

# Corporate Report 2018



**MIRAIT Holdings Corporation**

CSR Office

5-6-36, Toyosu, Koto-ku, Tokyo, Japan 135-8111  
Phone: 81-3-6807-3120 Fax: 81-3-5546-2962

<https://www.mirait.co.jp/en/>



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## Group Overview

### Overview of MIRAIT Holdings Corporation

**Date of establishment:** October 1, 2010

**Head office:** 5-6-36, Toyosu, Koto-ku, Tokyo

**Representative:** President and Chief Executive Officer Masatoshi Suzuki

**Capital:** 7 billion yen

**Stock Listing:** 1st Section of Tokyo Stock Exchange (Security code: 1417)

**Total outstanding shares:** 85,381,866

**Ratings:** Rating and Investment Information, Inc. (R&I) A-  
Japan Credit Rating Agency, Ltd. (JCR): A

**End of fiscal year:** March 31

**Number of employees (consolidated):** 9,010 (as of June 30, 2018)

**Number of consolidated subsidiaries:** 54 (as of March 31, 2018)

### List of Group Companies

#### ► MIRAIT Corporation

M's Frontier Corporation  
DAIMEI TECHNO CO., LTD.  
KOKKO SYSTEMS CO., LTD.  
Tohoken System Engineering Corp.  
Meisei Correspondence Co., Ltd.  
Nisshin Tsuko Co., Ltd.  
DAIMEI NETWORK CO., LTD.  
DAIMEI TSUSAN CORP.  
SINKO ELECTRIC CORP.  
MIRAIT-X Corporation  
TODENTSU Access Corporation  
TODENTSU Network Co., Ltd.  
Nissetsu Co., Ltd.  
Okisokou Co., Ltd.  
Libnet Co., Ltd.  
TIMETEC Co., Ltd.  
Trust System Corporation  
HOPE NET Co., Ltd.  
Line Connect Corporation  
Nippon Sangyo Corporation  
Nihon Toyocomu Corporation  
DAIMEI SLK (PRIVATE) LIMITED  
(Sri Lanka)

#### ► MIRAIT Technologies Corporation

AST-ENG Corp.  
Lapisnet Co., Ltd.  
COTONET ENGINEERING Co., Ltd.  
Nara Construction Co., Ltd.  
Ligare Co., Ltd.  
Agility RISE Co., Ltd.  
Comlead Co., Ltd.  
Nishinihondenko Corporation  
GRAND CREATE CO., LTD.  
KATAKURA CONSTRUCTION Co., Ltd.  
MIRAIT Information Systems Co., Ltd.  
ACTIS Corporation  
Practical Solutions Inc.  
Fucom Corp.  
Kinki Denki Corp.  
MIRAIT Technologies Australia Pty. Limited  
(Australia)  
MIRAIT Technologies Myanmar Co., Ltd.  
(Myanmar)  
MIRAIT PHILIPPINES INC. (Philippines)

#### ► TTK Co., Ltd.

Tobu Denwakoji Corporation  
Hokubu Densetsu Corporation  
Morioka Denwakoji Corporation  
Hakkou Tsushinkoji Corporation  
Senshu Tsushinkensetsu Corporation  
Yamagata Tsushinkoji Corporation  
Fukushima Denwakoji Corporation  
TTK Techno Co., Ltd.

#### ► Lantrovision (S) Ltd. (Singapore)

Lantro (S) Pte. Ltd.  
Lantro (Malaysia) Sdn. Bhd.  
Lantro (HK) Limited  
VRnet (S) Pte. Ltd.  
Lantro (Taiwan) Ltd.  
Lantrovision Korea Co., Ltd.  
Lantro (Shanghai) Co., Ltd.  
Hangzhou Lantro Co., Ltd.  
Appsilan Asia Pte. Ltd.  
Infilan Pte. Ltd.  
Lantro Technologies India Private Limited  
Lantro Phils. Inc.  
Lantro (Penang) Sdn. Bhd.  
ADNOS SOLUTIEEN Pte. Ltd.  
Innovative Energy Systems & Technology Pte. Ltd.  
Altro Solutions Pte. Ltd.  
Lantrovision Inc.  
Lantro (Thailand) Co., Ltd.  
Lantro (Vietnam) Co., Ltd.  
Lantro (Cambodia) Co., Ltd.  
Lantro Myanmar Co., Ltd.

Including consolidated subsidiaries and overseas subsidiaries (as of October 1, 2018)

## Corporate Report 2018

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#### Editorial Policy

This report outlines the policies, plans and achievements of the MIRAIT Group toward creating a sustainable society. The MIRAIT Group seeks to proactively deal with various social issues. This report is divided into sections based on three themes: "Building and Maintaining a Comfortable Society" (for Business Operations), "Building and Maintaining Safe, Reliable Technical Capabilities" (for Product Quality, Occupational Safety and Human Resources), and "Building and Maintaining the Trust of Society" (for Environmental Protection, Local Communities, and Governance).

#### Boundary

In this report, we outline the approaches and achievements of the CSR efforts of the MIRAIT Group as a whole. Please note that each performance figure in the report is disclosed with the boundary by which it is available at present (as indicated in the text or in supplementary notices).

#### Related Information on our website

**CSR Information**  
<https://www.mirait.co.jp/csr/>  
(note: previous reports are also available)  
**Corporate Information**  
<https://www.mirait.co.jp/en/company/>  
**Business Information**  
<https://www.mirait.co.jp/en/service/>  
**IR Information**  
<https://ir.mirait.co.jp/en/>

#### Reporting Period

Fiscal 2017  
(April 1, 2017 to March 31, 2018)  
(note: certain portions refer to activities from both before and following the above-mentioned period)

#### Guidelines Referenced

GRI Sustainability Reporting Guidelines (G4)  
ISO26000 (Guidance on Social Responsibility)

#### Date of Publication

November 2018

#### Inquiries

CSR Office  
MIRAIT Holdings Corporation  
5-6-36, Toyosu, Koto-ku, Tokyo, Japan  
135-8111  
Phone: 81-3-6807-3120



# Building and Maintaining

Starting with telecommunications infrastructure, we build a broad range of systems offering greater convenience in daily life and society as a whole and ensuring greater safety and security (comprehensive engineering: configuration), and maintain them (servicing: maintenance and operation) both in Japan and overseas.

## NTT Operations

The MIRAIT Group builds, maintains and operates the NTT Group's fixed-line communication facilities throughout every region in Japan for both NTT East and NTT West. We are currently involved in multiple construction projects to advance the Hikari Collaboration Model as the optical fiber networks driven by the NTT Group become even more prevalent. When disaster strikes, our emergency repairs and reconstruction safeguard these communication networks.



## Multicarrier

The MIRAIT Group builds, maintains and operates mobile communications facilities to support the increasing speed and capacity of mobile networks. We are currently involved in the construction to advance 4G networks while participating in trials for 5G networks. Our Group also builds and maintains fixed-line communications facilities for communication carriers, conducts CATV, and builds and maintains fixed-line and mobile communications facilities overseas (Australia, Philippines, Myanmar, and Sri Lanka).



## Environmental and Social Innovation

The MIRAIT Group builds, maintains and operates solar power generation systems, EV charging stations and storage battery systems to make new energy infrastructures more accessible. We also undertake electrical and HVAC engineering works including undergrounding of utility poles, wiring and cables as well as installation of LED lamps, contributing to building next-generation environmental and social infrastructures.

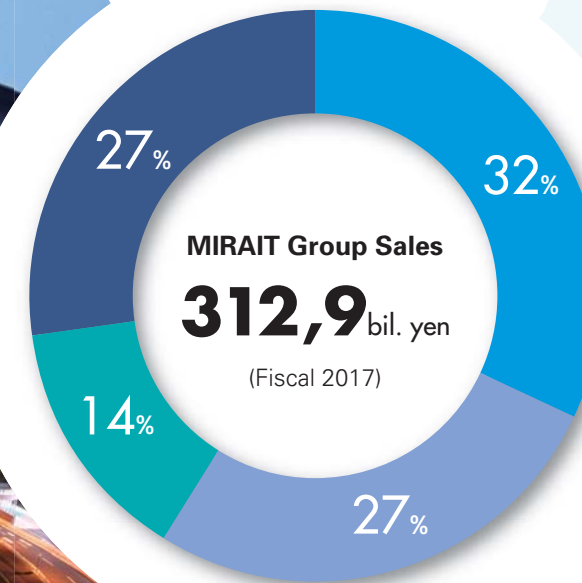


## ICT Solutions

The MIRAIT Group provides high-quality solutions through ICT technologies that address wide-ranging social and business challenges, such as introducing LAN and Wi-Fi, ensuring security, advancing building management and promoting operational efficiency. We have begun building and operating data centers and using drones to further expand the breadth of these solutions.



## Sales by Segment



- NTT Operations
- Multicarrier
- Environmental and Social Innovation
- ICT Solutions

## Overseas Business Expansion

### Multicarrier Operations in Australia

- MIRAIT Group has been contracted by a major telecommunications firm to update outdoor systems in four eastern states (New South Wales, Victoria, Queensland, and Tasmania) vastly larger than Japan (50,000 units over three years beginning in 2017).
- MIRAIT Group facilitates more efficient construction by databasing the capabilities of local construction partners and standardizing operations in addition to developing proprietary IT tools for remote central monitoring of construction.



### Multicarrier Operations in the Philippines

- MIRAIT Group is handling the requirements to provide Fiber to the home (FTTH) for major telecommunications firms as the Philippine government advocates broadband standardization
- MIRAIT Group has not only expanded sites to the capital of Manila but also Cebu City, Bacolod City and the southern city of Davao City.



### Multicarrier Operations in Myanmar

- MIRAIT Group has been recognized as the primary contractor for outdoor construction by major telecommunications firms and built an optical fiber backbone of 3,000 km (as of March 31, 2018).
- MIRAIT Group has construction offices in Mandalay, which is the second-largest city in Myanmar, and has driven the construction capabilities in difficult terrain as well as remote country areas. Our Group is also in charge of construction in the capital of Naypyidaw.
- The MIRAIT Group respects the predominate Buddhist culture in Myanmar and makes all the necessary considerations when undertaking construction as it does in every area with other predominate religions.



### ICT Solutions in Singapore

- The MIRAIT Group made Lantrovision whose businesses include LAN design, installation, maintenance, consulting and device sales in 13 Asian countries its wholly-owned subsidiary in January 2016.
- Our access to the customer base of Lantrovision's sales network in 28 cities opens avenues to both inbound (Japanese bases of multinational organizations) and outbound (Asian bases of Japanese enterprises) LAN construction demand as part of the MIRAIT Group.





**Masatoshi Suzuki**  
MIRAIT Holdings Corporation  
President and Chief Executive Officer

## Facing a turning point of the era, we will tackle societal challenges with our “comprehensive engineering and services” capabilities.

### At a turning point of the era

I vividly perceive pivotal changes taking place right now through managing our businesses each day. The three “Ds”, digitalization, decarbonization and demographic change, gathering continued attention as global megatrends, are causing a societal metamorphosis everywhere, which is unseen in the past and can even be destructive. In Japan, its aging society has seen changes in the age composition and finally a decline in the total population size. In the meantime, advances in technology have been remarkable and the information communications industry has entered an age of IoT<sup>\*1</sup>. These trends combined have brought a situation that can be called a “turning point”. As many of the social infrastructures developed after 1945 have reached an age for renewal, reconstructing them in ways that serve visions for the future instead of simply renewing them is in need.

New form for cities and society as a whole is being sought with 2020, the year of the Tokyo Olympics and Paralympics, as a milestone.

I believe the concept of “network society” in which various entities working in different locations are efficiently linked would provide an effective solution as we respond to these social needs. Flexibly connecting finite resources including human capital would improve productivity. Engineering, which can be described as “an art of giving concrete shapes to various ideas”, is the core business of MIRAIT Group in Japan and overseas. It is our mission to serve building a society that fully utilizes information and communications technology (ICT) and realizing potentials of network society. We strive to fulfill this mission every day, while recognizing the issue of high energy consumption by information and communication infrastructure which network needs and proposing solutions.

<sup>\*1</sup> IoT (Internet of Things) refers to innovations in connectivity of various devices and products via the internet.

### Challenging new frontiers

In the Third Medium-term Management Plan announced in April, 2017, the MIRAIT Group set “expanding the business operations and business model innovation” as the first amongst its key measures, clearly indicating its challenge into “frontier domains” that are beyond the existing business. This shows our stance toward responding to new social needs based on the foundation of our achievements until now while also the will to carry on the frontier spirit that has been passed down since our establishment.

We have been amassing technological expertise through our works in telecommunications, civil engineering, and architecture; electrical, power, and switching; and wireless and broadcasting. In addition to these fields in which we have long been cultivating our capabilities, we have been building on ICT related technologies over the recent years. On the basis of such technological capitals, being refined and enriched by adding new elements, we engage in projects in such promising areas as management of aging infrastructure, environment and energy, Wi-Fi solutions, IoT and big data, and AI. We actively learn about works our customers and partners do and design our engineering and services that match each situation, pursuing a right balance between costs and quality. As making such concrete and consistent efforts, we are eager to make special contributions to advancing smart cities and smart life in the changing society, as engineering professionals.

We plan to grow the combined sales of environmental and social innovation and ICT solution businesses, slightly less than 40% in fiscal 2016, to approximately 60% by the end of fiscal 2020.

### Increasing productivity

In our Group's base domain of information and communication infrastructure (construction, maintenance, and operation of fixed and mobile communications facilities and CATV facilities in Japan), we work to improve productivity via multifaceted approaches while responding to social needs.

One of the core initiatives of increasing productivity is continuous KAIZEN activities. An internal system, KAIZEN Fellow, has been firmly established and we are promoting proposals for improvement from employees working on-site, led by those with appropriate qualifications. Nearly 17,000 proposals were submitted in fiscal 2017, with both the number and quality of proposals rising. Outstanding proposals are shared among the entire Group, fostering organizational learning. This initiative may seem subtle but will substantially impact profitability. I am keen to embed a responsible corporate culture where on-site employees take

a lead in solving on-site issues. We are also integrating offices to improve inefficiency caused by dispersion of sites. We plan to merge operational sites of our business for NTT from approximately 70 to 50 throughout Japan by the final year of the Medium-term Management Plan (fiscal 2020).

Furthermore, we will make efforts to keep a consistent flow of construction works throughout a year with the cooperation of our customers, while reducing costs chiefly through streamlining of operations. The MIRAIT Group also works to enhance our construction capabilities (including the group companies and affiliated companies), expand our customer base, improve our profit structure, and reduce overheads by reforming and systematizing operational processes.

### Mobilizing human capital and evolving organizational capabilities

Businesses of MIRAIT Group are underpinned by our associates with wide range of specialized expertise and experience. As such, strengthening the human capital is one of its key measures in the Medium-term Management Plan. Our employees currently have a total of approximately 11,000 qualifications related to construction or software and we seek to further increase this number so we can agilely respond to new technological needs. We will designate priority qualifications and continue to provide those expecting an exam with opportunities to have hands-on experiences.

We are also working to strengthen basic abilities of our engineers. We are offering training and promoting learning on the job for in-depth understanding of customer needs as well as for proposals and construction and maintenance practices that meet customer expectations.

In addition, we are turning our organization into one where knowledge and perspectives of diverse human resources can be put to good use. Diversity in an organization can be a great asset in a rapidly changing environment. From this viewpoint, we have also been working to help female employees take on more active roles, with our two core companies, MIRAIT Corporation and MIRAIT Technologies Corporation, awarded “Eruboshi” certification in fiscal 2017. We also tackle continuous improvement of occupational safety and health, combined with work-style reforms, to enable each employee to work in comfort and exert their full potential.

There are opportunities in development of human capital and organizational capabilities which are key aspects in the business of MIRAIT Group. Our group-wide initiatives for this purpose include creating an environment for all human resources to exert their full potential, assigning employees to locations that are convenient to work, integrating



Third Medium-term Management Plan (FY2017 to FY2020)

<b>Basic Policy</b>	Expansion of core business corresponding to changes in social structure and communication environment	
	The challenge of business model innovation in response to diversification of customer needs	
Promoting business administration while securing profits and aiming at the enhancement of the corporate value and sustained growth as a comprehensive engineering & services firm		
<b>Key Measures</b>	<b>Expanding business operations/Business model innovation</b>	<ul style="list-style-type: none"> <li>- Aggressive development of frontier domains in environment/energy, IoT, and others</li> <li>- Expanding available price and quality variations corresponding to customer needs</li> <li>- Expanding business fields by making full use of a variety of technology capabilities, of our customer base, and of a nationwide operation structure</li> <li>- Increasing sales capabilities by promoting partnership strategies</li> </ul>
	<b>Strengthening business foundation/Increasing productivity</b>	<ul style="list-style-type: none"> <li>- Efforts toward construction standardization and review of group formation methods</li> <li>- Promoting optimization through group synergy</li> <li>- Improving profitability through strengthening of the account system, and by thorough budget management of individual construction projects</li> </ul>
	<b>Strengthening the human resources foundation</b>	<ul style="list-style-type: none"> <li>- Reinforcing technical strength including qualification acquisition</li> <li>- Reinforcement of general engineering power in response to the expectations of the customer</li> <li>- Realization of vitality in the workplace through work-style reforms</li> </ul>
	<b>Capitalization strategy /Returns policy</b>	<ul style="list-style-type: none"> <li>- Maintaining a healthy financial standing</li> <li>- Achieving ROE of 8% or more</li> <li>- Stable and continued dividends is the basic policy on shareholder returns</li> <li>- Regarding the total return ratio, with a target of 30% or more, decisions will be made after comprehensive consideration of results and funding conditions</li> </ul>
	<b>Changing corporate culture</b>	<ul style="list-style-type: none"> <li>- Establishing the MIRAIT brand, aiming for higher productivity through reform, prioritizing safety and security</li> <li>- Promoting CSR by strengthening corporate governance and environmental stewardship</li> </ul>

operational sites, and reforming business structures (such as reducing tiers in businesses involving partner companies).

Fiscal 2017 results and Fiscal 2017 results and future management integration

The net sales in fiscal 2017 increased by 29.7 billion yen from the previous year to 312.9 billion yen. Net sales increased in all businesses, especially in the ICT Solutions business (18.7 billion yen increase) where there was a large amount of temporary demand for work to resolve 700MHz TV reception interference along with a steady demand for PBX/LAN cabling work and in the Multi-carrier business (7.2 billion yen increase) which also had increase in works for advancements in 4G and for 700MHz/3.5GHz. Orders received increased by 3.0 billion yen from previous year to 326.3 billion yen, marking a record high of 128.2 billion yen, an increase of 13.4 billion yen, in the construction account carried forward.

Operating income also increased greatly from previous year by increase of 6.7 billion yen to 16.7 billion yen. As a result of increase in net sales, improvement of gross profit margin in each business, and decrease in SG&A, operating income ratio increased by 1.8 points from the previous year to 5.3%. Net income increased by 5.1 billion yen to 11.5

billion yen and return on equity (ROE) came to 8.8%.

MIRAIT Group has been expanding and strengthening business domains with the aim of becoming a comprehensive engineering & services firm. We have welcomed TTK Co., Ltd. (Sendai City) in October 2018 and SOLCOM Co., Ltd. (Hiroshima City) and Shikokutsuken Co., Ltd. (Imabari City) in January 2019. These three companies have built long-term close relationship with the customers in their respective areas and have established their presence. Through coordinating with these three companies, the MIRAIT Group, which engages in business across Japan with a focus on Tokyo and Osaka, will greatly increase its group strength in the Tohoku, Chugoku, and Shikoku areas.

Under these circumstances, we expect consolidated net sales of 365.0 billion yen (324.0 billion yen for current Group) and operating income of 18.5 billion yen (16.5 billion yen for current Group) in fiscal 2018.

We plan to assess synergy effects that will be created by integrating management and layout detailed steps toward the integration while enhancing business development capabilities and increasing productivity. We will also be formulating a new plan for fiscal 2019 and beyond that will further develop the MIRAIT Group as an corporate group that continue to grow sustainably with the society from

medium to long term perspective by the next spring.

Shareholder Returns

In determining shareholder returns, it is our policy to pay dividends consistently, to sustain the total shareholder return at more than 30%, and to make judgments taking comprehensive factors into consideration including the Company's business results and cash position. In fiscal 2017, the year-end dividend increased by 5 yen, for a total of 35 yen in annual dividend per share (interim: 15 yen, year-end: 20 yen). In fiscal 2018, we expect annual dividend to be 40 yen per share (interim: 20 yen, year-end: 20 yen).

Serving the future as "Your Company"

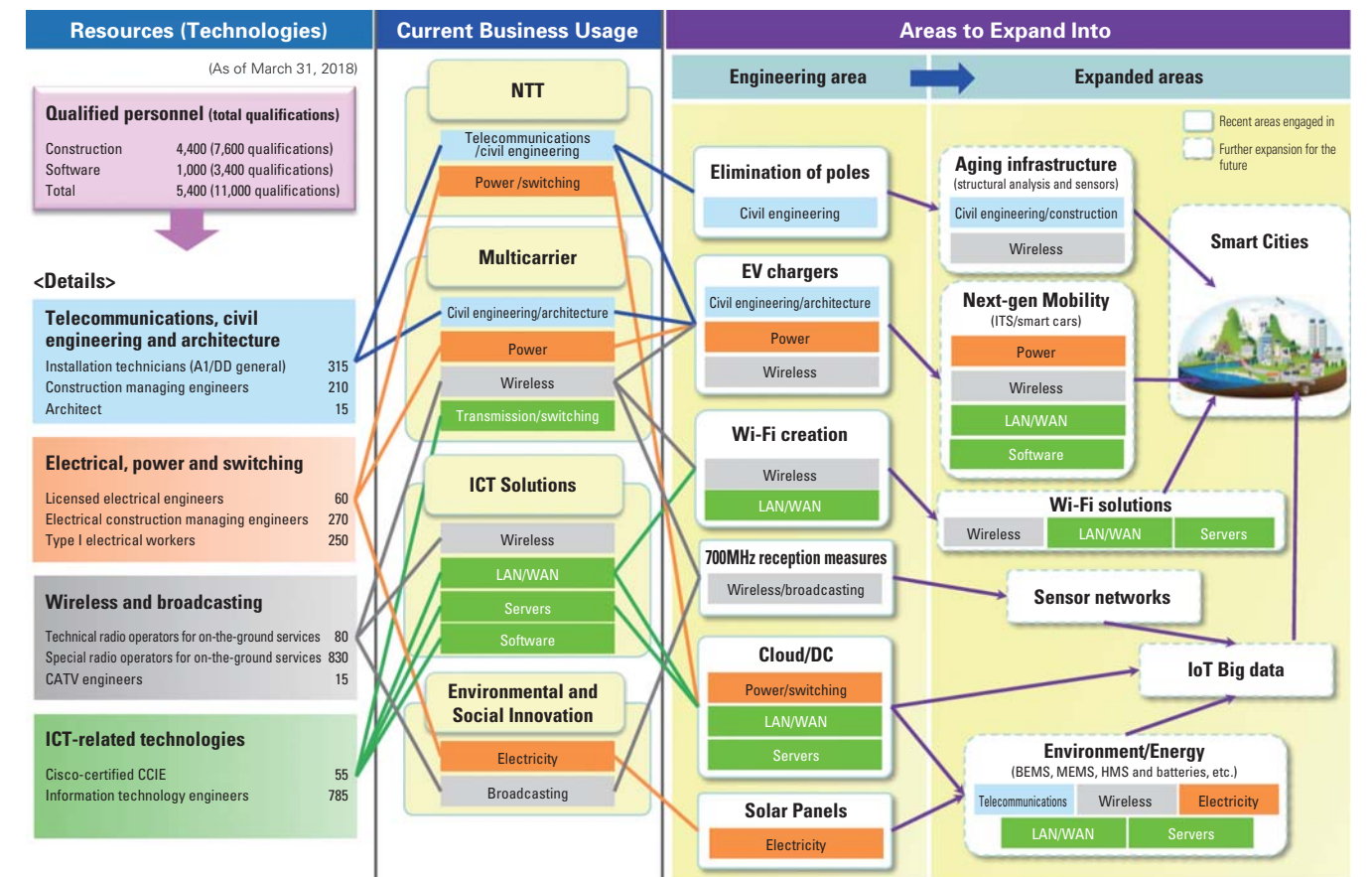
We believe that responding to societal needs to be a company that serves the future would create next works and open new paths for us. We will contribute to United Nations Sustainable Development Goals (SDGs\*2), a set of international targets for realizing a sustainable world, through all our business activities. We will also work to identify risks and opportunities for our business from a wider perspective and to effectively respond to them, strengthening our ESG.

We align our future to that of the society as it keeps changing in search of a vision. We engage in works that need to be done for the society and works that we want to tackle, one at a time with sure quality, to accumulate trust from our customers and all other stakeholders involved. Each of our associates paves a path for new work and that work in turn fosters his or her growth. This process nurtures human capital, earns rewards for the contribution, and leads to next steps. We will utilize individual capabilities with organizational strength through supporting efforts of the associates and with flexible group structure that allow group companies to operate actively. Engineering can be characterized as "making things with customers". This cycle cultivates sustainability as a company. It applies particularly well to us as we create works from scratch with our customers in new domains. Being endowed with opportunities to serve society in such ways convinces me that we are "a company sustained by society".

I often express this thought by using the term "Your Company". It is our hope that every reader of this report will come to see MIRAIT Group "as a company managed for us". We will move forward, one step at a time, to always remain an enterprise that readily changes to meet social needs.

\*2 SDGs (Sustainable Development Goals) are the blueprint to achieve a better and more sustainable future for all adopted in United Nations General Assembly in September 2015.

Expansion of Business Domains Utilizing Technologies



# CSR of the MIRAIT Group

CSR of the MIRAIT Group is underpinned by the “MIRAIT Way” that is to bring together all the members of the MIRAIT Group as one. With “Building and Maintaining a Bridge to the Future.” as a key message, the MIRAIT Group pushes forward medium- to long-term efforts.

## The MIRAIT Way

We have established the MIRAIT Way for all members of the MIRAIT Group to be brought together as one. Each individual member is urged to be aware and to put this approach into practice. The MIRAIT Way consists of: the Basic Management Philosophy which lays out our raison d’être and values; the Code of Conduct that concisely outlines proper daily conducts; and the Charter of Corporate Ethics giving the basic policy and concrete guidance regarding business ethics for all officers and employees.

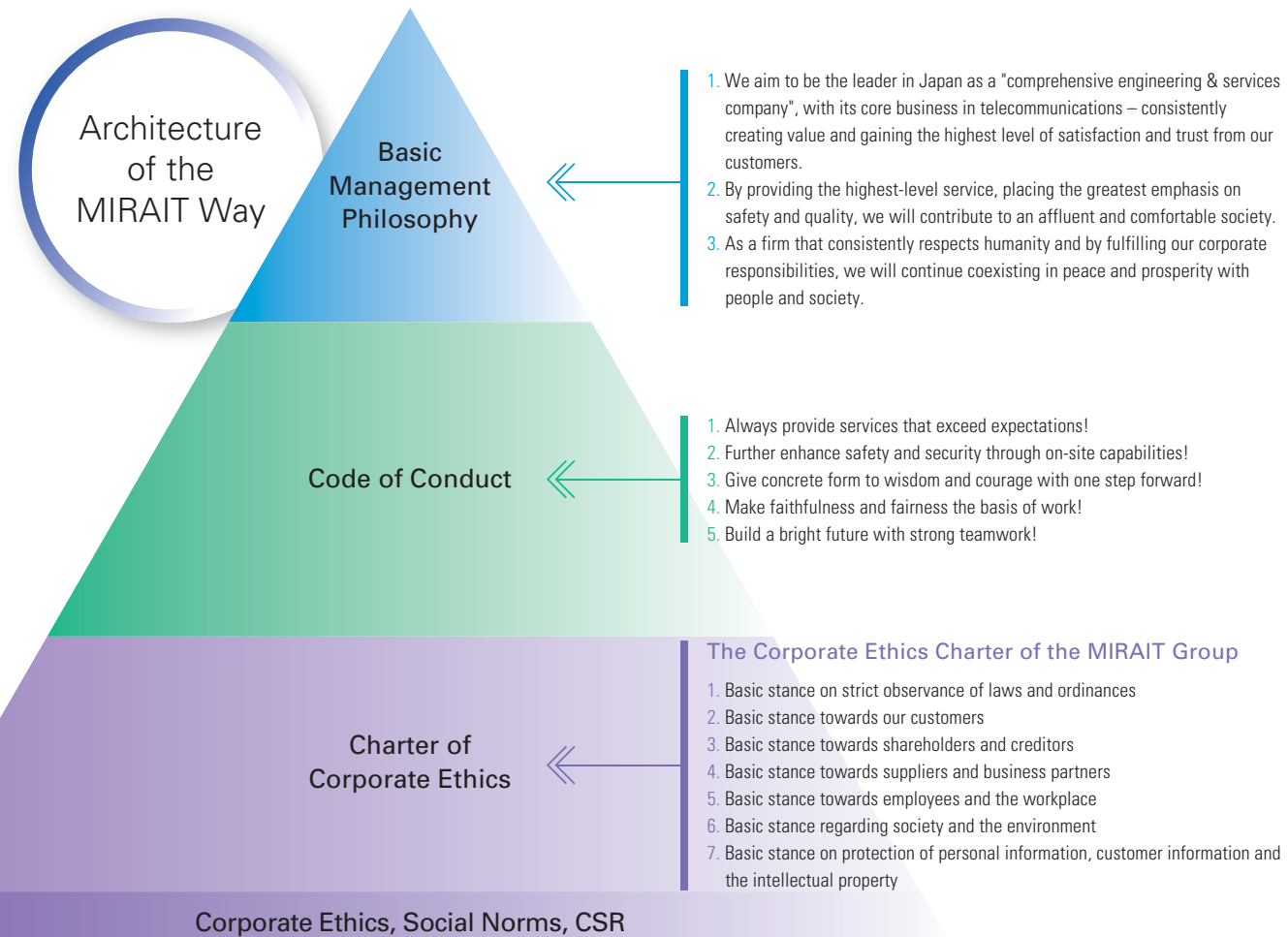
CSR activities of the MIRAIT Group turn the MIRAIT Way into concrete actions.

## Basic approaches to CSR

The MIRAIT Group has three provisions that set out its basic approaches to CSR in order to promote coherent CSR activities.

### - Basic approaches to CSR

- 1 We will win long-term trust from stakeholders by continually engaging in business activities that respond to social demands and expectations.
- 2 We will become a firm able to cope with change by incorporating responsiveness to social and environmental issues into the core business.
- 3 We will develop a respected “brand” by contributing to the making of a sustainable society as a company.



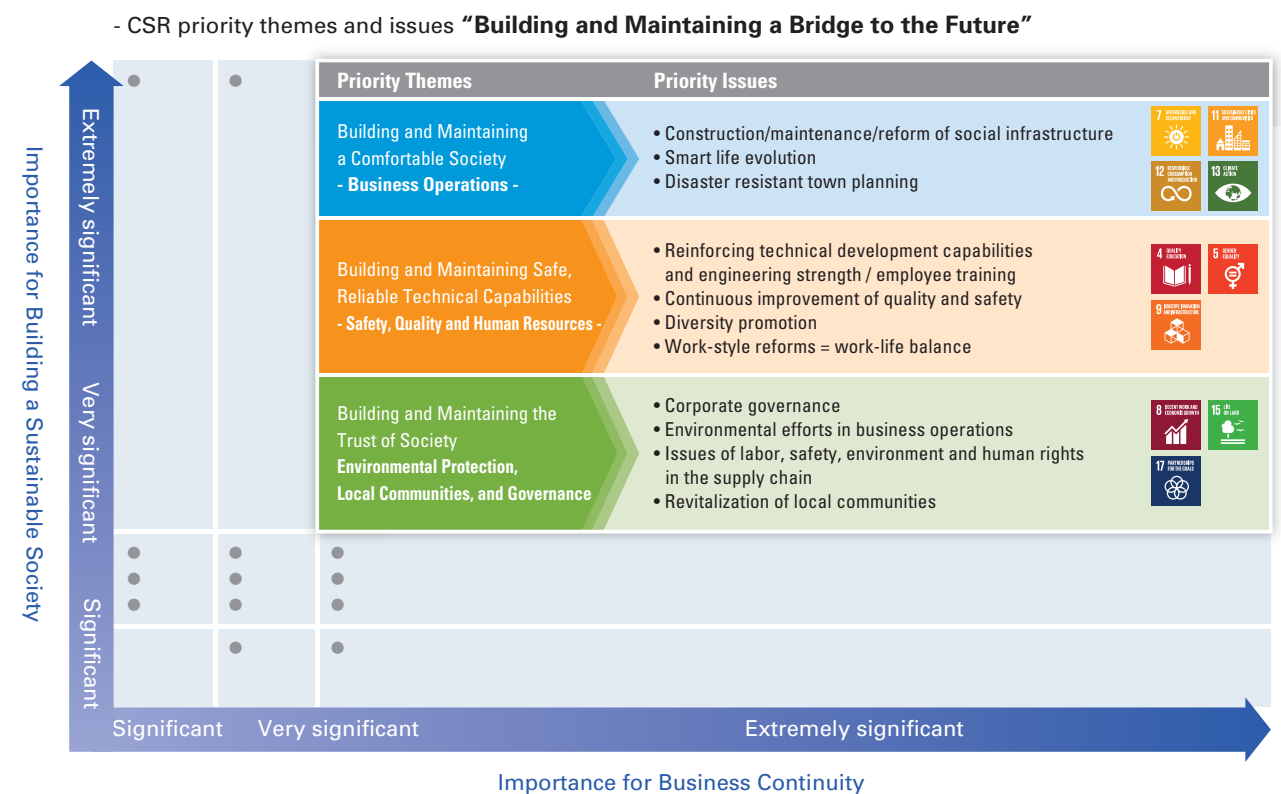
## CSR priority themes and issues

We reviewed our CSR priority themes and issues from medium-term perspectives while formulating the third MIRAIT Group Medium-term Management Plan (fiscal 2017 to 2020). As a result of the process of assessing our material issues, we have set “Building and Maintaining a Bridge to the Future” as our motto and decided to promote our activities for the three priority themes with high levels of both social interest and significance for the MIRAIT Group. We are in the process of examining concrete

indicators for each of these priority themes.

Such activities are discussed and decided on in meetings chaired by the President, with CSR Office of the MIRAIT Holdings Corporation as a secretariat.

As a comprehensive engineering and services company, we intend to contribute to the realization of a sustainable society as a member of that society by leveraging our strengths while working to solve various social issues.



## Operation of Integrated Management Systems

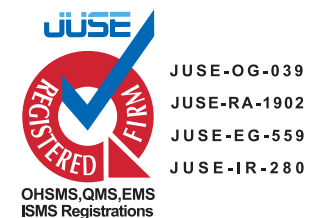
MIRAIT Group builds and operates management systems that further emphasize each of four regions – operator safety, work quality, environmental conservation and informational security – as a company which supports communications infrastructure. We also began operation of an Integrated Management System (MS) in 2012 to integrate and manage these four regions.

As the foundation of our integrated management system, the Management System Policy calls for awareness of CSR by every individual involved in MIRAIT Group businesses and requires mutual collaboration among companies and departments in the Group for PDCA management.

### Management System Policy

To achieve business operation policies and targets, an effective and efficient integrated management system has been formulated, and we will strive to operate, maintain and improve that system.

- All individuals involved in MIRAIT Group operations shall both be aware of the firm’s social responsibilities and strive to improve manners, morals, and compliance.
- All companies and departments of the MIRAIT Group shall, in mutual cooperation, promote effective management based on the Plan-Do-Check-Act (PDCA) cycle.
- All individuals involved in MIRAIT Group operations shall participate in appropriate education and training regarding this system to promote enhanced managerial strength.
- The effectiveness of this management system shall be subject to regular verification and continuous improvement with this basic policy in mind.





# Advancing Telecommunications Infrastructure

Telecommunications infrastructure is pursuing even greater reliability and superior functionality as an essential core technology for the evolution of smart living.

The MIRAIT Group supports the advancement of telecommunications environments as social infrastructure while anticipating tomorrow's needs as various items of daily life rely on the network connections and networks themselves that support all facets of business and lifestyles.

## Shifting to the Next Stage of Network Environments

Modern telecommunications infrastructure integrates the General Purpose Technology (GPT) that supports sustainable growth of the overall economy and plays a role as important as the internal combustion engine and electricity in the second industrial revolution. In particular, mobile communication systems advance every ten years. Today, the world expects a shift from the fourth generation (LTE-Advanced), which is the current mainstream mobile network, to the fifth generation by 2020.

The MIRAIT Group understands the evolution of these technologies when building telecommunications infrastructure that offers both high performance and high reliability. In Japan, carrier aggregation\*1, MIMO\*2 and other techniques are furthering the advancement of mobile communication systems and the expansion of the frequency band. We also took on improvement works for dead

bands in such locations as railways, buildings and sports stadiums. We conducted construction for standard households in East Japan as a reception measure for terrestrial digital television through a mobile communication network which uses the 700 MHz band (approx. 450,000 households between March 2014 to 2018). In addition, we are participating as an open partner in a 5G trial for implementation after 2020. Overseas, we are currently building the backbone lines for mobile communications in Myanmar.

We have striven even in preparing Wi-Fi environments greatly desired by society with focus on subways and convenience stores as well as education and other public facilities. Public spaces and especially athletic venues demand the expansion of Wi-Fi environments for the Tokyo Olympics and Paralympics. Our Group provides Stadium Wi-Fi as a solution to responds to these needs. Installations

that shrink the area covered by each individual wireless access point and shorten the interval between these access points realize a pleasant Internet experience even in places where a large number of users are accessing these points at the same time. These installations have been adopted by various large-scale baseball and other sporting arenas in a variety of places.

Some of these cases even support service operations to facilitate the

provision of content such as live replay footage, video of the emotions and movements of the athletes which cannot be seen from the stands, and data about sports achievements in-real time while spectators watch the action unfold right before their eyes.

\*1 Carrier aggregation: Technology to combine and handle singles of multiple frequency bands.

\*2 MIMO: Multiple-Input and Multiple-Output technology to install multiple transmission and receiving antennas to segment and send data simultaneously.

## Broadening the Potential of Networks via IoT Technology

The wave of Internet of Things (IoT) in all things connecting to the Internet around the world is increasing its momentum every year. The number of things (IoT devices) connected to the Internet that was 15.7 billion devices in 2015 is forecast to jump to roughly 30 million devices by 2020, and it is expected to become the catalyst of innovation toward solutions to a wide range of social issues.

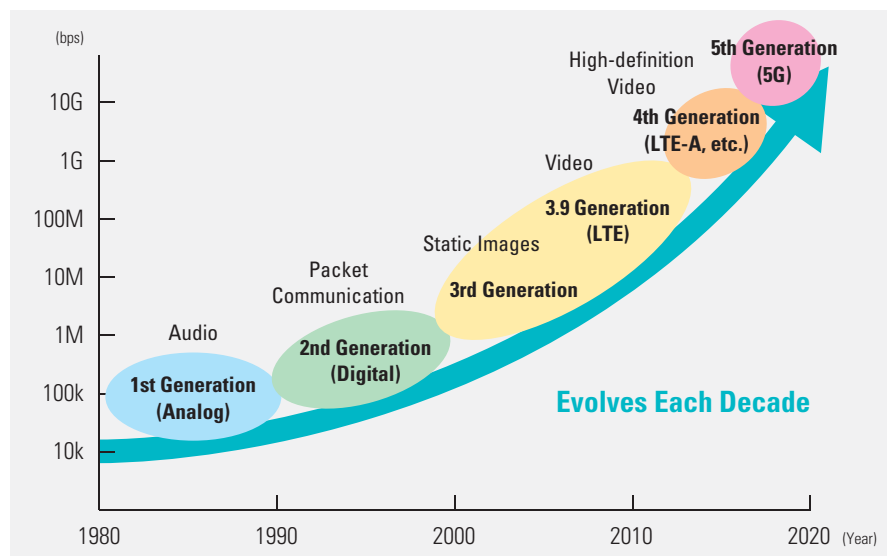
Influenced by the growing need for IoT use, the needs for low power consumption communication technology are increasing to realize efficiency and lower costs for data communication between a massive number of devices while covering a wide area. The MIRAIT Group conducts proof-of-concept testing of solutions to understand targets such as the usage status of equipment and devices, the progression of aging, and the position of moving bodies with

emphasis on LPWA\*3 to validate the usefulness.

As drones quickly becoming mainstream, the use of these aircrafts as IoT devices equipped with sensors can be adopted in a vast range of applications. The MIRAIT Technologies Corporation considers drones a moving sensor and provides solutions in fields from construction and measurement to agriculture, equipment inspections, disaster recovery and even tourism. Especially in construction and measurement fields, the MIRAIT Technologies Corporation is supporting every aspect of progress management system operation for civil engineering construction sites that utilize drones through a partnership with Komatsu Ltd., which is a major construction and mining equipment company.

\*3 Low Power, Wide Area (LPWA): Technology to realize low power, long distance communication.

## Changes in Mobile Communication Systems



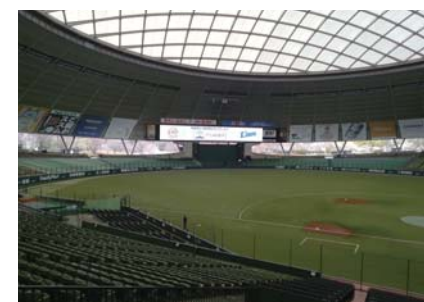
Source: Created internally based on information published by the Ministry of Internal Affairs and Communications



Construction of Wireless Base Stations



Construction of Dead Band Improvements Between Subway Stations



Baseball Stadium Equipped with Stadium Wi-Fi

Solution	Overview
Smart energy systems	Remote monitoring and metering of the energy use for a wide area of households
Smart water metering	Remote monitoring and metering of the water use of lifestyles and industry
Monitoring of parking lots	Remote monitoring of available spaces in parking lots
Monitoring deterioration of solar panels	Remote monitoring of aging of solar panels that have been installed
Monitoring of railway facilities	Acceleration and labor saving in the monitoring and inspection of the bearings for railway viaducts
Monitoring of moving bodies	Understanding of the position and transient speed of multiple people at events or during a disaster

## Automating Meter Reading via Smart Water Metering and LPWA

Water utility businesses of local municipalities face further deterioration of equipment and the aging of staff. Municipalities are pursuing efficient operations and the succession of technology while sustaining a stable water supply. As one way to solve this problem, the MIRAIT Technologies Corporation has been conducting field studies toward the practical application of smart water metering and automated metering that uses LPWA (common households first before industrial applications) with the cooperation of NTT West and the Kobe City Waterworks Bureau since 2015. We provide experimental test stations as well as take charge of the construction, operation and maintenance of wireless devices while keeping in mind support of the entire administrative sector in an effort to solidify technical expertise.



Smart Industrial Water Metering



# Reinforcing Telecommunications Infrastructure Against Disasters

The telecommunications infrastructure is like a nervous system of modern society. In the event of a prolonged outage due to an accident or disaster, the impact is tremendous whether severely limiting or even halting the workings of society.

The MIRAIT Group pushes forward preparations for strong infrastructure against natural disasters in addition to working to ensure readiness even in worst case scenarios.

## Building Telecommunications Infrastructure Able to Endure Natural Disasters

Japan is a country with many natural disasters. A telecommunications network functioning normally is essential for the daily life of citizens and industrial economic activities. This is why nations, municipalities and relevant business proprietors always work painstakingly to put in place measures against disasters. The MIRAIT Group has also been consistently striving to build and operate telecommunications infrastructure able to stand up against floods, earthquakes and other natural disasters from the standpoint of an enterprise involved in engineering.

Undergrounding of utilities in major cities throughout Japan can be raised as one new initiative in recent years. Burying electrical cables prevents utility poles from

toppling in earthquakes or typhoons and can reinforce urban disaster prevention functions. The Ministry of Land, Infrastructure, Transport and Tourism is underway undergrounding utilities across 1,400 km in districts with a high necessity in a three-year project that began in fiscal 2018. Tokyo is rapidly undergrounding all of its utilities in the center and core areas of the metropolis with a target of 2020, and the area which should underground these utilities over the next ten years also continues to expand.

MIRAIT Group has worked on many electric cable multipurpose underground projects, mostly in cities to eliminate utility poles. We lay the cables underground by digging routes as ducts to accommodate electrical cables while

using actuation of water, sewage, and gas lines and gaining the understanding of everyone in the area. The construction in Ponto-cho, Kyoto that was scheduled for completion in fiscal 2018 utilized compact cranes and manpower with work conducted primary at night because of the narrow sidewalks and heavy tourist foot traffic of the sightseeing area.



Construction Work to Lay Underground Cables (Electric Cable Multipurpose Underground Duct)

## Minimizing the Impact of Disasters and Accidents

When a disaster or accident strikes, the MIRAIT Group undertakes the task of safeguarding the communications network environment for rapid recovery.

We conduct disaster prevention training that cooperates with telecommunication carriers as a vital initiative to prepare for emergencies. In March 2018, the Chiba Branch Office of the MIRAIT Corporation participated in the NTT Chiba Branch Comprehensive Group Disaster Prevention Training held together with our Group company Todentsu Access on the NTT Ichihara Building premises. The training assumed a large-scale disaster, such as an earthquake that strikes, to train the proper and rapid establishment of communications and emergency repair operations in disaster-afflicted areas. Nine organizations of the NTT Group, including their telecommunications and

construction companies, participated. The MIRAIT Chiba Group took part in communications cable recovery drills, which worked to repair fallen utility poles and re-establish the connection of cut communication cables.

On the day of the disaster prevention training held September 1, 2017, training for Business Continuity Plans (BCP) was held at the MIRAIT Corporation for the purpose of rapidly launching an emergency response headquarters when a disaster strikes and confirming informational links from informational gather to the headquarters. The drill started by assuming an earthquake with a magnitude of 7.3 (upper 6) struck with an epicenter in the north of Tokyo Bay at 1:00 p.m., causing a power outage at the head office in Toyosu. The disaster report headquarters that was



BCP Training at MIRAIT Corporation

set up in the seventh floor conference room of the head office building verified the situation, including damage of stockpiles to use at each site in an emergency. We also established collaboration between each branch and site. This included the West Japan Branch conducting the initial safety confirmation instead of the head office where the power was out. We evaluate and find solutions internally to the challenges identified in the training, and then revise the BCP manuals for the future and reflect those revisions in subsequent drills.

## PROJECT REPORT



# Securing Reception of 700 MHz Band Televisions

Ministry of Internal Affairs and Communications is reallocating frequencies to the 700 MHz band in response to circumstances such as the growing communication traffic due to the rapid increase of smartphone users and total migration to terrestrial digital television broadcasts. These new frequencies were allocated to mobile carriers and the transition of the frequencies of existing systems that use this frequency band is underway.

The 700 MHz band is in the proximity of the frequency band used for terrestrial digital television. This results in the potential for interference, such as distorted television images, in buildings and private houses using old types of television boosters (terrestrial analog televisions) due to the amplification of frequencies for mobile phones.

Mobile phone companies founded the Association of 700MHz Frequency Promotion to address the signal interference to push forward measures for television receivers in private homes and buildings near 700 MHz band mobile phone base stations. The 700MHz Frequency Promotion Division in the Mobile Communications Business Headquarters of the MIRAIT Corporation is in charge of the construction for these measures.

This division handles the on-site surveys of housing and buildings near mobile telephone base stations throughout Japan, negotiates

construction, and installs and replaces equipment. MIRAIT is in charge of Hokkaido, Tohoku, Hokuriku, and the Tokai region.

This construction not only includes public facilities but also the homes of local residents. Therefore, scheduling work with those residents before construction begins and ensuring each person understands the necessity of the construction for these measures is vital. The project engages in direct communication to avoid excess attention and makes request to conduct work through mediums such as flyers and resident briefings in order to prevent any fraud from occurring in the construction. We work to ensure time between jobs to schedule construction with residence and gain understanding of the necessity of construction for these measures. We are always careful to be polite in the hope of smooth communication with all of the residents.

While ensuring understanding of all of the residence in the neighborhoods in this way, six worksite supervisors have worked closely with on-site staff to complete many construction projects in a system that consistently operates

100 to 150 crews. We have conducted construction on approximately 450,000 sites between April 2014 and the end of March 2018. In the future, I hope we will continue to aim to be a construction company close to the region which earns trust from our customers.



Hokkaido Branch, MIRAIT Corporation Comprehensive Engineering Department

**Hiroshi Ohata**

### Project Outline

- Construction name  
Works for 700 MHz Band Television Reception
- Territory  
Hokkaido, Tohoku, Hokuriku, and Tokai
- Client (Contracting Party)  
Telecom Engineering CO.,LTD.
- Completed Construction  
450,000 sites  
(April 2014 to the end of March 2018)



## Helping Resolve Societal Challenges

The world is already on its way toward a decarbonized society to minimize the effects of climate change. To realize a common worldwide vision, we must build next-generation energy infrastructure that encourages the popularization and use of renewable energy and electric vehicles. The MIRAIT Group has given specific shape to next-generation energy infrastructure and plays a role in its operation as a comprehensive engineering and services company.

### Fully Supporting All Solar Power Generation Systems

The Paris Agreement adopted at the 21st United Nations Climate Change Conference (COP21) in December 2015 aims to balance anthropogenic greenhouse gas emissions and absorption in the second half of this century to limit the average rise in temperatures worldwide to well below two degrees Celsius. With this objective in the backdrop, many initiatives to increase the ratio of renewable energy and decrease the prevalence of fossil fuels are being driven forward both in Japan and overseas along with wide-ranging efforts to save energy. The MIRAIT Group strives to build and operate the next-generation energy infrastructure that supports this new mix

of energy.

We are a full service provider of solar power energy generation systems undertaking proposals for installation, construction and maintenance of a wide range of facilities from household energy storage systems to mega-solar power plants. MIRAIT Technologies Corporation conducts operations and maintenance (O&M) services at 12 solar power generation plants in Japan consisting mainly of mega solar plants\*<sup>1</sup> which are extra high-voltage systems, and inspects high-voltage power generation systems at approximately 70 locations.

Furthermore, we began providing O&M services for low-pressure solar power generation systems\*<sup>2</sup> due to

amendments to the Feed-In-Tariff (FIT) law enacted in April 2017 which require the maintenance of low-pressure power generation systems with a power output of 10kW to 50kW or less. We have appointed chief engineers to provide core services from remote monitoring to on-site dispatching for checks and periodic inspections as well as emergency response maintenance. These engineers also remove weeds, clean panels and undertake other tasks necessary to maximize the power generation efficiency.

\*1 Mega-solar power plant: Power plant that generates a power output of 1 MW or more

\*2 Low-pressure solar power generation system: Power generation systems with a voltage of 600 V or less on power utility lines and a power output of 50 kW or less

### Building Recharging Infrastructure Indispensable for popularizing Electric Vehicles

The Japanese government is aiming for the sales of new vehicles to be made up of 50% to 70% of next-generation vehicles\*<sup>3</sup> by 2030 to strengthen the competitiveness of the automotive industry and reduce CO<sub>2</sub> emissions in the transportation field. More specifically, the targets aim to achieve a maximum of one-million registered vehicles which are either electric vehicles (EV) or plug-in hybrid vehicles by 2020.

One element required to popularize EV is increasing infrastructure of charging stations. Japan currently has over 7,000 charging stations. This includes the roughly 400 charging stations installed through business subsidies for service areas (SA) along the highway and parking areas (PA), which must be transitioned to charging facilities to enable long-distance travel. The initial charging equipment that was installed (around 2010) is approaching a

time that requires maintenance of the corrosion and deterioration cause by rust. However, the replacement of the main charging unit is costly. Even if only the exterior is repaired, work areas have to ensure safety and speed in places generally filled with vehicles and visitors.

To resolve these issues, the MIRAIT Corporation has proposed a simple technique for repairs through wrapping sheets (refinement work) to the Japan Charge Network, which is involved in the installation, operation and maintenance of rapid charging stations throughout Japan. In fiscal 2016, we repaired one existing charging station in a rest area as a trial for an expressway. As a result of proving the effectiveness, we were contracted to repair an additional ten sites in fiscal 2017, which was completed in March 2018. In addition to these repairs, we are

also accelerating preparations for an environment with EV charging stations in Japan that includes further installation of charging equipment at luxury resorts and other facilities in many areas of Japan.

\*3 Hybrid vehicles, electric vehicles, plug-in hybrid vehicles, fuel-cell vehicles, green diesel vehicles, CNG vehicles, etc.



Repair of a rapid EV charging station with visible age degradation and rust using a lapping sheet

## Supporting the Revitalization of Communities

ICT can also play a part in revitalizing communities suffering from a declining population. The MIRAIT Group not only builds infrastructure for ICT to be used in rural areas but also develops and provides solutions that help attractiveness of the communities to be communicated and enjoyed more fully.

### Supporting Local Tourism

Rural areas face the common challenge of a shrinking economy as the population migrates to urban areas. An approach to revitalize communities concerned about a population decline is to increase tourists and other visitors to the region. One promising measure that has come into view is the active use of ICT. In fact, data published from surveys conducted by the Ministry of Internal Affairs and Communications show an increase in tourists from abroad visiting local municipalities that are engaged in inbound tourist promotion campaigns that use ICT (installation of wireless LANs, multilingual municipal websites, informational dissemination via SNS, etc.).

The MIRAIT Group delivers solutions that satisfy specific community needs in addition to supporting the use of ICT in each region by building telecommunication infrastructure.

The "PONTANA" digital information stand is a system to distribute digital pamphlets. Users can download informational content that they are interested in from a bookshelf-style screen to always carry with them. The 2016 Ise-Shima Summit generated multilingual appeal for Mie Prefecture by installing an international media center (IMC) annex of the Mie information

building. Recently, PONTANA has also been providing event exclusive media, such as images and wallpapers at the Book House Cafe's Children's Book Discovery project (Jimbocho, Tokyo) and the SNOWMIKU 2018 (Sapporo City, Hokkaido) This digital information stand also provides sightseeing information to help tourists walk the town at the Industrial Tourism Plaza Sumidamachi Toko inside of Tokyo Solamachi.

In addition, we are working to develop applications to help people enjoy the tourist spots. Active Communication Technology & Information System (ACTIS), a MIRAIT Group company, took part in the information system run by the Kushiro City Zoo (Kushiro, Hokkaido). ACTIS developed the Kushiro Zoo Navi navigation software together with the Kushiro Industrial Technology Center and the National Institute of Technology, Kushiro College. Users can tap on icons such as animal exhibits or restrooms displayed in Google Maps to receive guidance with a route from their currently location. This application can also display an illustrated encyclopedia of animals that currently provides information in English and Japanese. We plan to update future versions with multilingual support as well as develop a guidance system that uses the Pepper humanoid robot.

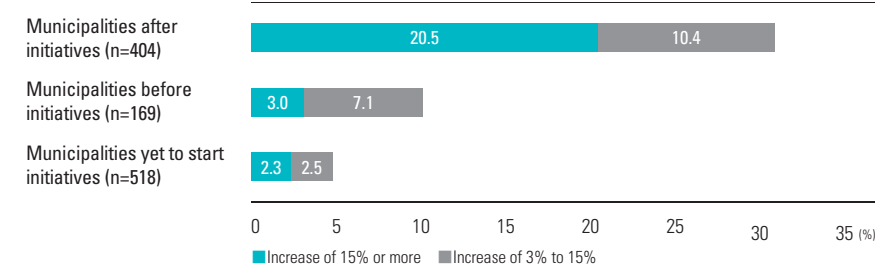


Kushiro City Zoo Navigation System: Kushiro Zoo Navi

### Supporting Urban Development Using ICT

Cases that use ICT as a means for urban development have also been growing. Aiming to restore the Tsuchiyu Hot Spring in Fukushima prefecture devastated by harmful rumors due to the nuclear accident after the Great East Japan Earthquake, Genki Up Tsuchiyu Co., Ltd. constructed a renewable energy facility that uses the local resources of hot springs and rivers (hot spring binary power station and small hydraulic power plant) and has been vitalizing the region through the income earned from power sales. In October 2016, the MIRAIT Corporation Tohoku Branch Office and Solution Business Unit were in charge of the work to install remote monitoring cameras that use mobile lines at those power stations. The remote monitoring cameras grasp the status of the power stations to compare and confirm power generation data and help heighten the efficiency. The MIRAIT Corporation is supporting the restoration of the Tsuchiyu Hot Spring via ICT Technology.

### Relationship between Municipal Initiatives and the Number of Tourists Visiting from Abroad



Source: Study on the current state of Regional ICT use by the Ministry of Internal Affairs and Communications (2017)

# Accelerating Work-style Reforms through ICT Solutions

Companies must flexibly respond to employee needs while improving operational productivity with the government leading work-style reforms as a solution to a reduction in production capacity due to an aging society with a low birthrate.

The MIRAIT Group provides ICT solutions that become the infrastructure to realize diverse work styles and secure telecommuting in addition to encouraging work-style reforms.

## Supporting Diverse Work Styles Through the Power of ICT

More people participating in the workforce are needed to adapt to the population decline. Japan has a high employment rate of the elderly even when seen on a global scale. However, the employment rate of women is lower than that of European countries, especially for women 30 to 34 years old, and this gap has not improved.

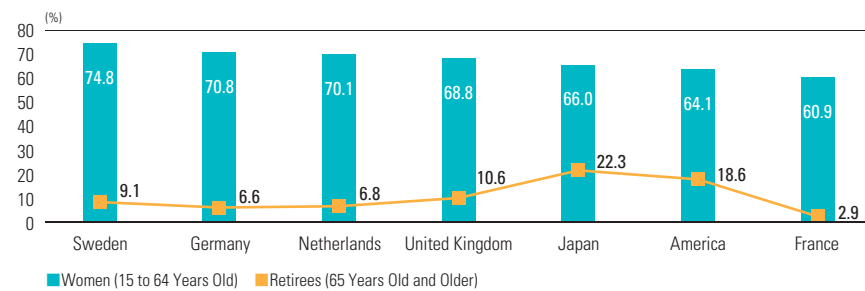
To increase this employment rate with focus on a generation raising children, we need to provide a different kind of working environment from those in the past where continuing to work after having children has been difficult. ICT will become an effective measure in supporting diverse work styles.

The MIRAIT Corporation provides Casting Table 3.0 to contact centers for

the analysis of the work status of their operators as a workforce management system enabling proficient scheduling and efficient operations. The system supports both greater Customer Satisfaction (CSM)

and diverse work styles by allowing the preparation of shift schedules tailored to individual lifestyles according to the desired work hours and days submitted by operators.

Employment Rate of Women (15-64 Years Old) and Retirees (65 Years Old or Older)



\*As of 2016; Values do not include 15-year old women for America and the United Kingdom. Source: "ILOSTAT" published by the International Labour Organization (ILO)

## Realizing Telecommuting Through Secure Environments

Telecommuting from mobile work and work from home programs are gaining even more attention as a way to support a balance between work and raising children as well as caring for family while also acting as a key solution to improving productivity. These new work styles enable people to work regardless of time or place but also come with informational security concerns. As numerous small- to medium-size organizations struggle to appoint dedicated system administrators, partners and other clients require more advanced information security measures and enhanced IT.

MIRAIT X used its wealth of experience and expertise in IT support service operations together with the integrated private cloud network built on superior server configuration technologies

provided by Fieltrust Corporation to develop the IT Marugoto (wholesome) Cloud service.

In addition to solving challenges that require expertise from system settings related to IT, especially computers, failure recovery and security measures and IT resource management to national identification number management, this cloud service provides total support that includes operational support for software such as Microsoft Office and consultations about concerns related to IT devices. Users can also use a secure Windows environment through a remote desktop from a terminal, such as their computer, smartphone, or tablet, safely from anywhere. As a result, this service can ensure information security and work-style reforms while reducing costs.



## PROJECT REPORT



# Expanding Potentials of Drones through Pilot Training and Piloting Services

MIRAIT Technologies Corporation is focusing on the great potential of drones, which have recently grown in popularity in an effort to create drone-related services.

One of these services is our drone piloting service. This service operates drones for other companies who are expanding their drone services. We take advantage of the MIRAIT Group's Japan-wide communications construction network to realize an operation system for drone services at a nationwide scale.

Another is our drone pilot training service. The use of drones is expanding into a wide range of fields from disaster relief to deliveries in social contribution activities while emphasizing civil surveying, aerial photography, pesticide spraying, equipment inspection and examination fields as a business. We started the pilot training service in a business climate that is sure to lack the pilots necessary to support these fields. MIRAIT Technologies Corporation has been included as a member of the training association for unmanned drones on the Ministry of Land Infrastructure, Transport and Tourism Civil Aviation Bureau homepage since March 2018.

We opened drone training schools in Kobe, Hyogo and Kumagaya, Saitama and conduct training in-line with the certification course of the Japan UAS Industrial Development Association (JUIDA). These schools offer

multiple curriculums from elementary courses to advanced courses to teach the technology and know-how able to handle various operations in addition to conducting JUIDA drone pilot certification training.

The drone schools that opened last fall have had 130 students from the general public in addition to training 200 Group employees up until now to help them spread their wings as future drone pilots. We will grow this success and aim to cultivate 300 drone pilots internally as our target for fiscal 2018.

Our piloting service on the other hand provides various services and operational support of those services such as 3D Status Survey System for civil engineering worksites, Crop Growth Survey System for the agricultural field and drone rentals for industrial machine rental companies. I hope we can become the proven leading-experts in the drone field.

This has also been called an aerial industrial revolution in which the greater availability of drones has been marvelous not only as a hobby but also as efforts from business to disaster relief. MIRAIT Technologies is broadening the field of view for drones in measurement, inspection and aerial photography as three core fields in addition to providing systems for piloting services and pilot training and aims to further social contributions through the use of drones.



MIRAIT Technologies Corporation NTT Business Headquarters Drone Service Division

Chizuka Sugiyama

### Service Overview

-Drone Pilot Training Service  
Courses: JUIDA certification course, advanced course, aerial photography course, and civil photography surveying course

School locations: Kobe, Hyogo and Kumagaya, Saitama

-Wide Area Drone Piloting Service  
Services: Drone piloting, supply of devices, maintenance, etc.  
Service area: All of Japan



# Pursuing Quality

We endeavor to satisfy customer expectations and trust with high-quality service and solutions by devising mechanisms, developing people who run them, and creating an environment where people can exert their strength.

## Quality Management

The MIRAIT Group has configured and operates a quality management system certified under the ISO 9001, which is an important element of the integrated management system (see p.10). The foundation of our Policy on Quality\*1 is composed of three pillars — enhancing rapid response to legal regulations and the quality of products and services, heightening customer satisfaction by improving the quality of construction (including the realization of efficient production and services), and reducing risks to quality. Furthermore, through internal regulations, we have clarified specific processes, procedures, and criterion. We have also clarified the quality standards even in our purchasing which should be followed not only internally but also by our partner companies.

The MIRAIT Corporation regularly confirms and verifies the quality in each

and every process. We are also pursuing more accurate and efficient verification processes by using technology such as mobile terminals.

Annually, each company sets targets (for the number of facility accidents, the number of inspection issues indicated, score for customer satisfaction, etc.) depending on the type of operation. The level of achievement is then reviewed for efforts continuing into subsequent years.

\*1 The full text for the Policy on Quality is available at our website.

### Sharing an Awareness Toward Safety Training for a Renewed Awareness Toward Safety

A training course for a renewed awareness toward safety is offered to the employees at construction sites who are charged with safety leadership and safety management (an appointed safety supervisor, site agent,

or other). The training helps to enhance safety management capabilities through classes and practice in safety patrol points, examination of example accidents and much more. 16 people participated in these classes in 2017.

### Authorization of workers for high elevation work safety

So that an engineer is able to work at high elevations safely and securely, a "high elevation security worker authorization" (access system) and "high elevation security worker authorization" (network system) has been implemented.

Access system	Network system
3,302	302
individuals	individuals
Number of candidates for authorization of workers for high elevation work safety (fiscal 2017)	

## Improving Technical Strength and Workplace Power

The MIRAIT Group implements training and technical certifications to steadily improve the technical strengths that support service quality.

### Strengthening Construction Management Capabilities

To strengthen management by the worksite supervisor \* – the core human resource of business operations – "Worksite Supervisor Training" is given to newly appointed worksite supervisors and deputy worksite supervisors.

In recent years, with the increase in the number of construction sites and with the diversification and increased complexity of construction works, worksite supervisors who are in charge of construction works are expected to have capabilities of dealing with a wide range of tasks and situations. The "Worksite Supervisor Handbook" that is a culmination of the MIRAIT Group's experience and know-how is used during this training. In addition to learning the basic elements of construction

management such as preparing a budget and cost management, through the introduction of discussion and role-playing, knowledge is gained organically. It is an approach that enhances problem-solving capabilities.

### Educating Specialized Technicians

Lectures are being held at the Expert College for the education of specialized technicians, with various types of training offered. In 2017, a 9-month Access Systems Basic Technology course for newly hired employees and a 19-day Metallic Cable Connection training course were offered. The purpose of this training is to learn basic access systems technology and skills together with safe construction abilities. An additional aim is for the acquisition of various types of certification such as information wiring installation and licensed electrician.

\*2 Worksite supervisor is a supervisory position appointed to consolidate work at each of the MIRAIT Group's construction sites.

## Building Quality Management Infrastructure (Australia)

MIRAIT Technologies Australia has been contracted by a major telecommunications firm to update 50,000 outdoor systems over three-years in a project that began in 2017. We created a database for the construction knowledge of our 120 contractors that we are working with as partners to standardize the work processes and ensure quality and efficiency while updating the outdoor systems located in the four eastern states (New South Wales, Victoria, Queensland, and Tasmania) vastly larger than Japan. MIRAIT Technologies Australia developed its own unique databases and IT tools to centralize remote monitoring of the work to update these systems over such a broad area.



## Collaborating with Business Partners

The MIRAIT Group works closely with its business partners well aware that this is essential to maintaining service quality.

First, through an evaluation and selection process based on the Purchasing Management Regulations, we clearly share basic requirements, such as standards related to product and service quality as well as supply capabilities.

To deepen mutual understanding and

communication, and with the purpose of contributing to healthy management, cooperation meetings are held with members of approximately 200 affiliated companies. The MIRAIT Group shares information on the cooperation meeting website in addition to holding headquarters activities and three safety, technical training and management information groups.

Additionally, to deepen the interaction

with affiliated companies that have regional branches, we have divided the country into nine areas, holding regular meetings of the regional cooperation meeting to exchange information about business project development and other topics. In fiscal 2017, we pushed forward mutual recognition regarding future business development among the 497 companies that participated.

## Overall Improvement in Operation Quality

The MIRAIT Group believes that the key to steadily improving service quality is to raise standards of overall operation quality consistently.

Diligently turning our attention to points noticed and opinions held by on-site workers (both group employees and affiliated company workers), we promote the KAIZEN Suggestion Activity to improve efficiency and the quality of duties. Furthermore, we gather team members from group companies' worksites and hold regular MIRAIT Group KAIZEN meetings to introduce activity results, bringing reciprocal improvement. In 2017, 15 teams (the

same as the previous fiscal year) gave presentations sharing the results of their own unique innovative ideas. Three years have also passed since the KAIZEN Fellow efforts which have spread widely as the KAIZEN Suggestion Activity in each office. The atmosphere through the organization has become more positive.



Commemoration Ceremony at the KAIZEN Meeting

Approx. **16,794**

KAIZEN suggestions (results of fiscal 2017)  
\*14,727 suggestions in fiscal 2016

## Conducting All Construction with Least Burden on Our Customers

We take on all of our construction tailored to the requirements of our customers from telecommunications and electrical work to civil engineering work. This includes things like each telephone line and the attractions at one of the main theme parks in Osaka, Japan.

I enjoy that every single job is different and offers its own challenge. Most of this work does not have any clear specifications. That means I need to approach the tasks in front of myself every day while fully confirming the plan in detail with the people in charge of the affiliated companies. Almost all of the works at theme parks are done while they are closed at night.

On-site, I am always confronted by new challenges. I focus on how to safely and smoothly complete the tasks without any rework most of all. That is why I of course make suggestions about the work, conduct on-site confirmations to ensure no issues related to the construction in addition to adjusting things with the customer and other internal departments. As a worksite supervisor, I am always keeping in mind ways to put least burden on our customers and hope to build a track record that will earn even greater trust.



**Yohei Sakae**

Engineering Division,  
West Japan Business Division  
MIRAIT Corporation

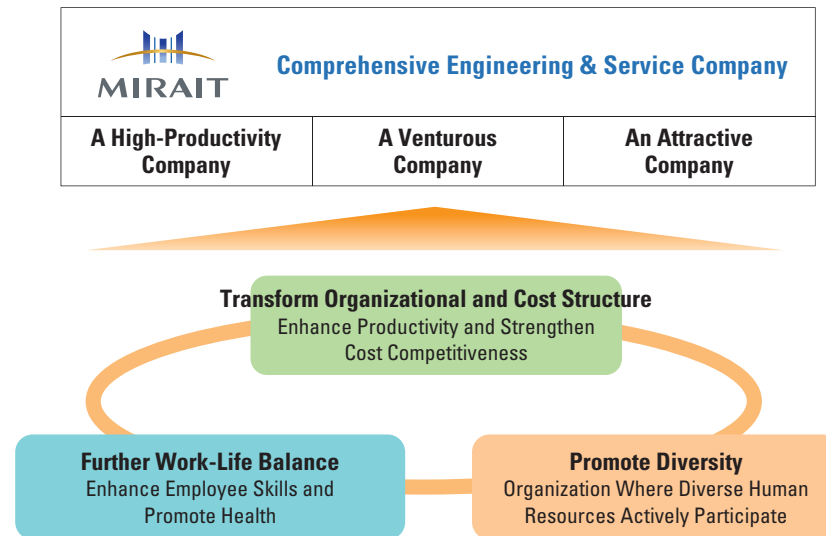
# Work-style Reforms

The MIRAIT Group aims to become an attractive and worthwhile enterprise to work where each and every employee can find their own motivation and reach their full potential. We also maximize the organizational capabilities of the team while providing an invigorating workplace for both the body and mind in which everyone can see themselves grow.

## Advancing Efforts Towards Work-style Reforms

The MIRAIT Group announced the Work-style Reform Declaration by the President to reform work-styles throughout the Group to cultivate sustainable growth as a comprehensive engineering and services company that responds to future changes in labor and business environments.

We will push forward effective work-style reforms through consistent and unified reforms around three axes: (1) realization of diverse and alternative work styles, (2) optimization of overtime work and promotion for employees to take leave, and (3) effective empowerment of diverse human resources through flexible work styles.



## Initiatives

### Realizing Diverse and Alternative Work Styles

The MIRAIT Group promotes the active participation of human resources by effectively responding to the Revised Labor Contract Act, the Revised Part-time Employment Act and other regulatory reforms while revising necessary policies. We have also established a limited area employment policy to address work conditions with certain limitations, such as the inability for non-regular employees to transfer to other sites around the nation, and help these human resources transition to

regular employment.

### Optimizing Overtime Work and Promoting Employees to Take Leave

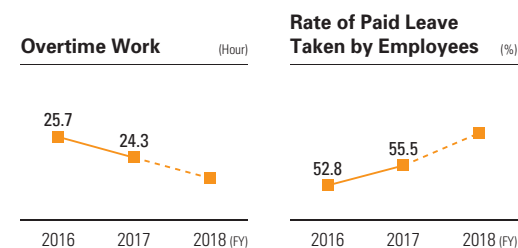
The MIRAIT Group aims to build a working environment that promotes work-life balance through better employee health by setting no-overtime days, encouraging employees to leave work on time, and promoting employees to take paid leave in conjunction with the spring and summer breaks as well as the end of year holiday seasons.

We are heightening efficiency in our operations by promoting KAIZEN

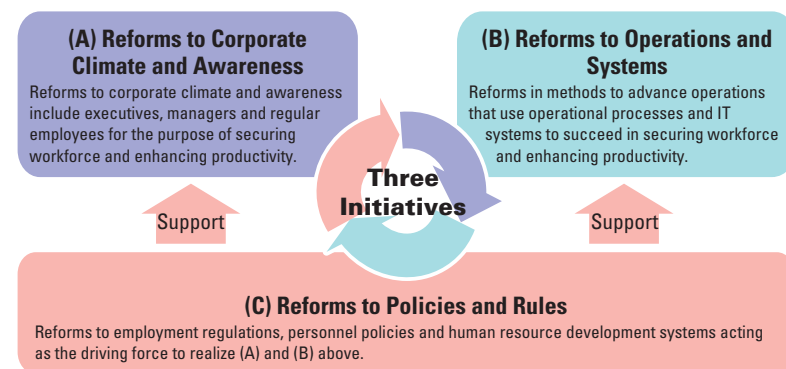
activities in each workplace as well as the use of ICT in addition to reducing total working hours by recording and understanding suitable working hours through a computer logging system.

### Empowering Diverse Human Resources Through Flexible Work Styles

The MIRAIT Group strives to transform policies and rules in a way that facilitates flexible work styles by offering programs for employees to use such as flextime, a modified shift system and telecommuting.



Monthly average overtime per employee  
\*Average for the MIRAIT Corporation and MIRAIT Technologies Corporation



# Diversity

Regardless of age, gender, nationality, existence or lack of handicap – placing importance on individuality – we encourage the building of a workplace that will manifest our employees' abilities to their maximum.

## Promoting the Active Participation of Female Employees

We are devising action plans and analyzing problems in each company so that female employees can reach their full potential and build their careers in various arenas. We have set and are working toward targets, such as increasing the ratio of women hired as new graduates as well as in managerial positions. We are also expanding the occupational fields for women. Moreover, we are working to build a working environment that supports a work-life balance.

### Support for Both a Career as well as Raising Children and Caring for Family

So that employees can continue working with a sense of security for a long time, parental leave (available until the child reaches three years of age) and reduced working hours system (available until the child finishes the third year of elementary school), plans are available corresponding to major life events such as childbirth, infant care or nursing that are well above levels stipulated by law. Since the MIRAIT Group inaugurated the plan in October 2012 until March 2018, the rate of maternity leave taken by women employees is 100%.

Furthermore, MIRAIT Technologies Corporation was awarded the "Kurumin" certification mark for companies that provide support to families raising children by the Minister of Health, Labor and Welfare.

### Acquisition of "Eruboshi" (Female Employees Promotion Law) Certification

"Eruboshi" is the nickname for the logo mark of a certification program of the Minister of Health, Labor, and Welfare in which companies formulating and reporting action plans to promote the roles of women in the workplace that are carried out outstandingly are authorized to use the mark. MIRAIT Technologies Corporation has cleared all five evaluation items (recruitment, employment continuity, work methods including working hours etc., ratio of managerial class employees, and variety of career courses) reaching certification level, thus receiving the highest of the three levels of certification.

### Recognized as a Leading Company with Actively Participating Women in Osaka City

The MIRAIT Technologies Corporation received the highest two star recognition as an excellent company for its level of effort in promoting the active participation of women by Osaka City in addition to receiving the Ikumen Award as a company supporting men to help raise their children.



### Promoting the Active Role of Local Personnel in Foreign Countries

Centering on Asia and the Pacific Region, the MIRAIT Group currently maintains branches in 14 countries and regions with locally hired personnel working in the regional offices. Through mutual support such as dispatch of personnel required between overseas bases, we seek an overall enhancement of the technical skills of local employees for growth so that each employee can demonstrate his full abilities.

MIRAIT Philippines Inc., conducts activities to deepen its connection with the local community and heighten trust, such as hosting a Christmas party with children who have disabilities.





# Human Resource Development

Supporting growth of each employee from a broad perspective means systematically reinforcing our human capital that will support us in the future.

## Personnel Training System

At the MIRAIT Group, we consider human resource development one of the most vital management priorities. We have established personnel training systems made up of "sectorial model systems" to enhance specialized professional capabilities by sector and "stratified model systems" with the mastery of knowledge required in common at each professional level (see diagram below). Supporting the progress of each employee, we are driving the reinforcement of our human resource foundation which, in turn, sustains our business operation.

Our human resource development system has been designed as a program

in which employees can learn skills and knowledge tailored to the role expected of them in each level of employment and stage of their career from training provided upon entering the company to education provided for executive management. We also offer particularly enhanced education and training systems so that new employees can actively participate regardless of whether from a science or humanities background. We also provide an interview program to encourage people to actively take on the challenge of acquiring various certifications by actualizing goals and career advancement through discussions with supervisors in addition to

establishing a bonus system according to difficulty that responds to the will of our employees.



New employee training

## Initiating Internship Program

Every August, we hold an internship program for students. The principal objective is giving professional-life assistance to the generation that will shoulder the burden of Japan's future. In the short-term internship of about one week, through work experiences such as observing telecommunications cable being connected and visits to construction sites, we are providing the students the opportunity to deepen their occupational awareness and realize their own aptitudes.



Students Listening Intently to an Explanation

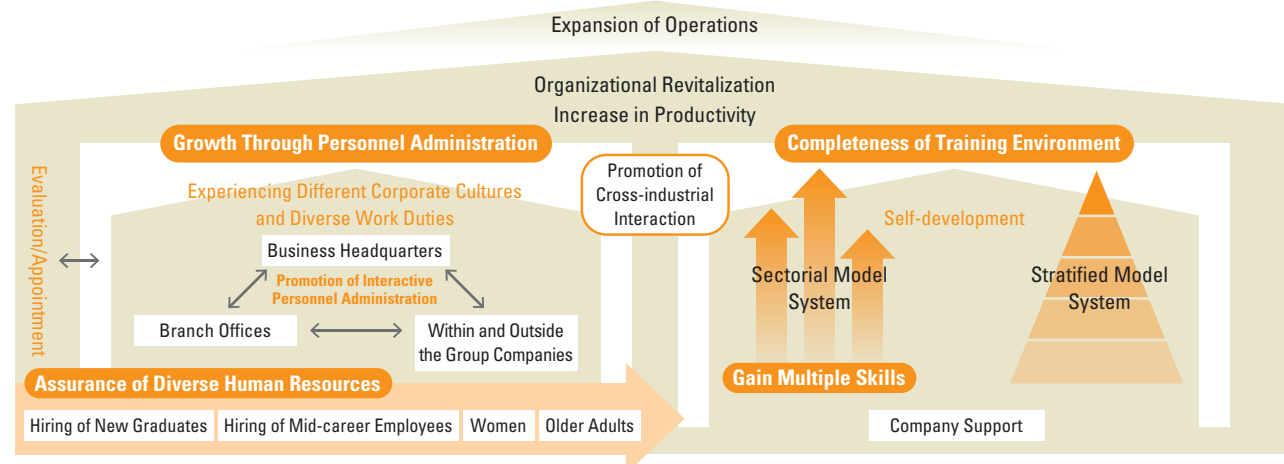
## Preparing the Training Environment

At training centers like the Ichikawa Training Center (Ichikawa City, Chiba Prefecture) and Kansai Hyper Techno Port (Kobe, Hyogo Prefecture), various equipment has been installed for

full-blown technical skill training and technological development of our engineers. From brand new employees to seasoned veterans, we are sharpening our technological capabilities and ability

to make proposals to meet our customers' and society's demands and to contribute to today's needs.

## Enhancing & Revitalizing the Human Resource Foundation to Support Expansion into New Business Domains and Operational Innovation



## Improving Technical Strength

We make every effort to improve the technical strength of every one of our employees to build high-quality and stable communication facilities and systems in addition to responding more quickly to the ever-changing requirements of society in order to bring satisfaction to customers.

### Technical and Skill Training

- Provides broad technical training for multiple skills

### Certification Acquisition Support

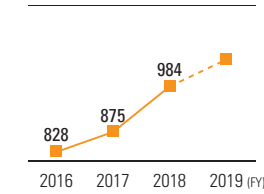
- Sets goals for each person to acquire certifications every year through interviews with a supervisor
- Provides incentives when acquiring certifications from a designated company

The MIRAIT Group encourages and supports the acquisition of certifications in a wide range of fields as proof of the technical strength of our employees.

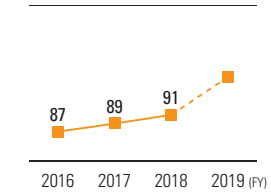
We actively work not only in the communications field but also in the training of drone pilots for the expansion of drone-related businesses in addition to

the electrical and ICT fields. Our drone education in particular has become a training association for skill certification and is included on the Ministry of Land, Infrastructure, Transport and Tourism homepage.

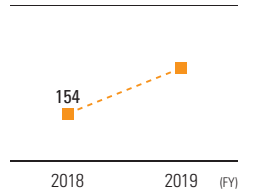
Electrical Workers (person)



Technical Radio Operators for On-the-ground Services (person)



Drone (JUIDA) (person)



\*Total for the MIRAIT Corporation and MIRAIT Technologies Corporation

## Training programs at overseas operations

The MIRAIT Group conducts various training programs for employees hired at their overseas branches. At MIRAIT Technologies Myanmar Co. Ltd., not only locally hired employees but those from local affiliated companies participate. Striving for technical skill enhancement, we hold lectures and practical workshops in large-scale training

sessions. MIRAIT Philippines Inc. has create human resource development for employees, such as improving optical techniques, following the shift to broadband by the Philippine government and the FTTH requirements of major telecommunication carriers.

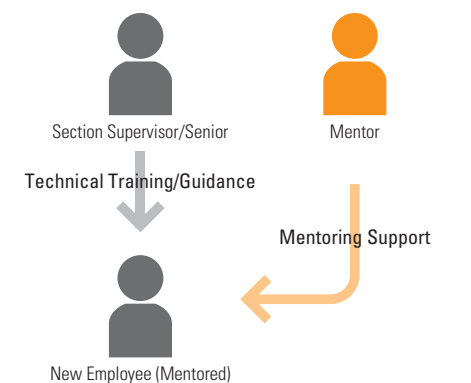


## Mentoring Program

A senior employee – mentor – is appointed for each new employee, separate from his assigned section supervisor, for guidance and counseling. Through dialogue regarding points noticed by his mentor and counseling, the system promotes voluntary and

autonomous development by each new employee (mentored). With monthly interviews, periodical reports and feedback, not only the new employee, but the senior employee acting as a mentor, this is a program for positive growth.

### Idea behind the Mentoring Program



# Environmental Protection

We are steadily reducing the energy used in our daily business activities as well as CO<sub>2</sub> and waste emissions in addition to further limiting the environmental impact from the life cycle of our development properties and the environmental load of the supply chain.

## Environmental Management

**Environmental Management System**  
The MIRAIT Group has acquired EMS (Environmental Management System ISO 14001) certification for our domestic companies. We are also forming and putting into operation environmental management systems similar to this at overseas group companies as well.

At each business location, operational activities are examined and evaluated for their environmental impact. We then devise measures to address significant environmental aspects and every year develop implementation plans, confirming the results and issues for continuous improvement.

We conduct regular audits, with ISO

14001 certified offices having internal and outside audits annually.

Furthermore, in the four years from 2014 to 2017, there have been no incidents, accidents, pollution, or grievances caused by violation of environmental laws or problems (for domestic Group companies).

\*The Policy on the Environment is available on our website.

### Environmental Goals and Achievement Status

Goal:	Fiscal 2017 results
Reducing CO <sub>2</sub> emissions by more than 1% over the previous year	Reduction of 2.5% from fiscal 2016

<Scope> Three companies: MIRAIT Holdings Corporation, MIRAIT Corporation, and MIRAIT Technologies Corporation



Photovoltaic Solar Power Generation Facilities of the Kobe Technical Center

## Sharing Results from Environmental Information Systems

To aggregate the actual values of leading performance indicators for environmental conservation initiatives (for CO<sub>2</sub> emissions, electric energy consumption, consumption of fuels such as gasoline and kerosene, volume of waste – paper, household garbage, industrial waste – and “green” procurement amounts), we have initiated an environmental system that can be used for monitoring and analysis. Particularly in summer and winter when electricity consumption increases, each workplace sets its own goals and has campaigns to encourage reduced energy use.

## Mitigating Climate Change

### Saving and Creating Energy at Construction Centers

At construction centers in each location, we have installed LED lighting, demand monitoring systems for power consumption, and are utilizing roof space for PV solar power generation to promote resource conservation.

strict enforcement of lights-out policies and regulation of elevator use, we are encouraging reduced power consumption in multiple aspects.

### Improving Fuel-efficiency of Vehicles

We endeavor to raise company-wide

awareness and promote reduced energy use by introducing low-emission, fuel-efficient vehicles, and by encouraging ecologically friendly driving – eco-drive – which is relatively less burdensome to the environment and leads to fewer traffic accidents.

**366** thousand kWh

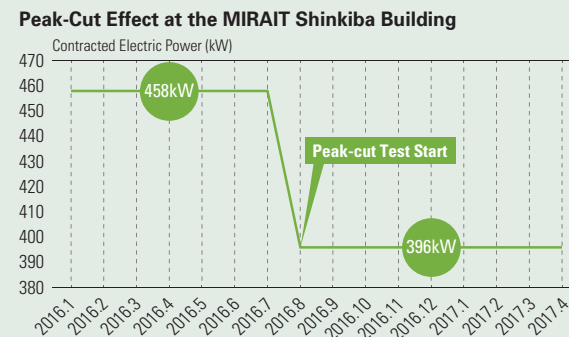
Annual electrical power output of PV solar generation systems at 11 offices of MIRAIT Corporation and MIRAIT Technologies Corporation (fiscal 2017)

### Promotion of a Power Consumption Economy

Most of the energy consumed in offices is electricity. Unified as the MIRAIT Group, we are promoting reduced power consumption measures through rationalization of use and reduction in the number of printers and copy machines, comprehensively setting power-savings on computers, along with proper temperature control. Additionally, with

### Saving Energy and Reducing CO<sub>2</sub> Emissions Through Building Energy Management

In 2012, a cloud-based building energy management system was installed at the Shinkiba Building of the MIRAIT Corporation. This system reduces power consumption by automatically controlling the indoor temperature at a set point while controlling the CO<sub>2</sub> concentration of the indoor space at an appropriate level. Furthermore, in 2016, we installed a peak cut control system so that when the building’s consumed power exceeded a prescribed threshold, the air conditioning (outdoor equipment) – which accounts for a significant ratio of consumed power – is turned off. We were thus able to reduce contracted electricity from 458kW to 396kW for an approximately 14% reduction.



## Contributing to a Recycling-based Society

### Recycling of Construction By-products

We continuously work to minimize the volume of construction by-products that occur at each construction site and to discover ways to recycle by-products that do occur. As part of that effort, we switched from wooden drums on which steel stranded wire is wound and disposed of after one use to a reusable

ECO drum – part of a telecommunications construction industry program – starting in 2008 and, except for a few sizes, use only ECO drums.

### Promoting Recycling Construction Spent Products

We promote recycling by collecting uniforms and helmets after they have



ECO Drum

been used and using a thermal processing (used as heat) by contracting a specialized company.

### Reducing Paper Use

We are promoting paperless meetings and standardizing procedures for using multifunction devices that eliminate wastefulness.

## Comprehensive Environmental Conservation Measures

### Green Product Development Guidelines

The MIRAIT Group has established Green Product Development Guidelines compiling the points that should be considered from the product design and development stage with the preservation of the global environment in mind. During development, while both observing related laws and ordinances, we also consider environmental effects over the life cycle of the construction method, product, or service.

### Environmental Standards for The Selection and Assessment of Business Partners

The MIRAIT Corporation considers the approach to CSR efforts when evaluating and selecting business partners. We ask about environmental considerations (promotion systems, chemical substance management, CO<sub>2</sub> emission reduction, and industrial waste reduction) to use as a basis for our decision (see p.28).

### Green Purchasing

Whenever possible, we purchase office supplies and paper based on the recommendations of GPN\* green purchasing guidelines. The green purchasing ratio for MIRAIT Corporation and MIRAIT Technologies Corporation was 81.8% and 84.0% respectively in fiscal 2017.

\*For purchasing decisions, the GPN (Green Purchasing Network) guidelines list products with consideration given to environmental conservation.

## Biodiversity Conservation

### Rural Area and Neighborhood (Satoyama) Preservation Activities

Since 2003, we have participated in the rural area and neighborhood (Satoyama) preservation activities of the Osaka Green Trust (Public Interest Incorporated Foundation) by recruiting volunteers both in-house and from affiliated companies. As in the previous year, fiscal 2017, we

participated in restoring and maintaining the planted bamboo groves by pruning and thinning the bamboo grass in the Kurumatsukuri Forest of Ibaraki City in metropolitan Osaka. We are taking initiatives toward environmental conservation and preservation of biodiversity for creation of an abundantly green and pleasant environment.



Work in at the Kurumatsukuri Forest

## Contributing to Environmental Protection Through Business

### Direct and Indirect Contributions

We are contributing directly to the realization of energy infrastructure that pursues a low-carbon society through the design, construction, operation and maintenance of power generation facilities that use renewable energy with

focus on solar power, installation and maintenance of LED lighting, installation and maintenance of EV charging stations as well as the provision of energy management systems and battery systems.

We are also taking an active part in

trends toward the realization of high-efficiency smart energy systems and smart cities, such as the development of a broadband wireless sensor network system and next-generation mobility.



# Occupational Safety and Health

We introduce and continually improve safety measures because safety is the most important fundamental priority when executing operations. The MIRAIT Group also supports employees in maintaining both physical and mental health.

## Occupational Safety and Health Management

The companies of the MIRAIT Group operate an occupational safety and health management system certified under the OHSAS 18001. We work in concert to comply with occupational safety and health requirements, reduce and eliminate occupational safety risks through risk assessment and activities to anticipate danger, in addition to raising awareness through bilateral enlightenment activities in accordance with the Policy on Occupational Safety and Health, which clearly states safety is the greatest priority when engaging in operations. We continuously improve our performance by setting all actions that lead to accidents resulting in injury or death, traffic accidents and other seriously unsafe incidents as supervision check-points.

\*The full text for the Policy on Occupational Safety and Health is available at our website.

### Striving Toward the Eradication of Accidents and Improvement of Safety Quality

A stance of returning to the basics in our daily actions is essential to achieve the goal of eradicating accidents and improving safety awareness of our

### Ensuring Safety in a Large-scale Disaster

In response to social needs, we have distributed a Pocket Manual for Major Earthquakes and other Disasters to employees in case of major emergencies. It contains a collection of information regarding principles of action to be taken and safety confirmation methods when a disaster occurs. It also calls for a confirmation of routes home to be taken on foot and for practice with the safety confirmation system.

operations. We are implementing that stance.

We are pushing for a deeper understanding of safety in on-site workers by preparing and distributing such materials as operational safety handbooks, by conducting safety training and confirmation of implementation, and by providing materials such as videos of accident scenes as well as visual presentations of laws and regulations covering safe practices. Additionally, to encourage communication about safe practices among workers, company executives – from the president on down – diligently make visits to the workplace in an effort to raise each worker’s awareness of safety on a daily basis.

### MIRAIT Group Safety Conventions

In July every year, in conjunction with “National Safety Week”, Group companies and affiliated companies hold MIRAIT Group Safety Conventions in two locations, east and west, to encourage waterfront development reconfirming safety awareness and safety measures. In fiscal 2017, presentations from the employee in charge of safety about

### Support of Health Management

In addition to enforcing regular health check-ups for all employees, comprehensive medical examinations for employees over a certain age and specific health guidance, we intend to encourage health monitoring for our employees. We also provide recreation facilities in several locations in Japan as opportunities to refresh, and we always encourage activities that promote health such as the walk rallies held by the Health Insurance Association.



Dangerous Experience and Body Sensation Training (Simulating Roofs in Raining Weather Conditions)

entrenchment of the Safety Work Cycle and various other examples of workplace safety strategies were discussed, and a lecture by a third-party instructor was given.

### Danger Simulation Training

Aiming to eradicate falling and slipping accidents which account for approximately 40% of all fatal accidents at construction sites, the MIRAIT Group holds danger simulation training using facilities where employees and workers from affiliated companies can have simulated accident experiences. The purpose is to raise safety awareness through experience. Because the participant trainee senses a falling accident bodily, his appreciation of the importance of basic movements and safety appliances is much stronger. We have expanded the number of target branch offices and the training topics with more than 450 trainees participated in fiscal 2017.

### Mental Health

Since December 2015, a stress check system has been made mandatory under law. This regime aims to be a primary precaution measure through employee awareness of stress, workplace reform, and to stave off psychiatric disorders through primary prevention. Before the law was enacted, the MIRAIT Group prepared a Mental Follow-up System (with consulting services, etc.) based on group analysis after conducting stress check. Each department conducted mental stress training through workplace reform. Efforts are being made toward prevention of psychiatric disorders.

# Social Responsibilities in the Supply Chain

We work to promote social responsibility in the supply chain by considering the approach to CSR when evaluating and selecting business partners.

## CSR as a Standard for Evaluating Business Partners

The MIRAIT Group determines the ability for business partners to supply products and services following our requirements as part of the integrated management system (see p.10). We have also formulated the Procurement Management Regulations for the purpose of selecting and evaluating business partners to ensure procured products conform to the requirements in these regulations. These

regulations have been drafted to encompass both the companies (suppliers) handling materials, semiconductors, measurement instruments and other products as well as the companies (business partners) providing services.

The MIRAIT Technologies Corporation uses these common evaluation items in the evaluation and selection of business

partners (Japan). In addition to direct items necessary to provide satisfaction to customers, we also have incorporated items to evaluate the approach to CSR efforts. The approach to CSR is comprehensively evaluated after asking each business partner about their environmental considerations (promotion systems, chemical substance management, CO<sub>2</sub> emission reduction, and industrial waste reduction) as well as their contributions to local communities (social contribution activities and dialogue with the communities, NPOs and NGOs).

These evaluations are conducted once annually for companies that we will continue to do business with in addition to occasions when we are considering new business dealings. We support corrective actions for any business partner who has shown a lower level in their evaluation.

The MIRAIT Corporation uses a similar evaluation system to conduct comprehensive evaluations of other business relationships.

### Evaluation Items of Business Partners: MIRAIT Technologies Corporation

Item	Overview
Manufacturing certifications	Either the acquisition of the ISO 9001 certification, JIS certification, or establishment of a quality assurance system
Quality (1)	Conformity of products for purchase to company plans
Quality (2)	Any inconsistencies found in receiving inspections
Level of cooperation	Approach in cooperating with requests for product information
Supply capabilities	Availability of manufacturing facilities and inventory
Delivery	No major impact on construction projects due to delayed delivery
Price	Level of compliance with company expectations
CSR	Active introduction of CSR efforts *Comprehensive evaluation through the questions in the table below



### Area and Questions to Ask Partner Companies about CSR Activities

Area	Question
1. Environmental considerations	a Has your company put in place an environmental management system (ISO 14001) that it is continually improving?
	b Does your company properly manage chemical substances in product and manufacturing processes?
	c Has your company set targets to reduce CO <sub>2</sub> emissions and does it work to establish manufacturing, fabrication, distribution and other processes with a low environmental burden?
	d Has your company set targets to reduce industrial waste, and does it process that waste appropriately?
2. Contributions to Local Communities	a Does your company conduct social contribution activities that contribute to the development of the local community?
	b Does your company have a system to engage in a regular dialogue with the local residents, NPOs and NGOs?

## Concepts of CSR Procurement

The MIRAIT Group has defined unique guidelines to incorporate considerations about social challenges and the environment into the procurement practices of the supply chain and promotes efforts while pursuing cooperation with the suppliers when expanding businesses into fields related to building social infrastructure, such as our

core business in telecommunications infrastructure.

These guidelines are put into operation with emphasis on six particular regions – quality, delivery, improvement activities, management stability, environmental protection, and informational resource management – even in the region of CSR.

## Contributions to Local Communities

As a member of the local community, we earnestly plan and carry out efforts to build communities for comfortable living – full of vitality – by giving full play to our strengths.

### Contributing to Problem-solving in Local Communities and Society as a Whole

**Support for the Tohoku Disaster Area**  
Building on activities from the previous year, we are participating in the community service activities being carried out in Iwanuma City, Miyagi Prefecture by the Miyagi Dengyo Association (disaster volunteers), planting trees for tsunami control forest restoration.

The MIRAIT Group continues to participate in the activities begun in 2011, having thus far installed flower beds near the temporary housing and removed debris from farmland.

### Utilization of Abandoned Fields and Rice Paddies

All over Japan, abandonment of once cultivated fields and rice paddies is increasing, causing damage such as the spread of weeds, pests, birds, and other animals to neighboring farmland. As a contribution to the local community,

MIRAIT Group affiliated company – Murayama Doken Co., Ltd. – is cultivated rice in formerly abandoned land in Tokamachi City, Niigata Prefecture. In support of this effort, the MIRAIT Group is calling on volunteers for rice planting and reaping.



Harvesting of Abandoned Rice Paddies

**Enhancing Shareholder Incentive Options and Donating to the Special Olympics Nippon**  
The MIRAIT Group sponsors substantive activities of the Special Olympics Nippon.

We have even made the donation to this organization a new option that can be selected as an incentive for shareholders. In this first year of this program, all of our shareholders raised ¥520,000 as a donation.

### Environment Beautification

The MIRAIT Group continually takes part in local clean-up activities. In addition to removing litter and articles washed ashore at Inage Beach in Inage Seaside Park, Chiba Prefecture, we have been participating in cleanup activities in the area around Meguro River in Tokyo's Shinagawa Ward continuously since 2003. At Daimei Tusan Corporation, a MIRAIT Group company, on the 23rd of every month, the Two-Three Day event is held for cleanup activities around the headquarters office in Koto Ward, Tokyo. We also conducted many other cleaning activities in addition to this example.

### Activities to promote communication with local communities

#### Participating in Festivals

With the changes in social structure, a continuation of the festivals that have been a tradition in all parts of Japan is becoming increasingly difficult. The MIRAIT Group companies advocate employees to participate in these local festivities. Our employees also have had the opportunity to carry the Mikoshi shrine.

#### Participation in the Toyosu Festa

The MIRAIT Group has participated in the Toyosu Festa held by Tokyo's Koto Ward every year since our head office moved to Toyosu in 2010.

### Utilizing ICT Technology to Support the Revitalization of the Fukushima Tsuchiyu Hot Spring

The MIRAIT Corporation is using ICT technology to support the revitalization of the Fukushima Tsuchiyu Hot Spring. Aiming to restore the Tsuchiyu Hot Spring in Fukushima prefecture devastated by harmful rumors due to the nuclear incident after the Great East Japan Earthquake, Genki Up Tsuchiyu Co., Ltd. is using waste heat for a hot spring binary power generation business with our involvement (see the column on p.16) while furthering a business breeding fresh water prawns. In March 2017, the MIRAIT Corporation Tohoku Branch Office and Solution Business Unit proposed the use of a remote monitoring system for the temperature and quality of water as well as remote monitoring cameras that use optical lines. This remote monitoring system measures the water temperature as well as the pH and dissolved oxygen levels in addition to sounding an alarm when an abnormal value is detected as an application for the stable farming of freshwater prawns. This freshwater prawn permaculture business is expanding as an industry that gives new life to the city by providing these prawns to local Japanese inns while operating shrimp fishing ponds.

The MIRAIT Corporation will advance activities to support the reconstruction of Tohoku through this same kind of business support in the future.



Water Quality Sensor Installed in the Water Tank



Freshwater Prawn

## Corporate Governance and Internal Control

### Basic Approaches to Corporate Governance

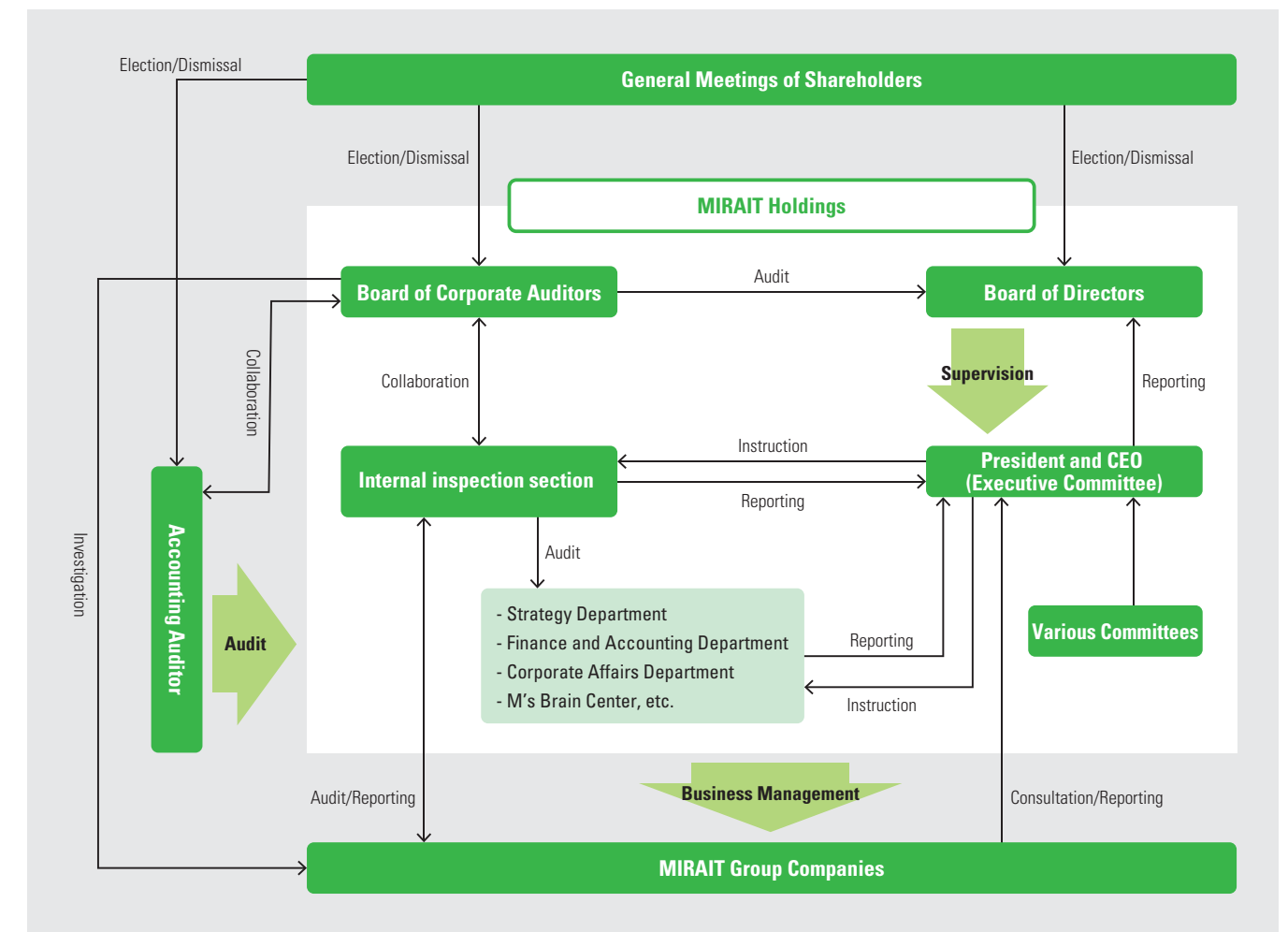
The MIRAIT Holdings Corporation recognizes the importance of management as a socially-responsible company and has put in place organizational structures and systems to ensure transparency and fairness in decision-making. Building relationships founded in trust with all of our stakeholders is

positioned as the most important aspect of management. We aim to improve corporate value and generate sustainable growth as a comprehensive engineering and services company by practicing and continually enhancing effective corporate governance.

### Corporate Governance Structure

We are a company with auditors, overseen by a board of directors, board of corporate auditors, and accounting auditors.

#### Governance Structure





## Activity Status of the Board of Directors and Policies and Procedures for Nominating Directors and Auditors

The MIRAIT Holdings Corporation generally convenes board of directors meetings once a month but also brings together the board of directors on other occasions as necessary to decide upon policies and important matters related to the management of MIRAIT Holding Corporation and the Group in addition to matters stipulated by laws and regulations as well as the Articles of Incorporation. In addition to checking the performance of directors in their duties from compliance with laws and regulations to risk management, informational sharing and the speed of resolving problems, the Company strives to ensure the effectiveness of the board of directors as a whole by holding meetings between the President and outside directors or auditors.















In the nomination process of candidates for the board of directors and auditors, a wide variety of candidates are selected from both inside and outside the company, and candidates having superior personality, judgment and high management

skills are chosen by the board of directors.

Outside directors who have abundant experience and knowledge across different fields can nominate individuals from the perspective of enhancing the corporate value in medium- to long-term of the firm by providing guidance and managerial supervision, and who can carry out their roles and duties with a specialized and objective viewpoint. Moreover, outside directors who have abundant experience and knowledge across different fields and with independent and objective views can properly monitor the board of directors' managerial decisions, execution of duties, and their observance of laws and ordinances, enhancing the transparency of the board. MIRAIT Holdings appoints individuals who can contribute to the enhancement of corporate value as independent outside director candidates.

The rationale for selection of each director and auditor is outlined in the notice of general meeting of shareholders.

### Members of the Board of Directors (As of June 26, 2018)

 President and Chief Executive Officer <b>Masatoshi Suzuki</b>	 Senior Executive Vice President <b>Kouichi Takahatake</b>	 Senior Executive Vice President <b>Toshiki Nakayama</b>	 Director and Managing Executive Officer Chief Financial Officer <b>Manabu Kiriya</b>
 Director and Managing Executive Officer General Manager of the Strategy Department <b>Ryuichi Hara</b>	 Director and Managing Executive Officer General Manager of the Corporate Affairs Department <b>Yasuhiro Yamamoto</b>	 Director and Managing Executive Officer General Manager of the Emerging Business Office <b>Masayoshi Hosokawa</b>	 Director <b>Mikio Doi</b>
 Director (Outside) <b>Eiji Ebinuma</b>	 Director (Outside) <b>Chiharu Baba</b>	 Corporate Auditor <b>Masashi Sogo</b>	 Corporate Auditor (Outside) <b>Hiroshi Seki</b>
 Corporate Auditor <b>Keiji Kitajima</b>	 Auditor (Outside) <b>Chiaki Ishikawa</b> (Chiaki Katsumaru)		

## Assessing Board Effectiveness

The MIRAIT Holding Corporation conducts self-assessments once a year on the effectiveness of the board of directors by all the directors and auditors.

More specifically, we conduct a self-assessment using an anonymous questionnaire mainly to evaluate the board's composition, processes, responsibilities and functions, as well as its state seen from the point-of-view of outside directors and corporate auditors. The responses to these questions are collected by an external law office with a duty of confidentiality and analyzed by a third-party organization. The board of directors

verify and assess the current state based on the results of this analysis, keeping raised issues on the agenda.

Our efforts in 2017 include setting up occasions for a free exchange of ideas among directors about medium- to long-term management strategies and challenges on the basis of the results in the 2016 assessment. Some directors call for continued discussions on such material challenges.

We will work to sustain and improve board effectiveness by further deepening debates in the board of directors.

## Introduction of Performance-linked Stock-based Compensation Plan

The MIRAIT Holding Corporation introduced a performance-linked stock-based compensation plan from September 2016 onwards for the purpose of further clarifying the link between compensation of the MIRAIT Group's directors\* and corporate performance and stock value as well as

incentivizing contributions to enhance medium- to long-term performance and corporate value.

\*This refers to MIRAIT Holdings Corporation and its subsidiaries, MIRAIT Corporation and MIRAIT Technologies Corporation directors and executive directors (excluding outside directors and non-executive directors).

## Internal Control System

Our board of directors has adopted the Basic Policies for the Internal Control System to ensure the appropriateness of operations of the MIRAIT Group. We have also enacted Administrative Regulations for Subsidiary Companies and a

Group-wide internal control system in our effort to appropriately manage the Group through specific internal controls at our subsidiary companies.

## Audit by Corporate Auditors and Internal Audit

Our corporate auditors set auditing policies and define responsibilities of each corporate auditor by an audit plan. They audit the execution of duties by directors by attending meetings of the board of directors and other important meetings, reviewing important approval documents, having discussions with the President and interviewing each director. Our corporate auditors also have regular meetings with the accounting auditor, as part of their supervising and verifying activities, to judge appropriateness of the methods used and conclusions reached by the accounting auditor. In the regular meetings, our corporate auditors receive reports and explanations on the audit plan and its progress, problems found as a result of audits, as well as the status of building systems to ensure adequate execution of

duties by the accounting auditor and of preparing and operating internal control related to financial reporting.

The internal audit section conducts audits of the MIRAIT Holdings Corporation and Group companies with focus on operational audits after assessing the overall internal control systems. The section also strengthens internal control functions by such means as thoroughly checking the progress of implementing observations and suggestions from the audit.

The corporate auditors and the internal audit section works in coordination and have meetings as necessary to discuss audit plans, current status of audits, and problems discovered in audits.

## Risk Management

Establishing the fundamental approaches of managing risks for the Group in the Risk Management Regulations, we work to perform effective control over various risk factors, and the Risk Management Executive Committee – with the President at its chair – reviews issues regarding risk control.

Regarding information security, the group has introduced Information Security Management Systems (ISMS; ISO/IEC

27001) and will work painstakingly to prevent informational leaks and safeguard assets. When an accident, including information security accident, occurs, "0 Report" is immediately shared with management. To be prepared for a resourceful response, we have set up an in-company accident bulletin reporting system.

## Compliance

With the Compliance Regulations in place, the Compliance Executive Committee – with the President as its chair – deliberates on individual problems of the Group as well as

manages the progress of promotion activities. We have also distributed our Compliance Manual within the Group to share awareness of business ethics throughout the organization.

## Basic Approach to Payment of Taxes

The MIRAIT Group observes all laws and regulations concerning taxation practices in all countries and regions where it operates,

consistently working to maintain and raise its standards of taxation compliance.

## Basic Approach to Eliminating Antisocial Forces

We actively communicate with the local communities who are the foundation for the existence of our organization in The Corporate Ethics Charter of the MIRAIT Group. We are steadfast in refusing all antisocial forces which may harm the

order and safety of civil society and will respond without question under the basic policy to never be afraid to refuse monetary payments or engage in no relationship with antisocial forces.

## Dialogue with Shareholders and Other Investors (IR Activities)

The MIRAIT Group consistently engages in IR activities, seeing as a source of appropriate corporate evaluation and trust, as well as a driver of sustainable growth and medium- to long-term

corporate value as a comprehensive engineering and service company.

## Timely Disclosure

The MIRAIT Group provides timely and appropriate informational disclosure through TDnet and EDINET. We also take advantage of mediums such as our corporate website (<https://www.mirait.co.jp/en/>) and press releases in an effort to

further broaden our dissemination of information. The MIRAIT Group also strives to provide beneficial information that is easy for shareholders and other investors to understand, such as materials used in its IR activities.

## Efforts to Enhance Communication

The MIRAIT Group holds financial results briefings twice a year for analysts and institutional investors and releases videos, such as those on its website, to provide a look at these briefings. In addition to providing important information in English in a timely manner to overseas institutional investors, we also engage in overseas IR activities in the North American, European and Asian regions. At these briefings and overseas IR activities, our President delivers explanations to encourage constructive dialogue with our shareholders and other investors. The MIRAIT Group also participates accordingly in presentations to individual investors and other events held by brokerage firms. We provide feedback such as the opinions and views received through venues such as financial results briefings and individual consultations as well to the primary parties concerned with the Group.

Furthermore, the Group also sends MIRAIT Report booklets that include business performance and topics to all of the shareholders twice a year.



Financial results briefing materials (March 2018 term)



MIRAIT Report (8th term)



Scale of financial results briefings

## Control of Insider Information and Fair Disclosure

The MIRAIT Group strives to disseminate accurate information in a timely manner in accordance with the Disclosure Policy published on the website and in other corporate materials. We also fully and properly control information in accordance with

our Insider Trading Regulations when in the possession of important information not yet released to the public domain when meeting with shareholders and other investors.

## Efforts to Vitalize the General Meetings of Shareholders

The MIRAIT Holdings Corporation actively endeavors to ensure vitalization of the General Meetings of Shareholders and smooth voting practices on matters through visualization and early dissemination of convocation notices, online voting, and the

creation of English convocation notices (abridged editions) among other measures. We also set up venues to get to know our shareholders after the General Meetings of Shareholders and work to have a broad exchange of views.

### Message from Our Outside Director

#### Endeavoring to Communicate from Diverse, Objective Points-of-View

The board of directors at the MIRAIT Holdings Corporation generally meets on Tuesday afternoons. Except in some matters, the materials for the board of directors meetings are sent to us the weekend before. This allows every director to look through the materials over the weekend to spend enough time examining the information. I fully consider any points of issue or improvement and make notes from perspectives that not only include my background as a legal professional but also my experience in administration, review and finance which I cultivated while working at a bank. Before the board of directors meet on that day, the outside directors and auditors have an open and honest discussion to organize our thoughts by checking whether any of our thoughts are self-serving. The President always asks me if I have anything to add at the board of directors meetings. I do my best to provide insight to each matter under deliberation. The MIRAIT Holdings Corporation has an organizational culture where opinions of its outside directors are taken seriously. I will continue to work to strengthen corporate governance and enhance corporate value through the board of directors.

April 2002  
Assistant Manager of Human Resources Division, Planning Team, Mizuho Bank, Ltd.  
April 2003  
Manager of President's Office and Manager of General Planning Office, Olympic Co., Ltd.  
December 2008  
Registered as an attorney at law  
April 2010  
Part-time teacher at Sophia Law School (to present)  
January 2013  
Partner of Tanabe & Partners (to present)  
April 2014  
Member of Toranomon Hospital Clinical Review Board (to present)  
Independent Committee Member, DC Co., Ltd.  
June 2014  
Director of MIRAIT Holdings Corporation (to present)  
June 2016  
Outside Director, Rakuten Bank, Ltd. (to present)

Outside Director  
**Eiji Ebinuma**



#### Actively Contributing to Deliberation with Depth

The MIRAIT Group is in the midst of a dramatically changing management environment, such as the growing social requirements related to broader corporate governance and environmental stewardship in addition to rapidly advancing technological innovations in the field of information and communication. In response to this business environment, the MIRAIT Group has been actively promoting business strategies that include expanding its business domains, enhancing internal and external business platforms as well as clearly improving its business performance based on the Mid-term Management Plan formulated in fiscal 2017. However, I think the Group must remain steadfast in overcoming various management challenges to ensure even greater sustainable growth and live up to its social responsibility as a comprehensive engineering and services company. Therefore, the board of directors needs to engage in deliberation that has depth and fully monitor the progress of business execution by providing proper management, making appropriate and resolute decisions, and ensuring stable business operations. I will actively provide comments from objective and long-term perspectives to contribute to management in an era of rapid change based on the experience and knowledge in different industrial sectors which I have cultivated through managing financial institutions.

April 2005  
Deputy President (Representative Director), Mizuho Trust & Banking Co., Ltd.  
June 2007  
Corporate Auditor (Full-time), Japan Energy Corporation (currently JXTG Nippon Oil & Energy Corporation)  
June 2012  
Corporate Auditor (Full-time), JX Nippon Mining & Metals Corporation  
June 2015  
Outside Director, Saitama Resona Bank, Limited  
Outside Corporate Auditor, Tohoku Electric Power Co., Inc.  
June 2017  
Outside Director (Member of Audit Committee), Resona Holdings, Inc. (current)  
June 2018  
Director of MIRAIT Holdings Corporation (to present)  
Outside Director and Corporate Auditor, Tohoku Electric Power Co., Inc. (current)

Outside Director  
**Chiharu Baba**



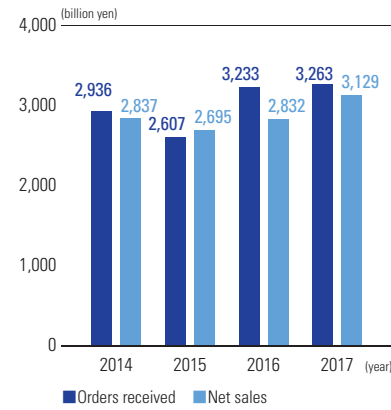


# Financial Data (Consolidated)

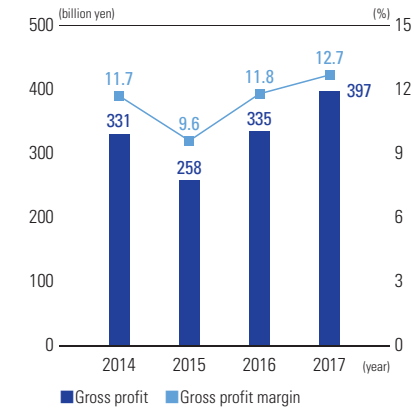
We strive to maintain a sound financial footing and make accurate financial information promptly available by various means including via our website and brochures. By doing so, we hope that our Group will continue to be a corporate organization that is supported and trusted by society.

\*The latest information can be found at our website (<https://www.mirait.co.jp/en/>)

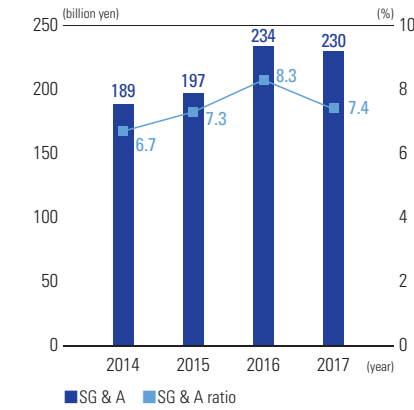
Orders received/Net sales



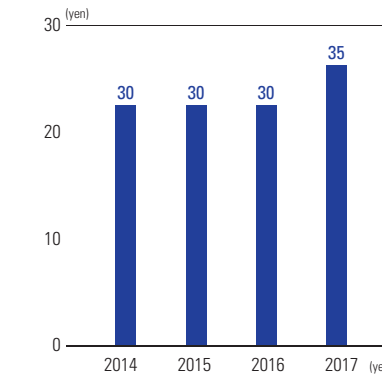
Gross profit/Gross profit margin



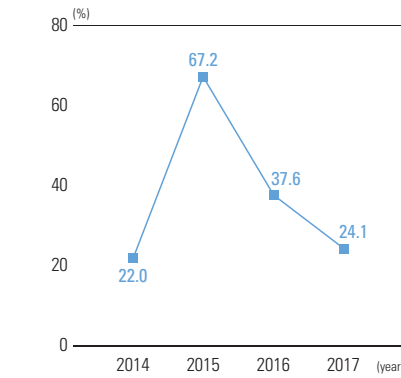
SG & A/SG & A ratio



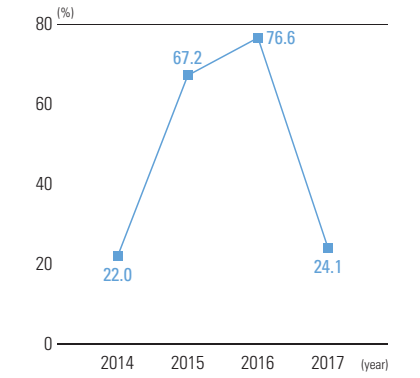
Dividend per share



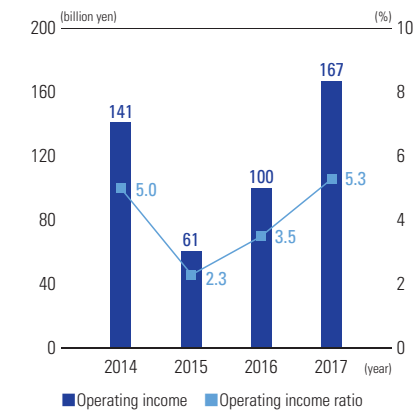
Dividend payout ratio



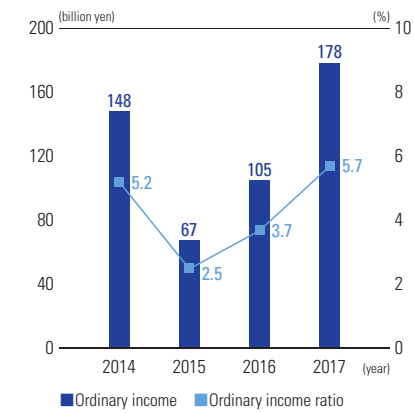
Total return ratio



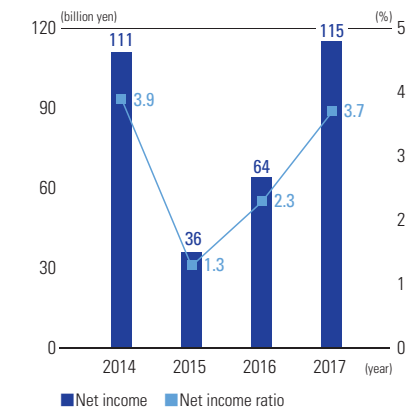
Operating income/Operating income ratio



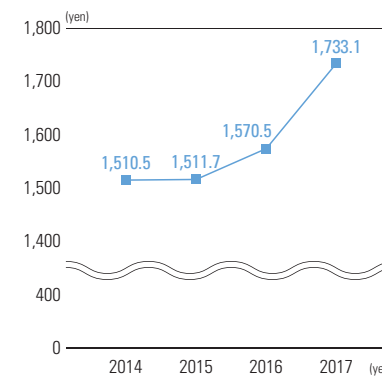
Ordinary income/Ordinary income ratio



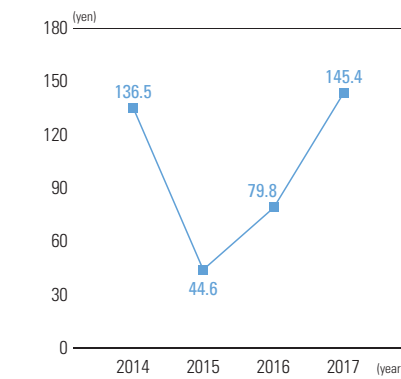
Net income/Net income ratio attributable to owners of parent



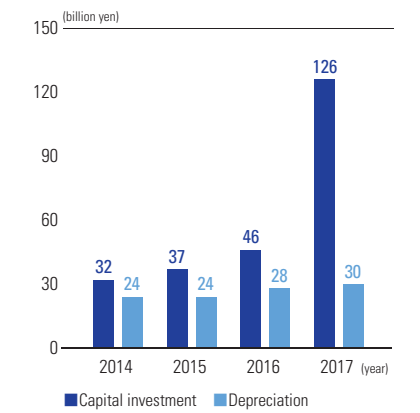
Net assets per share



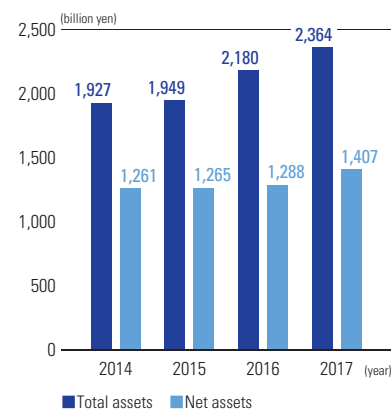
Net income per share



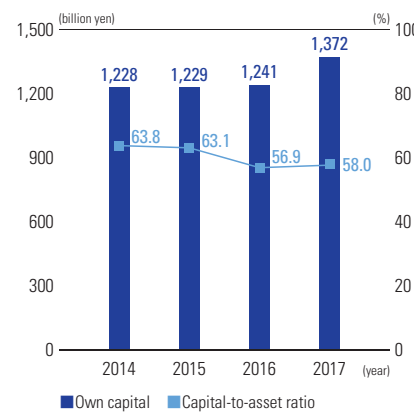
Capital investment/Depreciation



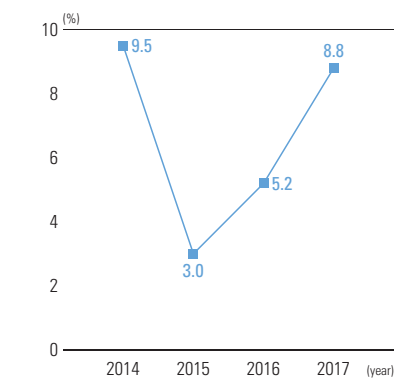
Total assets/Net assets



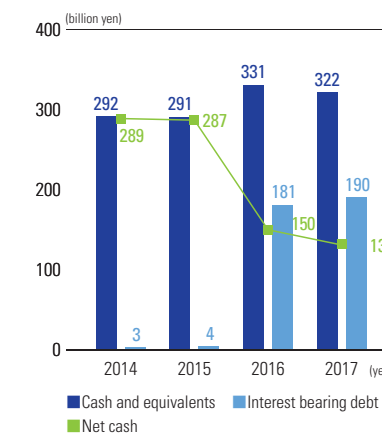
Own capital/Capital-to-asset ratio



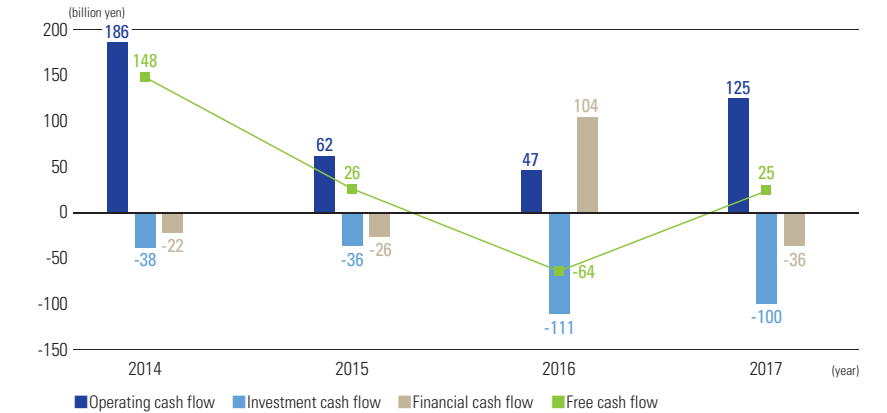
Return on equity (ROE)



Cash and equivalents/Interest bearing debt



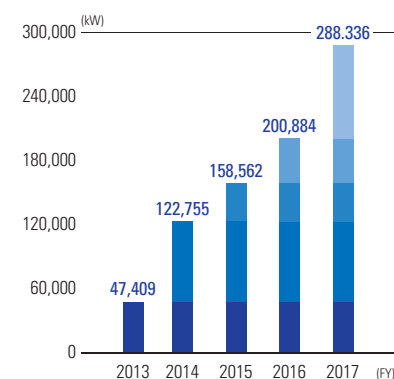
Cash Flow



## Non-financial Data

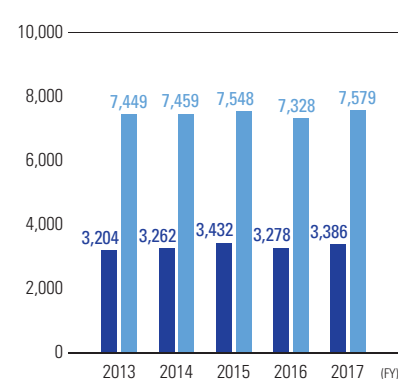
The MIRAIT Group also prepares and discloses material non-financial data from its business activities, taking steps to widen its scope.

### Provision of renewable energy



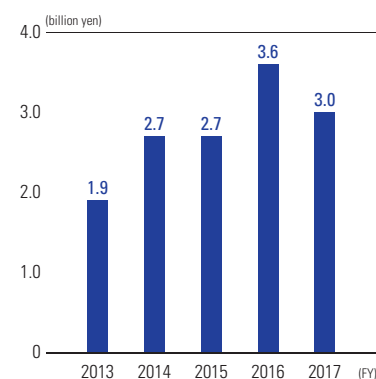
\*Generation capacity (cumulative total) of our group construction facilities

### Number of Qualifications



■ Number of software qualifications  
■ Number of construction qualifications

### Corporate citizenship spending



### Occupational Safety and Health

	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017
Occupational accident frequency rate	0.17	0.33	0.00	0.18	0.19

### Diversity

	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017
Ratio of women in new graduate hires	4.2%	13.0%	19.5%	23.9%	24.6%
Ratio of women in managerial positions	1.4%	1.8%	2.1%	2.7%	2.9%
Female directors (officers) and number of outside directors	0	1	1	1	1 (person)
Rate of parental leave taken by female employees	100%	100%	100%	100%	100%
Rate of annual paid leave	40.7%	49.5%	53.8%	53.3%	57.1%

### Environment

	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017
CO <sub>2</sub> emissions (t-CO <sub>2</sub> )	9,219	7,298	7,117	7,095	6,736

(Value is the total for MIRAIT Holdings Corporation, MIRAIT Corporation, and MIRAIT Technologies Corporation – the three companies)

## Status of Shareholders

\*The latest information can be found at our website (<https://www.mirait.co.jp/en/>)

As of March 31, 2018

Total authorized shares: 330,000,000

Total outstanding shares: 85,381,866 shares (including 5,840,584 treasury shares)

Number of shareholders: 16,639 (excluding treasury shares)

### Major shareholders

Name	Number of shares held (in hundreds)	Ownership (%)
Sumitomo Electric Industries, Ltd.	162,360	20.41
Japan Trustee Services Bank, Ltd. (trust account)	47,686	6.00
The Master Trust Bank of Japan, Ltd. (trust account)	37,434	4.71
Sumitomo Densetsu Co., Ltd.	24,886	3.13
STATE STREET BANK AND TRUST COMPANY 505001	23,532	2.96
Japan Trustee Services Bank, Ltd. (trust account 9)	14,215	1.79
Japan Trustee Services Bank, Ltd. (trust account 5)	13,170	1.66
Mizuho Bank, Ltd.	12,299	1.55
THE BANK OF NEW YORK, TREATY JASDEC ACCOUNT	12,185	1.53
DFA INTL SMALL CAP VALUE PORTFOLIO	11,836	1.49

\*1 The ratio of shares held is calculated after subtracting the treasury shares (5,840,584).

\*2 The number of shares held shown is rounded down to the nearest 100 shares and the ownership is calculated by rounding off to two decimal places.

### Share distribution by owner (excluding treasury shares)

Number of shares by owner	(shares)	ratio	Number of shares by owner	(shares)	ratio
Financial institutions	22,241,057	28.0%	Financial institutions	54	0.3%
Financial Instruments business operators	768,928	1.0%	Financial Instruments business operators	31	0.2%
Other corporations in Japan	23,202,188	29.2%	Other corporations in Japan	272	1.6%
Foreign corporations, etc.	20,053,868	25.1%	Foreign corporations, etc.	205	1.3%
Individuals/other	13,275,241	16.7%	Individuals/other	16,077	96.6%
<b>Total</b>	<b>79,541,282</b>	<b>100%</b>	<b>Total</b>	<b>16,639</b>	<b>100%</b>