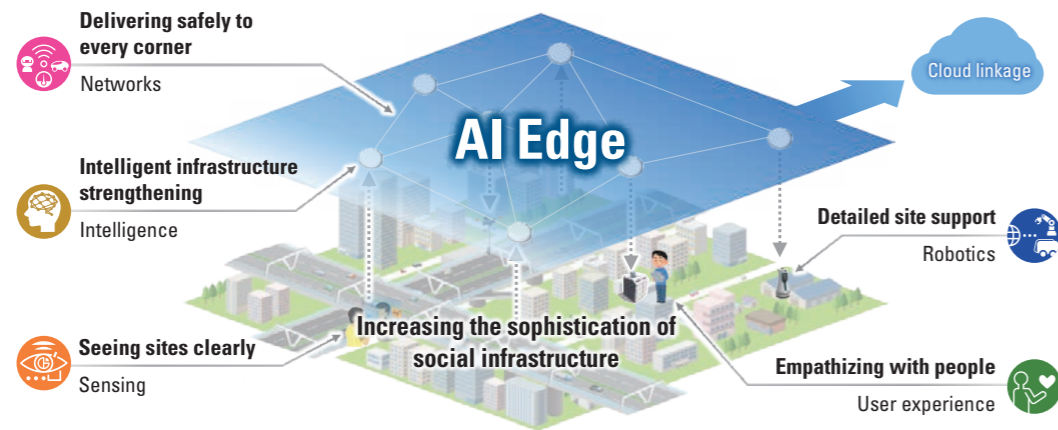
TECHNOLOGY STRATEGY

Since its founding, OKI has contributed to increasing the sophistication of social infrastructure, drawing on our strengths of automation and manpower reduction, which are built on our network technologies and on our digital technologies for terminal devices. Going forward, we intend to incorporate recent advances in AI technologies into OKI technologies installed in edge i.e. on-site domains, and thereby provide direct value to customers facing diverse social issues. In order to create rapid innovations while still responding flexibly to change, we are also implementing research and development processes based on our “Yume Pro” Innovation Management System.

Focus Technology: AI Edge

In Medium-Term Business Plan 2022, OKI identified AI Edge as a focus technology and specified five cutting-edge technical fields to strengthen it: sensing, networks, intelligence, robotics and user experience. By providing value via the 17 R&D themes listed below, our aim is to refine, strengthen,

and coordinate technologies in the mid- and long-term. In addition, we are engaged in “improving AI environments,” which refers to the process of improving environments to strengthen AI Edge from a human resources and governance perspective.



Five Technical Fields to Strengthen AI Edge

| Technical Field | Value Provided | Research and Development Themes | | | |
|------------------------|---|---|---|---|---|
| Sensing | Seeing sites clearly • Measuring unseen objects • High environmental resistance • Real-time • Low-power/ultra-compact | Advanced photonics-based sensors Shift optical technologies from communications to sensing | Increased sophistication of real-time AI vision Expanded use of vision sensors in edge domains | High-reliability sensing via fusion Increased sophistication of various sensors, and increased reliability via sensor fusion | |
| Networks | Delivering safely to every corner • Low-power • Eliminating need for feed lines • High-reliability IoT devices • Reduced management costs | Edge sensor networks Coordination between low-power multi-hop networks and AI | Zero-energy IoT Resolving power supply problems related to growing use of IoT | Network security Improved safety for increasing numbers of IoT devices | 5G networks Responding to widespread availability of 5G and local 5G |
| Intelligence | Intelligent infrastructure strengthening • Explainable and Reliable AI • Increased AI sophistication of edge • Eliminating dependency on large volumes of data • Affinity with people/society | Compact AI Smartification of AI, and shifting AI from the cloud to edge | Explainable AI Shift to high-quality, trustworthy, and high-transparency AI | Small data learning and domain generalization Shift from focusing on data to increasing technical value | Inter-AI cooperation/social optimization Optimization of social infrastructure |
| Robotics | Detailed site support • High operating quality • Scalability • Advanced remote operation • Mobility | Escalation AI—AI discovers its limits Humans seamlessly fill in for tasks beyond AI capabilities | Cooperative autonomous robotics Increased sophistication of services through hybridization of autonomous and cooperative | Automated processes that support variable-mix variable-volume production Increased automation at variable-mix variable-volume production sites | |
| User Experience | Empathizing with people • Real-time • Centralized visualization • “Individual”-specific • Optimization of “Individuals” and “Organization” | Digital twin console Remote environments that transmit on-site conditions in real-time | “Individual”-specific interactions Realizing interactions that respect the individual | Understanding and providing support for well-being Data utilization that aims to optimize conditions for humans and organizations | |

Initiatives for Improving AI Foundations

AI technologies present new business issues not seen in previous technologies, mainly in terms of ethics and quality assurance. To ensure that our customers can use AI with peace of mind, in September 2019 we formulated the OKI Group AI Principles, which outlines the principles governing

our development and provision of AI technologies, products, and services. As an “AI-Ready” company that can use AI in an appropriate and sophisticated manner, the entire Group is carrying out necessary foundational improvements based on these principles.

Overview of Improving AI Environments



OKI Group AI Principles
Rooted in the OKI Group’s corporate philosophy, these principles make explicit what types of AI technologies and AI products we intend to provide (Established September 30, 2019)

| Category | Measure | Outline |
|--------------------------------|---|---|
| Governance | Risk management | Managing risks stemming from the development, provision, and use of AI technologies |
| | Quality management | Reinforcing quality management systems according to the unique, legal, and ethical risks posed by AI technologies |
| Development of human resources | Foundational training/practical training | Establishing training programs covering foundational knowledge, risks, and technical aspects of AI according to role and rank |
| | AI and Data Science Social Implementation Lab | Resolving on-site problems and nurturing practical skills via a joint OKI/Chuo University team |
| | AI skills tests | Evaluating AI skill levels Providing feedback to human resource development programs |

From the perspective of human resource development, we conduct AI training according to job-type and rank, offering a variety of educational programs ranging from group training to online learning. As of the end of fiscal year 2020, more than 7,000 employees have received our AI literacy training, via which employees of all job-types learn foundational AI knowledge.

In August 2020, we partnered with Chuo University to establish the AI and Data Science Social Implementation Lab. Under Chuo University’s guidance, it provides practical training for resolving on-site issues faced by OKI, including proof of concept and actual projects. As of July 2021, the lab is engaged in seven projects, primarily involving our business divisions.

Through these educational activities, we plan to expand the number of AI engineers with practical skills in our workforce to 300 by the end of fiscal year 2022; as of the end of fiscal year 2020, we had successfully trained 273 engineers.

R&D Process

In fiscal year 2020, OKI formulated the Yume Pro Technology Process for research and development innovations, and started implementing it at its R&D division. We have incorporated the five steps outlined in ISO 56002—namely “Identify opportunities,” “Create concepts,” “Validate concepts,” “Develop solutions,” and “Deploy solutions”—into our research and development process, and assigned each step a name, Technology Step (T Step), with numbers ranging from 0 to 4. We have subdivided the 17 broad R&D themes outlined above into 50 more specific topics (as of July 2021), and manage each topic individually according to its T Steps.

Our R&D division is tasked with overseeing T Steps 0 to 2, while our business section oversees T Steps 3 and 4. From the concept establishment stage, we have strengthened both coordination with the business section and co-creation with our partners, with the goal of realizing efficient development with minimal rework.

AI Human Resource Development System

