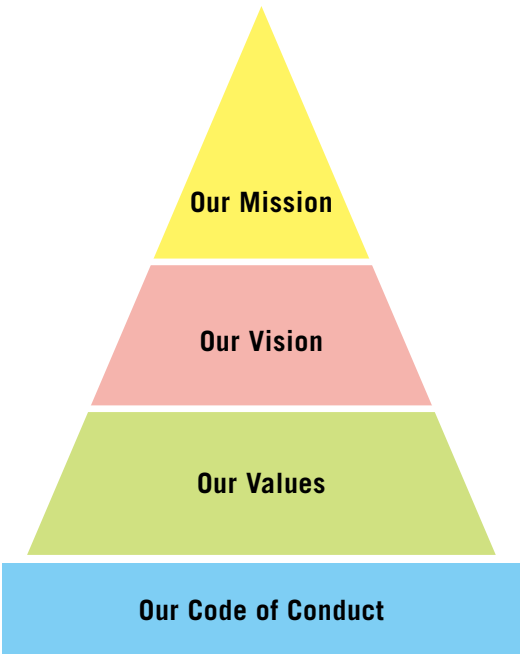


NIPPON SIGNAL GROUP PHILOSOPHY



Our Mission

We help realize a more secure and comfortable society through superior technologies that provide safety and reliability.

Our Vision

We strive to become a global company by pursuing world-leading technologies with ingenuity and passion to inspire our customers' *Kando*\*.

\* *Kando* is a Japanese word that describes the sense of awe and the emotion you feel when experiencing something beautiful and amazing for the first time. It is the moment when your expectations are exceeded – you feel *Kando*.

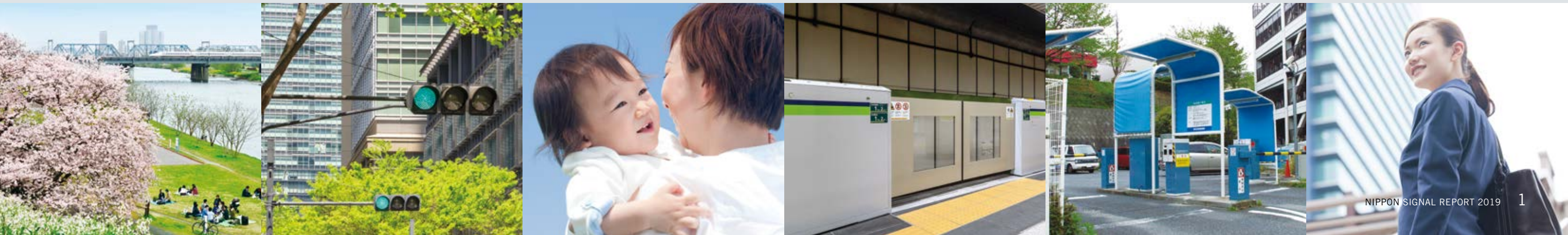
Our Values

- 1. Emphasize “safety and reliability” above all.  
... *Mono-zukuri* (Manufacturing)
- 2. Strive to improve customer value by taking the customer’s perspective.  
... *Koto-zukuri* (Business)
- 3. Take on challenges for your own growth.  
... *Hito-zukuri* (Education)
- 4. Preserve the environment and contribute to the development of local communities.  
... *Machi-zukuri* (CSR)
- 5. Have dreams and share them.  
... *Michi-zukuri* (Creation of the future)

Our Code of Conduct: Six Commitments

- 1. Working for Customers' *Kando*
- 2. Fair Corporate Activities
- 3. Proper Information Disclosure and Communication with Society
- 4. Respect for Human Rights and Creation of a Good Working Environment
- 5. Environmental Protection and Proactive Social Contribution Activities
- 6. Proper Management of Company Assets and Information

CONTENTS	Section 1	Section 2	Section 3	Section 4	Section 5
<p><b>Editorial Policy</b> The Nippon Signal Group publishes annual integrated reports (Nippon Signal reports) for its customers, shareholders, investors, and other stakeholders to facilitate understanding of the Group's efforts to help resolve social issues and increase corporate value through its business activities. In preparing these reports, the International Integrated Reporting Framework of the International Integrated Reporting Council and the <i>Guidance for Collaborative Value Creation</i> released by the Japanese Ministry of Economy, Trade and Industry were referenced in order to ensure ease of understanding with regard to the value creation stories arising from our business model and the strengths that underpin the Group's competitiveness.</p> <p><i>Nippon Signal Report 2019</i> covers the “Evolution 100” long-term management plan and the 2021 medium-term management plan that were launched in the fiscal year ending March 31, 2020, to paint a picture of Nippon Signal's vision, its management strategies for creating value, and the operating foundations that support these efforts.</p> <p><b>Note on Forward-Looking Statements</b> <i>Nippon Signal Report 2019</i> contains statements on the future plans, forecasts, and prospects of the Nippon Signal Group. They reflect the predictions made by us and are based on the information available at the time this report was published. Please note that they may differ from the actual results due to the progress and circumstances surrounding future business activities.</p>	<p><b>Vision of the Nippon Signal Group</b></p> <ul style="list-style-type: none"><li>2   Nippon Signal's History of Innovation</li><li>4   The Nippon Signal Group's Value Creation Story</li><li>6   Long-Term Management Plan Evolution 100</li></ul>	<p><b>Management Strategy for Value Creation</b></p> <ul style="list-style-type: none"><li>8   To Our Stakeholders</li><li>14   New Domains of Evolution 100</li></ul>	<p><b>Business Activities</b></p> <ul style="list-style-type: none"><li>16   O&amp;M Solutions</li><li>18   Total Mobility</li><li>20   Smart Cities</li><li>22   Security &amp; Sensing</li><li>24   Global</li></ul>	<p><b>Foundation Supporting Our Business Activities</b></p> <ul style="list-style-type: none"><li>26   Research and Development</li><li>28   Environment and Quality</li><li>31   Social Contributions</li><li>32   Human Resource Strategies and Development</li><li>34   Corporate Governance</li><li>40   Corporate Executives</li></ul>	<p><b>Data Section</b></p> <ul style="list-style-type: none"><li>42   Financial Review</li><li>46   Financial and Non-Financial Highlights</li><li>48   Corporate Data</li><li>49   Global Network</li></ul> <p>Scope of Report Nippon Signal Co., Ltd. and the 13 consolidated affiliates *The report also includes information on non-consolidated affiliates.</p> <p>Report Period Fiscal year ended March 31, 2019 (from April 1, 2018 to March 31, 2019) *The report covers some activities that fall outside this period.</p>





# Nippon Signal's History of Innovation



1928–1950s

## Foundation of Nippon Signal and Modernization of Railway Signals

The Railway Nationalization Act, promulgated in 1906, nationalized major thoroughfares throughout Japan, and transportation demand saw a sharp spike thereafter. Nippon Signal was established via a merger of three companies and was tasked with modernizing and realizing domestic production of railway signals.

- 1929** A technical collaboration agreement with General Railway Signal Company of the United States is concluded with the aim of achieving domestic production of world-leading signal equipment.
- 1931** Made-in-Japan traffic signal equipment is produced and installed at the Nihonbashi, Kurehabashi, and Sakurabashi intersections.
- 1958** Production of parking meters commences.



1960s–1980s

## Evolution of Electronics Technologies and Start of New, Forward-Looking Businesses

The opening of the Shinkansen marked the beginning of a new era, and Nippon Signal's electronics technologies proceeded to evolve in the centralized traffic control (CTC) and automatic train control (ATC) systems used for the Shinkansen. We contributed to the development of Japan's transportation infrastructure by creating various new products geared toward the needs projected to arise in the future as post-Shinkansen businesses are developed.

- 1963** Production of Pasca 205 miniature commercial calculator commences.
- 1964** CTC and ATC systems produced by Nippon Signal are adopted for use on the segment of the Tokaido Shinkansen Line connecting Tokyo Station and Shin-Osaka Station.
- 1970** Production of PARK-LOC® system commences.
- 1972** Production of Japan's first comprehensive automated ticket gate system commences and this system is installed for use on the segment of the Sapporo Municipal Subway connecting Kita-Nijuyo-Jo Station and Makomanai Station.
- 1984** An automatic boarding control system for aircraft is developed.



## Pursuit of New Pinnacles of Speed, Safety, Accuracy, Volume, and Comfort

Nippon Signal's history of innovation is a chronicle of its ongoing quest to achieve new pinnacles of speed, safety, accuracy, volume, and comfort. It would not be an exaggeration to say that the history of Nippon Signal is the history of Japan's transportation signals. The commitment driving us forward on this quest is the unchanging DNA of Nippon Signal that has been passed down from our founding until today.



1990s–2010s

## Technological Progress and Network Business Development

The transition from analog technologies to digital technologies and from hardware to software enable Nippon Signal to acquire technologies for realizing high-speed processing of massive quantities of data. With these technologies, we contribute to the dense, ontime operation, complex inter-operable facility to support the mobility of 40 million people living and working in the Tokyo metropolitan area.

- 1998** Production of the Eco Scan® microelectromechanical system optical scanner commences.
- 2003** The Visionary Business Center is established to facilitate the creation of new products and new businesses.
- 2007** Reciprocal use of common IC cards (Suica and PASMO) commences, and Nippon Signal performs upgrades to all automatic passenger gates.
- 2009** The Overseas Division is established to boost competitiveness in overseas markets.



2011~

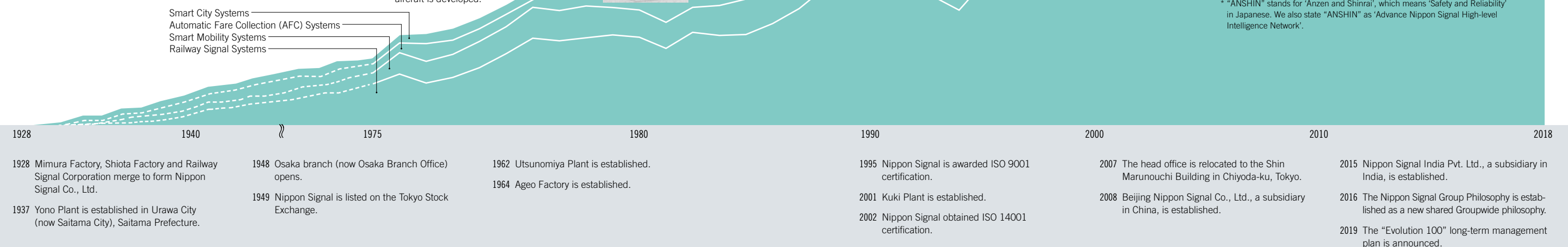
## Acceleration of Global Expansion and Start of New Long-Term Management Plan

Leveraging the technological prowess it cultivated in Japan, Nippon Signal accelerates global expansion efforts centered on Asian and other emerging countries. In these efforts, we focus on the development of systems compatible with the Mobility as a Service (MaaS) revolution and new digital transformation.

- 2011** The SPARCS simple-structure and high-performance ATC by radio communication system is developed and put into use on the Beijing Subway Line 15.
- 2017** The ANSHIN\* Center is established to provide IoT platform base functions.
- 2017** SPARCS is installed on the Delhi Metro Line 8 (Magenta Line).
- 2018** The CLINABO® automatic floor cleaning robot is developed.
- 2019** Nippon Signal participates in verification tests and projects related to the provision of signal information to self-driving vehicles.



\* "ANSHIN" stands for 'Anzen and Shinrai', which means 'Safety and Reliability' in Japanese. We also state "ANSHIN" as 'Advance Nippon Signal High-level Intelligence Network'.

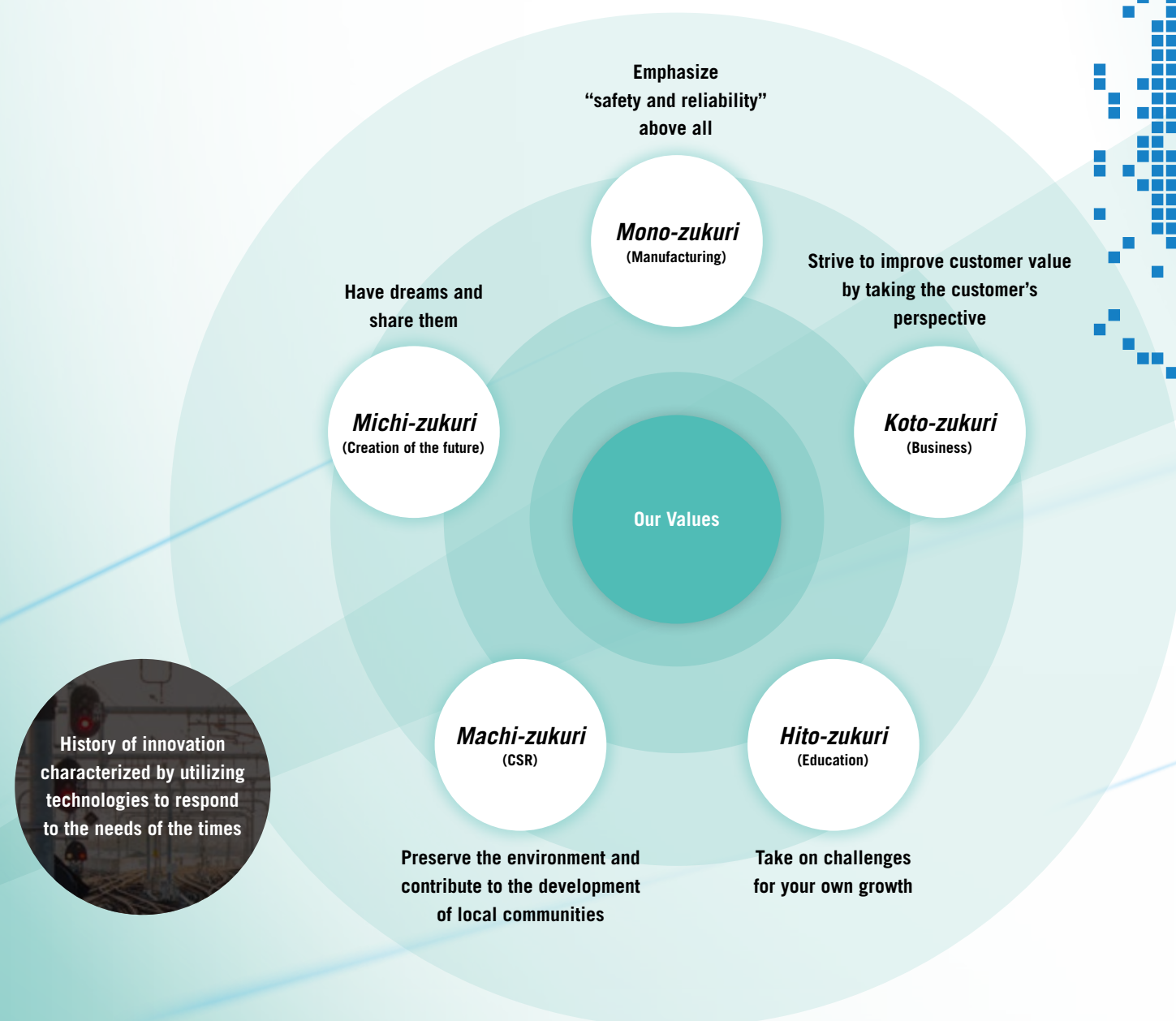




# The Nippon Signal Group's Value Creation Story

The Nippon Signal Group's value creation story is the story of incorporating the Nippon Signal Group Philosophy into our business activities as we seek to create a society in which people around the world can live safely and comfortably.

Safety and reliability have continued to form the bedrock of the Group's operations since the time of its founding. This commitment has not changed as we have continued to challenge ourselves to accomplish the goals of the long-term management plan, our roadmap for achieving sustainable growth in response to the changing times, and to thereby create new value.



**Our Mission**

We help realize a more secure and comfortable society through superior technologies that provide safety and reliability.

## EVOLUTION 100

— Long-Term Management Plan —

A provider that supports infrastructure evolution with safe and comfortable solutions

*Safety with a smile*

### Contributions to the SDGs through the Long-Term Management Plan

Social contributions and disaster relief through products and services	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Promotion of social welfare	3 GOOD HEALTH AND WELL-BEING
Support for high-quality education and cultural activities		4 QUALITY EDUCATION		Creation of rewarding workplaces that are accepting of diversity	8 DECENT WORK AND ECONOMIC GROWTH
Environmental preservation		15 LIFE ON LAND		Active global partnership	17 PARTNERSHIPS FOR THE GOALS
Consideration for environmental impacts		13 CLIMATE ACTION			



## Long-Term Management Plan

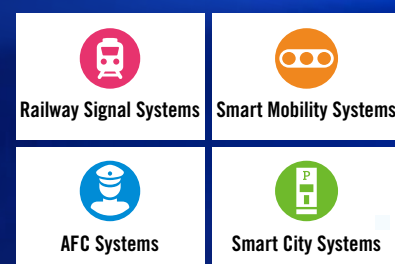
# EVOLUTION 100

The “Evolution 100” long-term management plan embodies our desire for the Nippon Signal Group to undergo a substantial transformation (evolution) by adapting to the rapidly changing operating environment. The operating environment is currently changing at a dizzying speed as indicated by intensification of inter-industry product development competition spurred by technological innovation and by rapid globalization. In this environment, it will be crucial for the Group to transform its business structure in order to respond to such unprecedented changes.

Nippon Signal will celebrate its centennial anniversary in 2028, 10 years from now. As we approach this milestone, we will seek to help resolve social issues in Japan and overseas by supporting infrastructure evolution with safe and comfortable solutions. We hope that, through these efforts, Nippon Signal will become an entity deemed necessary by people worldwide.

Acquisition of new technologies to develop and expand technological platforms

### Current Business Domain



Adaption of business in response to operating environment changes

### Megatrends Projected Leading Up to 2030

<b>Economic</b>	Asia achieving central position in the global economy, population growth in Asia and Africa, expansion of the railway market, aging of populations, emergence of sharing economies
<b>Domestic</b>	Population declines, labor shortages, national finance issues, aging social infrastructure, declines in outlying cities, promotion of Society 5.0 concept
<b>Governmental and Social</b>	Progress of globalization, trend toward protectionism, growing severity of global environmental issues, promotion of the Sustainable Development Goals
<b>Technological</b>	Progress in autonomous driving, robotics, digitization, artificial intelligence (AI), Internet of Things (IoT), cyber security technologies

## O&M\* Solutions

Nippon Signal will utilize IoT and AI technologies to create new businesses in the areas of preventative maintenance, labor saving, disaster prevention and impact reduction, off-site incident response, and new service development.

\*O&M: Operation & Maintenance

## Total Mobility

Based on the concept of optimal mobility control, Nippon Signal provides solutions for managing the operation of and seamlessly coordinating railways, automobiles, and various other forms of mobility.

## Smart Cities

We are broadening the scope of our operations from train stations, an area of strength, to include cities as we deliver a wide range of solutions for addressing diverse needs in the smart payment and other fields.

## Future Business Domains

## Security & Sensing

Nippon Signal offers sensing technologies and security and other solutions for infrastructure applications.

## Global

Nippon Signal provides solutions for realizing safe and smooth transportation to support the urbanization trends accompanying economic development in Asian and other emerging countries.



# To Our Stakeholders



**Yohei Furuhashi**  
Chairman & CEO

**Hidehiko Tsukamoto**  
President & COO

## Transformation into a One-Stop Solutions Provider Supporting Infrastructure Evolution

### History of Supporting Safe and Reliable Transportation Spanning 90 Years

Established in 1928, Nippon Signal was tasked with realizing domestic production of and evolving railway signal technologies. Over the 90 years that followed, we have proceeded to create numerous innovations that have defied prior conventions to contribute to the development of transportation infrastructure. For example, we delivered a signal system for the Tokaido Shinkansen that transformed the very concept of mobility for people as well as Japan's first comprehensive automatic fare collection (AFC) system for the Sapporo Municipal Subway. In addition, we developed PARK-LOC® systems that allow for unmanned parking lot operation and fee collection.

Society's evolution from an information society to a super-smart society is driving drastic change in industry and in people's lifestyles. Against this backdrop, Nippon Signal continues to transmit and evolve the safe and reliable technologies it has developed thus far in its pursuit of further growth.

### Successes and Challenges of Vision-2020 3E Long-Term Management Plan

Nippon Signal aspires to become a sustainably growing company suited to a global society. Slated to conclude with the fiscal year ending March 31, 2021, the Vision-2020 3E long-term management plan has been guiding us in this pursuit. In addition, we have formulated and implemented three medium-term management plans that put three strategic scenarios to facilitate the accomplishment of Vision-2020 3E.

The 2014 medium-term management plan, which covered the four-year period spanning the fiscal years ended March 31, 2016 to 2019, was centered around the two themes of "adapting to the changing trends of the times" and "acceleration of business growth." Under this plan, we sought to become a company relied on by customers all around the world through the provision of valuable products and services and to grow into a leading company that responds to needs for transportation infrastructure both in Japan and other countries as we create innovation in the mature domestic market.

Vision-2020 3E produced numerous successes in Japan and overseas. Sales promotions of signal and AFC systems moved forward in Asian and other emerging countries, and we were able to achieve increases in orders for the SPARCS simple-structure and high-performance ATC by radio communication system, which was the target of special sales activities as a strategic product. These sales activities drove the rapid growth of our international businesses, which saw net sales rise from ¥1.0 billion in the fiscal year ended March 31, 2009, to more than ¥10.0 billion in the fiscal year ended March 31, 2019. In Japan, meanwhile, efforts to create new, forward-looking business centered on cutting-edge technologies led to the commercialization of the 3D Laser Ranging Image Sensor.

As for performance, we were able to escape from the turmoil that ensued from the 2008 financial crisis, which struck shortly after the formulation of Vision-2020 3E, and from the Great East Japan Earthquake to achieve an upturn in performance.

Looking ahead, we have identified three tasks that will need to be addressed if Nippon Signal is to achieve further growth. Specifically, we will need to (1) step up business development efforts in response to rapid globalization and to the evolution of the Internet of Things (IoT), big data, artificial intelligence (AI), and other digital technologies; (2) transform ourselves into a one-stop solutions provider that creates new value through the provision of services and solutions; and (3) establish international business foundations that encompass Group companies.

## To Our Stakeholders

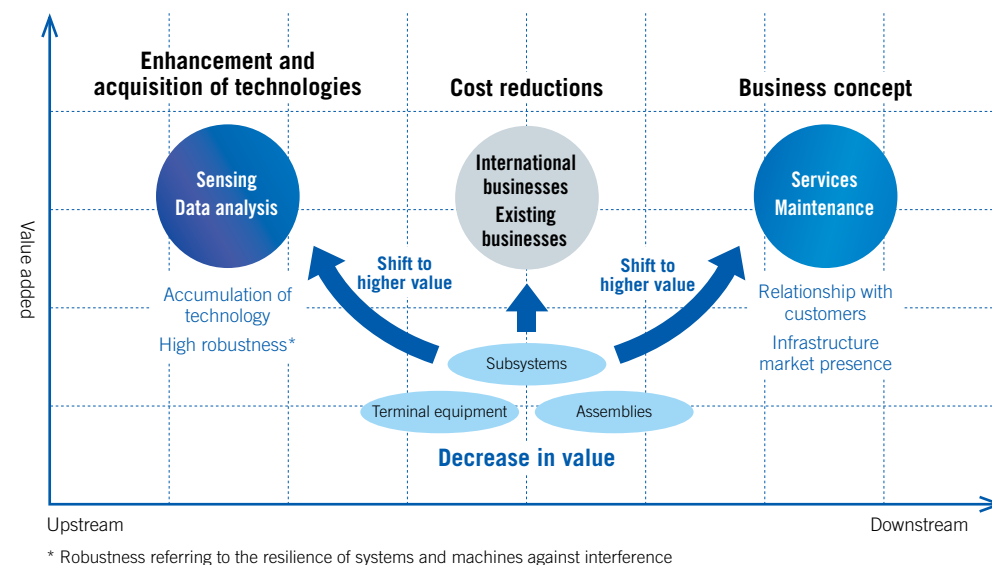
### “Evolution 100” Long-Term Management Plan Leading up to Centennial Anniversary

Nippon Signal launched its new “Evolution 100” long-term management plan in the fiscal year ending March 31, 2020. The title “Evolution 100” is symbolic of our desire for the Nippon Signal Group to undergo a massive transformation (evolution) by adapting to the rapidly changing operating environment to carry it to its centennial anniversary in 2028 and throughout the century to follow.

Reflecting the global economic, domestic, governmental and social, and technological megatrends projected going forward, “Evolution 100” defined our vision for Nippon Signal 10 years from now as “a provider that supports infrastructure evolution with safe and comfortable solutions.” To guide us in realizing this vision, we have formulated strategies pertaining to business transformations, business domains, human resources and organizations, and technology development. We are currently faced with a period of great change in which the disruptive innovations born out of technological progress are creating a situation in which conventional industries that cannot adapt will be doomed to extinction. The zeros contained in the title “Evolution 100” represent our intent to rebuild the Company from zero in order to ensure ongoing growth in the highly volatile operating environment. We are thus inspired to pursue unprecedented new businesses that break away from prior conventions.

Nippon Signal is undertaking a massive transformation in its business with the aim of achieving its vision for 10 years from now. We will transition away from a business style of merely selling standalone equipment and supporting individual projects to transform our business into one that provides IoT solutions capitalizing on our strength in data analysis as well as high-value-added general-purpose solutions that respond to the unmet needs of our diverse customers. In this undertaking, we will leverage the competitiveness arising from our strengths in highly robust sensor technologies and our presence in the transportation infrastructure industry. IoT solutions are a central aspect of our business transformation strategies. In this area, we will use IoT technologies to harvest data from customers’ field products and systems. This data will be utilized to create new businesses in the areas of preventative maintenance, labor saving, disaster prevention and impact reduction, and off-site incident response that capitalize on the analytical capabilities backed by our years of experience and expertise. As for high-value-added general-purpose solutions, we look to further refine our business model of developing high-valued-added general-purpose products and modules that respond to the unmet needs of a wide range of customers. This model is propelled forward by the competitiveness arising from our ability to use customer sites of operation in the product development process.

Focus Areas of “Evolution 100” (Smile Curve)



### Initiatives of the 2021 Medium-Term Management Plan

The first phase of the “Evolution 100” long-term management plan, which kicked off in the fiscal year ending March 31, 2020, will be shaped by the 2021 medium-term management plan, the first plan of the period of “Evolution 100.” Under the 2021 medium-term management plan, we have positioned the three-year period encompassing the fiscal years ending March 31, 2020 to 2022, as a period for structural reforms to Nippon Signal. During this period, we will implement the following four priority measures to guide efforts to make our business more global and solutions oriented.

#### Priority Measure 1 Create Businesses and Enhance Technological Prowess Preemptively in Response to Change

Nippon Signal intends to step up its global expansion efforts while accelerating new product development and business growth by reorganizing its business and launching an operation and maintenance (O&M) solutions business.

As one facet of our business reorganization, we established the Smart City Systems Division on April 1, 2019. This division will continue to develop existing businesses while also broadening the scope of our operations from train stations to include cities. Also this division will promote the reinforcement of security businesses based on robotics, microelectromechanical systems (sensors), environmental measurement and solutions (ground penetrating radar), and other new technologies.

In addition, the ANSHIN Center, or “ANSHINKAN,” established in 2017, furnishes an IoT platform for realizing condition-based maintenance (CBM),\* a highly anticipated next-generation maintenance approach. This facility will thus pave the way for the launch of our O&M solutions business.

In our international businesses, we will improve profitability by strengthening our business structure and support and management systems.

Our efforts to accelerate new product development and business growth will include developing and expanding our unique technological platform by acquiring new core technologies, such as IoT, robotics, and autonomous driving technologies, to complement existing core technologies, such as sensing, wireless network, and image analysis technologies. Based on this advanced technology platform, we aim to create business models that meet next-generation needs.

\* Condition-based maintenance: An approach toward maintenance based on preventative maintenance principles that entails constant monitoring of the conditions of equipment in operation so that maintenance can be performed only when deemed necessary

#### Priority Measure 2 Realize Competitiveness in Terms of Quality, Cost, and Delivery

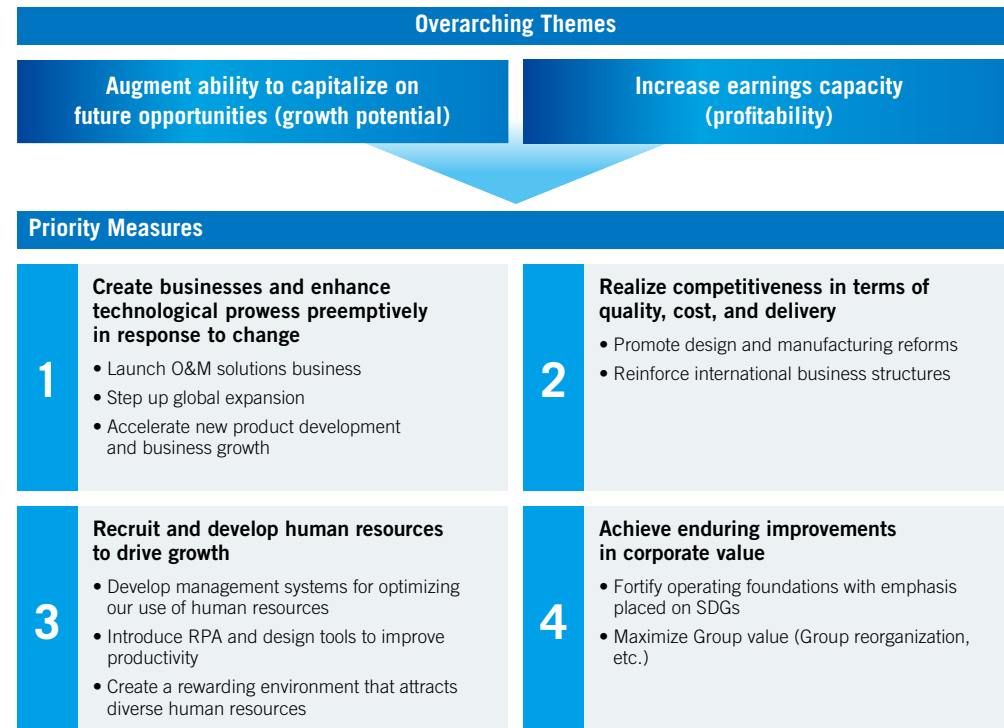
Design and manufacturing reforms and the reinforcement of international business structures are themes of importance for Nippon Signal. On this front, we will look to improve quality through product design standardization and front-loading while heightening efficiency through design automation and the utilization of various tools. One of our goals is to realize global competitiveness in terms of quality, cost, and delivery, and we are fortifying overseas manufacturing and management systems to this end.

#### Priority Measure 3 Recruit and Develop Human Resources to Drive Growth

Nippon Signal intends to utilize human resource recruitment and development programs as well as external human resources to secure the human resources required to achieve the goals of the medium-term management plan and the long-term management plan. To this end, we will develop management systems for optimizing our use of human resources, introduce robotic process automation (RPA) and design tools to improve productivity, and create a rewarding environment that attracts diverse human resources.

## To Our Stakeholders

### Objectives (Framework) of 2021 Medium-Term Management Plan



#### Priority Measure 4 Achieve Enduring Improvements in Corporate Value

Recognizing our responsibility as a social infrastructure company, we practice management while remaining keenly aware of environmental, social, and governance (ESG) concerns as well as of the Sustainable Development Goals (SDGs) adopted at the United Nations General Assembly in 2015. At the same time, we continue to implement Group reorganization to maximize the value of the Nippon Signal Group.

Under the 2021 medium-term management plan, we will have earmarked a total of ¥50.0 billion for M&A activities and other investments to acquire the management resources necessary for growth in Japan and overseas. We thereby aim to ensure that the first step of the “Evolution 100” long-term management plan is a strong one. In addition, business expansion will be pursued by increasing the number of personnel assigned to strategic divisions, by heightening work efficiency, and by conducting capital investment for improving labor productivity. Through these efforts, we will endeavor to augment our ability to capitalize on future opportunities (growth potential) and to increase earnings capacity (profitability). We thereby aim to achieve the targets of consolidated net sales of ¥120 billion, a ratio of overseas sales to total net sales of 14%, an operating margin of 10%, and return on equity of 9% or more in the fiscal year ending March 31, 2022.

#### Consolidated Performance Targets

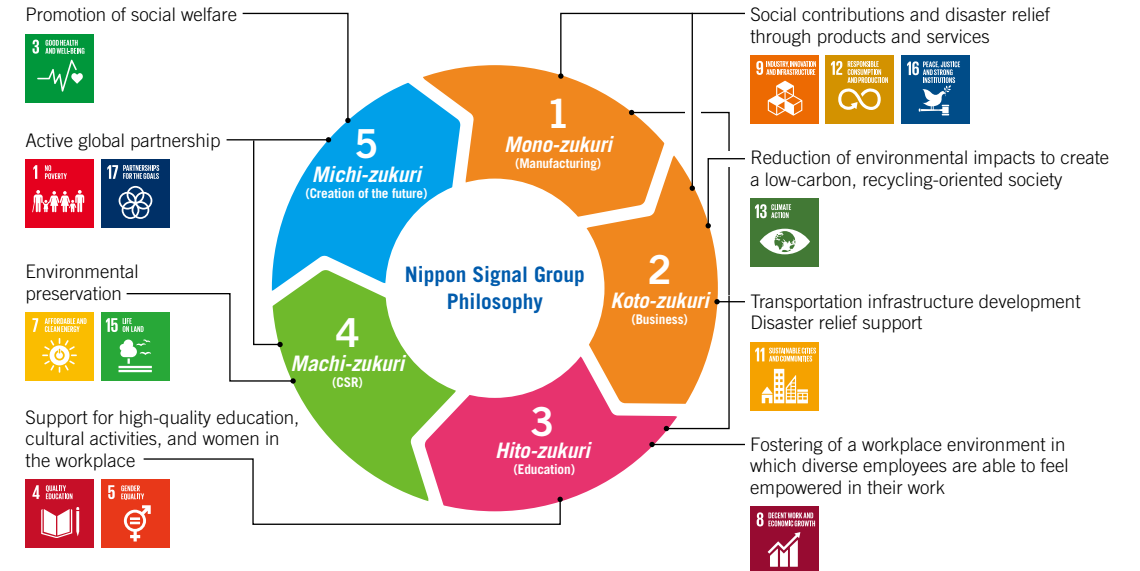
	2019/3	2021 Medium-Term Management Plan		
		2020/3	2021/3	2022/3
Net Sales (¥ billion)	99.8	105.0	110.0	120.0
Overseas Sales Ratio	10.4%	12.0%	13.0%	14.0%
Operating Margin	7.0%	7.0%	8.5%	10.0%
ROE	6.6%	7.0% or more	8.0% or more	9.0% or more
Equity Ratio	59.7%	50%–60%		

## Centennial Anniversary and Beyond

As a provider of transportation infrastructure, a highly public enterprise, Nippon Signal is committed to making ongoing contributions to the realization of a society in which everyone can lead a safe and healthy life. To aid us in these efforts, we have aligned our business activities with the United Nations SDGs and identified those goals among the SDGs that are important to our business activities. Concrete actions are being implemented accordingly. The reduction of environmental impacts, creation of infrastructure that is resilient to natural disasters, and development of safe cities are all themes encapsulated within the United Nations’ 17 goals to transform our world that are the SDGs. We are moving ahead with R&D and product development activities while considering the contributions that Nippon Signal can make with regard to these themes. Furthermore, we actively engage in social contribution activities based on themes such as education, culture, social welfare, and the preservation of the global environment in order to cultivate the partnerships with local communities that are important for sustainable corporate management. Nippon Signal is also focused on fostering a workplace environment in which diverse employees are able to feel empowered in their work based on the recognition that such a workplace helps empower companies and facilitate their growth.

Our mission is stated in the Nippon Signal Group Philosophy as “We help realize a more secure and comfortable society through superior technologies that provide safety and reliability.” By shaping our business activities based on our mission, we will evolve as we move forward toward our centennial anniversary and beyond in order to contribute to the accomplishment of the United Nations SDGs as we seek to realize improvements in both social value and corporate value.

#### The Nippon Signal Group’s Connection with the SDGs





# New Domains of EVOLUTION 100

Under its “Evolution 100” long-term management plan, the Nippon Signal Group will promote new businesses to support the safety and comfortability of infrastructure and thereby become a conglomerate that is deemed necessary by people around the world. We are approaching this task by developing businesses in five new domains with the goal of transforming the Group.



● ANSHINKAN

● Slope failure prediction technologies

● Condition-based maintenance

● Ground penetrating radar

● Automatic floor cleaning robots

● Multi-language guidance

● Services for non-Japanese visitors to Japan

● Escalator congestion detection

● Baggage checks

● Belongings checks

● Station platform sensing

● Detection of obstructions to construction machinery

● Driverless autonomous driving

● Communications-based train control

● Autonomous driving for bus rapid transit systems

● Automated valet parking



# O&M Solutions



Nippon Signal aims to become the No. 1 provider of operation and maintenance (O&M) solutions for transportation infrastructure. Efforts to this end include the development of condition-based maintenance (CBM) solutions that utilize Internet of Things (IoT) and artificial intelligence (AI) technologies and maintenance robots and of solutions that minimize train delays and other impacts of natural disasters.



Social Issues

- ▶ Urgent need to realize high-efficiency, low-labor operations due to difficulty in acquiring and cultivating train drivers, maintenance staff, and other railway workers amid the shrinking workforce
- ▶ Higher expectations for safety and security in response to contemporary needs for addressing increasingly severe natural disasters, etc.

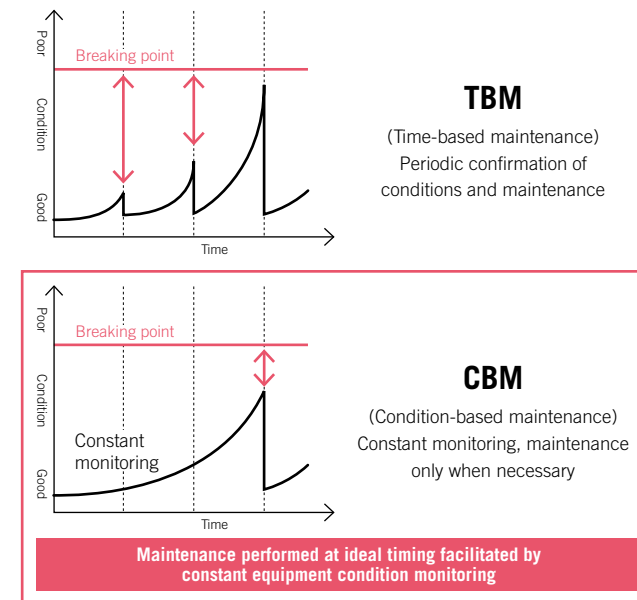
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Characteristics and Strengths of Nippon Signal

- ▶ Highly robust\* sensing technologies indispensable to CBM
- ▶ Exceptional analytical capabilities backed by years of experience and expertise
- ▶ Superior proposal capabilities incorporating customer needs

\* Robustness referring to the resilience of systems and machines against interference

## Transition from TBM to CBM through Use of Real-Time Data



Exterior (top) and interior (bottom) of ANSHIN Center

## Major Initiatives

### Next-Generation CBM

CBM is an approach toward maintenance that has been garnering attention in recent years as the working-age population declines. This approach is based on preventative maintenance principles and entails constant monitoring of the condition of the equipment in operation so that maintenance can be performed only when deemed necessary.

Currently, mainstream maintenance approaches include breakdown maintenance, or performing repairs after equipment breakdowns, and TBM, or conducting maintenance at periodic intervals to prevent breakdowns. Conversely, CBM entails planning and executing repairs and replacements at the ideal timing while continuing to use equipment so long as it can function safely. This next-generation maintenance approach is thus anticipated to contribute to the optimization of work efficiency, staff, and costs.

### Establishment of IoT Platform for Facilitating CBM (ANSHIN Center)

The ANSHIN Center was established in November 2017 to function as an IoT platform for facilitating CBM. Operating data on Nippon Signal products delivered around the world is collected and consolidated at the ANSHIN Center using the sensing technologies that are an area of strength of the Company. The ANSHIN Center remotely monitors and analyzes this data to enable a CBM approach in which maintenance is performed immediately upon detection of an abnormality. In addition, we are also examining methods of utilizing the data collected from the front lines to facilitate a “field in factory”

approach in which frontline conditions are recreated within factories for product verification purposes so that the findings can be incorporated into Nippon Signal's design efforts.

Furthermore, Nippon Signal established the CBM Section in April 2019. This organization will serve to accelerate the development of data mining (analysis) and other core technologies along with the creation of new solutions matched to customer needs.

### Development of Slope Failure Prediction Systems

The terrain of Japan features numerous steep slopes, and there has been a sharp increase in damages to these slopes (bridge wash away, slope failure, installation collapse, etc.) in recent years, largely as a result of heavy rains. Turning its eye to slope failure prediction technologies, Nippon Signal partnered with the Disaster Prevention Research Institute of Kyoto University to develop a system that can predict the place and time of slope failures.

This system utilizes a geographic information system to perform analyses and preemptive observation as necessary in order to monitor the status of slopes. In addition, rainfall forecasts and historic data released by the Japan Meteorological Agency are used to predict the safety of slopes in conjunction with changes in rainfall levels. Furthermore, this system does not require sensors to be installed on-site, thereby decreasing the cost of installing and maintaining sensors.



# Total Mobility



Remote monitoring system for self-driving cars

Nippon Signal supplies train and automobile autonomous driving solutions and an array of other solutions that underpin ideal and safe mobility for all people.



## Social Issues

- ▶ Need to reduce traffic accidents involving senior citizens
- ▶ Desire for support for ideal and safe mobility for people facing mobility barriers\*
- ▶ Demand for measures for addressing labor shortfalls, conserving energy, and reducing CO<sub>2</sub> emissions in railway and logistics services

## Characteristics and Strengths of Nippon Signal

- ▶ Long history of serving the traffic and transportation infrastructure industry
- ▶ Signal information crucial to self-driving automobiles
- ▶ Prior overseas experience in self-driving trains

\* People with impaired vision, individuals using wheelchairs or strollers, senior citizens, etc.



Self-driving bus verification test



Signal information provided via smartphone

## Classifications of Autonomous Train Driving and Driver Configurations

Automation Levels (based on International Electrotechnical Commission and Japanese Industrial Standards Committee standards)

	Drive Configuration
<b>GoA 0</b> On-sight train operation	Driver (and conductor)
<b>GoA 1</b> Manual train operation	Driver (train start-up, door operation, emergency stops, evacuation guidance)
<b>GoA 2</b> Semi-automatic train operation	Non-driver staff in front (emergency stops, evacuation guidance)
<b>GoA 2.5</b> Driverless train operation with train attendant (Not defined in International Electrotechnical Commission and Japanese Industrial Standards Committee standards)	Attendant in position other than front (evacuation guidance)
<b>GoA 3</b> Driverless train operation with train attendant	No attendant
<b>GoA 4</b> Unattended train operation	

Note: GoA (Grade of Automation) levels defined in IEC 62267[1:2009] (JIS E 3802) Railway applications—Automated urban guided transport (AUGT)—Safety requirements

## Major Initiatives

### Autonomous Driving

In April 2018, the Cabinet Office of Japan announced the Cross-Ministerial Strategic Innovation Promotion Program—Innovation of Automated Driving for Universal Services research and development plan. This announcement prompted the Ministry of Internal Affairs and Communications; the Ministry of Economy, Trade and Industry; the National Police Agency; and other government agencies to advance concrete actions based on the themes to which they were assigned.

Nippon Signal is engaged in the development of system engineering technologies that are indispensable to autonomous driving, such as technologies for providing information from road infrastructure and automobile communications and control systems to automobiles.

Moreover, the Company took part in Japan's first verification test of frameworks for supplying signal information to remotely operated self-driving automobiles in March 2019. Conducted together with DeNA Co., Ltd., and AISAN TECHNOLOGY Co., Ltd., this test took place on the Chubu Centrair International Airport island. However, our efforts are not just limited to automobiles; we are also engaged in verification tests of technologies for self-driving buses as seen in our involvement in a test using a dedicated bus rapid transit system road on the Ofunato Line of the bus rapid transit network of East Japan Railway Company.

### Realization of a Society Offering Peace of Mind to All

Nippon Signal is moving forward with the development of a pedestrian information and communication system that provides information on walk signals to pedestrians via their smartphones. The goal of these efforts is to help ensure that people with impaired vision, senior citizens, and other individuals facing mobility barriers can cross intersections safely and with peace of mind.

This system makes it possible to display information on intersections and the status of walk signals en route via smartphones and to communicate signal information via voice or vibrations. The system is scheduled to be introduced throughout Japan during the fiscal year ending March 31, 2020.

We are also developing automated valet parking systems to automate parking, a less appealing aspect of driving.

### Self-Driving (Driverless) Trains

Self-driving (driverless) trains are currently in operation on new transit lines that have measures in place to prevent people from entering train tracks (New Transit Yurikamome Line, among others). These lines must fulfill technological requirements, including using elevated tracks with no level crossings, having platform screen door (PSD) systems, and being equipped with autonomous train driving systems. However, these autonomous driving systems have not been installed on conventional train lines, such as those with level crossings from the perspective of safe and consistent transportation. Meanwhile, railway operators are faced with a pressing need to pursue efficiency improvements and reduce labor requirements in their operations amid a shortage of train drivers. Railway operators are thus examining the possibility of introducing autonomous driving systems that do not require train drivers.

On this front, Nippon Signal is joining hands with railway operators to realize the introduction of autonomous driving systems for conventional train lines that can contribute to substantial improvements in railway productivity. Sensing, information and communications technology (ICT), communications-based train control (CBTC), and other cutting-edge technologies are being employed in this undertaking.



# Smart City Systems



CLINABO® automatic floor cleaning robot



ekibo® station concierge robot



Automatic ticket vending machine delivered to Rinno-ji Temple

Expanding its business domain from the area of strength that is train stations to include cities as a whole, Nippon Signal delivers a wide range of solutions to address the ever more diverse and complex needs of customers pertaining to smart payments, cleaning and guidance robots, and other areas.



## Social Issues

- ▶ Need for low-labor operations in cleaning industry due to worker shortages and rising wages
- ▶ Expectations to improve services for travelers at train stations and airports, provide hospitality, and energize cities in conjunction with increases in non-Japanese visitors to Japan

## Characteristics and Strengths of Nippon Signal

- ▶ Nippon Signal brand respected in the traffic and transportation infrastructure industry
- ▶ Superior user interface know-how cultivated by providing guidance to travelers at train stations seeing large traffic volumes
- ▶ Ability to accommodate payments via IC cards, QR codes, smartphone applications, and other diverse payment methods contributing to MaaS\* models

\* Mobility as a Service: A new concept for mobility that entails using ICT to manage transportation methods via cloud technology so that all mobility (transportation) methods aside from personally owned cars can be viewed as a single service and connected seamlessly regardless of operator and of whether or not these methods are public or private

## Major Initiatives

### CLINABO® Automatic Floor Cleaning Robot Solution for Addressing Cleaning Industry Issues

The cleaning industry is suffering from chronic labor shortages and rising wages, making the realization of low-labor operations a top priority. To help address this issue, Nippon Signal has developed the CLINABO® automatic floor cleaning robot. Easy to operate by anyone, these robots can be programmed to automatically clean defined routes just by inputting the route information (100 routes can be registered). Moreover, they feature a slim body (approximately 800 mm) for easy passage through staff entrances. CLINABO® robots are in use in a wide range of locations, including train stations, an area of strength for Nippon Signal, as well as airports and commercial facilities.

### Extensive Lineup Offering Hospitality to Non-Japanese Visitors to Japan in Stations and Cities

According to the Japan National Tourism Organization, the number of non-Japanese visitors to Japan was estimated to total 31,191,900 in 2018, a year-on-year increase of 8.7%, exceeding 30 million for the first time and reaching a new record high for the sixth consecutive year. In light of these figures, Japan is engaged in a nationwide push to transform the country into a tourist location, creating a need for the establishment of infrastructure for supporting inbound travelers to ensure that non-Japanese visitors to Japan can enjoy comfortable and stress-free trips.

Nippon Signal has an extensive lineup of solutions for supporting inbound travelers. For example, we capitalized on the user interface know-how accumulated through the provision of multi-language ticket

vending machines and of guidance to travelers at train stations to develop specialized ticket vending machines for tourist sites that see high visitation from non-Japanese travelers to Japan. These vending machines are compatible with transportation-use IC cards as well as credit cards, winning much praise from customers from abroad.

Another offering for supporting inbound travelers is ekibo®, a robotic concierge developed to help resolve the issues faced by train station customers. With a simple design emphasizing safety, ekibo® guides customers to station exits (the closet exit to facilities surrounding the station), offers information on station facilities, and performs other services through natural, voiced conversations in Japanese or English, all while exuding a sense of hospitality with a charming demeanor.

Taking advantage of the favorable environment created by the Olympic and Paralympic Games Tokyo 2020, Nippon Signal will bolster its lineup of products for supporting inbound travelers and step up sales promotions.





# Security & Sensing



Automatic X-ray baggage checking equipment

Nippon Signal provides solutions for ensuring safety and security in the transportation of people, objects, money, and information based on its sophisticated sensing technologies.



## Social Issues

- ▶ Rising need for platform screen door (PSD) systems to prevent people from falling from platforms or colliding with trains despite installation being impeded by technical issues stemming from inconsistency in doors between trains and cost issues associated with construction for reinforcing or renovating platforms
- ▶ Increased demand for high-level security measures at event sites, theme parks, and other locations driven by global rise in acts of terrorism
- ▶ Growing demand for sensors that can function like the eyes and brains of people to detect people and objects amid the shrinking workforce

## Characteristics and Strengths of Nippon Signal

- ▶ Diverse lineup of products for overcoming technical and cost issues associated with PSD installation
- ▶ High-throughput\* X-ray baggage checking equipment developed with superior detection capabilities
- ▶ 3D Laser Ranging Image Sensor developed to be compatible with various outside-use applications due to resilience to light interference

\* Processing speed or amount of information processed in a given time



Rope elevation-type PSD (Osaka Abenobashi Station)



K-EYEPRO collision avoidance system

## Major Initiatives

### PSDs Ensuring Safety and Security at Station Platforms

PSD systems prevent accidents on train station platforms, such as people falling from platforms or colliding with trains. These doors are progressively being installed at train stations centered on the Tokyo metropolitan area, with 725 stations equipped with these doors in March 2017, a sharp increase from 318 stations in March 2016. However, obstacles to the introduction of these doors exist. For example, conventional PSD systems cannot accommodate trains with different door numbers or positions, and there is a massive cost associated with reinforcing the foundations of platforms that cannot support the weight of these doors.

The rope elevation-type PSDs developed by Nippon Signal can accommodate a wide variety of trains due to their large size. Moreover, this completely new PSD system can be used even when a train's stopping position is not aligned properly, and its light weight places less burden on the platforms, meaning that this system boasts higher levels of safety, durability, and practicality. Meanwhile, our new lightweight platform screen doors adopt a new innovation in the form of pipe door panels to reduce transportation, installation, and reinforcement construction costs.

By mustering its diverse lineup to promote the spread of PSD systems that resolve customer issues, Nippon Signal aims to contribute to increased safety and security on train station platforms.

### World-First Compact Automatic X-Ray Baggage Checking Equipment

Recent years have seen a rise in terrorist attacks aimed at event sites, theme parks, and other so-called soft targets, creating a need for high levels of security at facilities other than airports.

Nippon Signal's automatic X-ray baggage checking equipment is the first in the world to employ cold cathode X-rays, enabling it to realize high levels of resolution while being more compact. In addition, these systems are equipped with a proprietary learning algorithm that allows for automatic detection of dangerous items. The most noteworthy feature of these systems, however, is the high processing speed (high throughput) that makes it possible for inspections and automatic detection to be completed in under three seconds.

We are promoting sales of these systems as a solution for protecting the safety and security of crowd-drawing facilities requiring high levels of security, such as event sites.

### 3D Laser Ranging Image Sensor Seeing Broadening Scope of Application

As the workforce contracts, there has been a growing trend toward the development of unmanned operation technologies (ICT construction machines) in the construction machinery market. Nippon Signal's 3D Laser Ranging Image Sensor has been selected for use in the hydraulic excavators of Kobelco Construction Machinery Co., Ltd., a pioneer in the construction machinery market, to create the world's first collision avoidance system (product name: K-EYEPRO). Our 3D Laser Ranging Image Sensor has also been adopted for use in the emergency braking systems of paving rollers.

Already widely utilized in PSD systems, the scope of application of our 3D Laser Ranging Image Sensor is broadening to include construction and agricultural machinery, as Nippon Signal marches forward on its quest to reduce the number of accidents worldwide to zero.



# Global



Nippon Signal offers solutions for realizing safe and smooth mobility to support the urbanization trends seen in conjunction with economic growth in Asian and other countries.



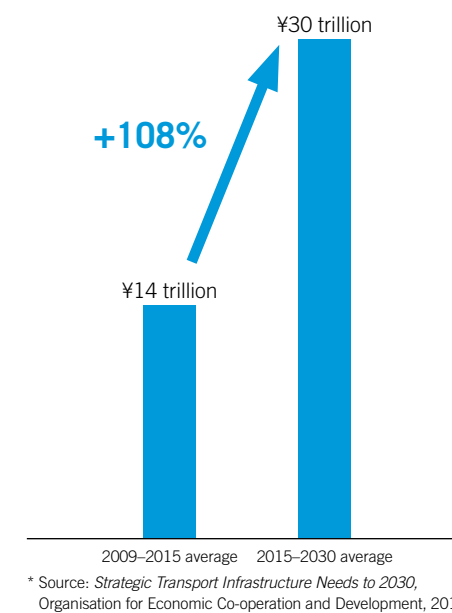
## Social Issues

- ▶ Increasing demand for construction of high-capacity, eco-friendly railways to address traffic congestion and air pollution issues stemming from global population growth and urbanization
- ▶ Proactive implementation of infrastructure system export strategy to capitalize on the robust infrastructure demand seen worldwide as one of the Japanese government's growth strategies

## Characteristics and Strengths of Nippon Signal

- ▶ Reliability backed by extensive track record and superior technological capabilities that have continued to support Japanese urban railways and Shinkansen (bullet train) services, boasting high levels of safety and timeliness
- ▶ One-stop service for railway signal, AFC, and PSD systems
- ▶ Track record of deliveries and stable operation of CBTC systems

## Global Railway Market Scale



◀ Yangon Circular Railway in Myanmar  
▶ Automatic passenger gates for the Jakarta Mass Rapid Transit North-South Line



## Major Initiatives

### Transformation of Global Railway Demand into Driver of Medium-to-Long-Term Growth

Demand in the global transportation infrastructure market is expected to amount to ¥65 trillion on average over the period from 2016 to 2030, of which demand in the railway market will be around ¥30 trillion on average, more than twice the average seen over the period from 2009 to 2015. Against this backdrop, the Japanese government is moving forward with a nationwide effort to export infrastructure systems as part of its growth strategies.

Nippon Signal too is leveraging the safe and reliable technologies it has cultivated over years of operation in Japan to take advantage of the robust infrastructure demand seen across the globe and to reinforce its foundations for generating earnings over the medium-to-long term.

### Globally Boasted Status as One-Stop Solutions Provider

One of Nippon Signal's greatest strengths is its ability to provide a vast lineup of solutions on a one-stop basis. These solutions range from signal systems to automatic passenger gates and other automatic fare collection (AFC) systems for automating station work and PSD systems. Leveraging these strengths, in December 2018 the Company was able to receive a comprehensive order from Larsen & Toubro Limited of India for signal, AFC, and PSD systems for use on the Dhaka Metro Rail Line-6.

### Nippon Signal's SPARCS CBTC System

CBTC systems, which utilize wireless communications to control trains, are being adopted around the world.

Nippon Signal's SPARCS (simple-structure and high-performance ATC by radio communication system) CBTC system is a proprietary developed next-generation train control system that uses wireless communications to continuously detect and control the location of trains. As this system does not need track circuits, it is able to reduce the space between trains to realize highly dense railway operation. Moreover, SPARCS requires significantly less ground equipment, meaning that less labor is required to perform maintenance and overall costs are lower.

SPARCS has been in use on Beijing Subway Line 15 in China since December 2011, on Delhi Metro Line 8 in India since December 2017, and on the Jakarta Mass Rapid Transit North-South Line in Indonesia since March 2019. The experience and track record cultivated through these projects is being utilized as we accelerate efforts to deploy the SPARCS system across the globe.



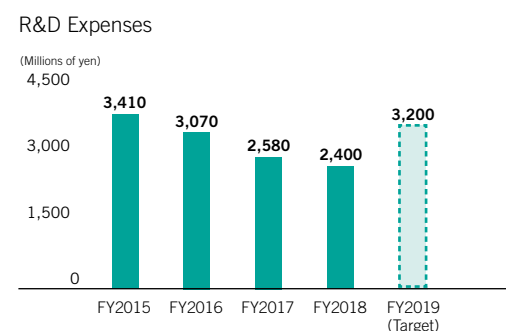
# Research and Development

Proud to be supporting social infrastructure, Nippon Signal is accelerating its technological innovation and globalization initiatives.

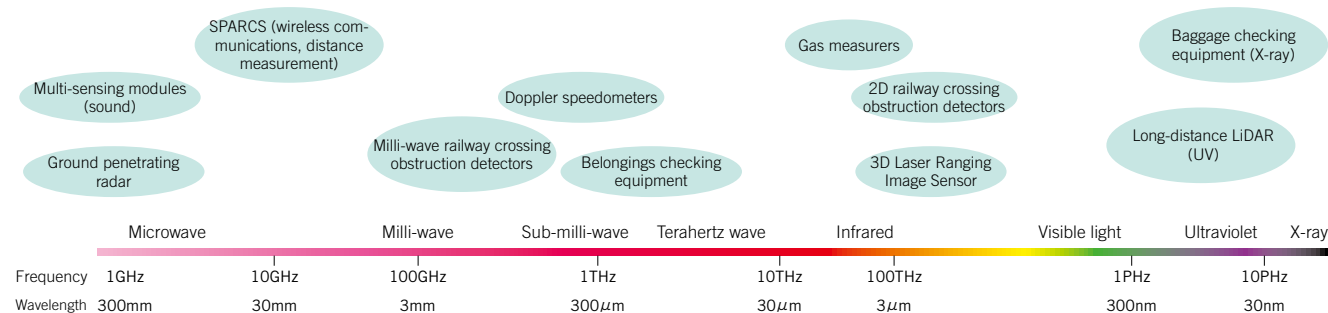
## Basic Policy

The mission of Nippon Signal's R&D divisions has been defined as supporting ongoing business growth leading up to 2028 through the acquisition and development of top-quality technologies that are compatible with ever more sophisticated and complicated technologies.

Sensing, wireless, and network technologies that interweave electromagnetic waves have been positioned as shared foundational technologies for the Company, which we will utilize to create various new products for contributing to the resolution of social issues.



## Sensing, Wireless, and Network Technologies That Interweave Electromagnetic Waves



## Deployment of Core Technologies

Nippon Signal is expanding, enhancing, and acquiring foundational technologies to accomplish the goals of "Evolution 100."



## COLUMN Chronicle of Commercialization of 3D Laser Ranging Image Sensor

We faced various issues with regard to the MEMS\* scanner-equipped 3D Laser Ranging Image Sensor, such as the acquisition of miniaturization and mass production technologies. However, we were able to overcome these issues through an ongoing process of prototyping and refinement fueled by the staff's desire to commercialize this product. As a result, the 3D Laser Ranging Image Sensor is now a mainstay product boasting aggregate sales of more than 20,000 units.

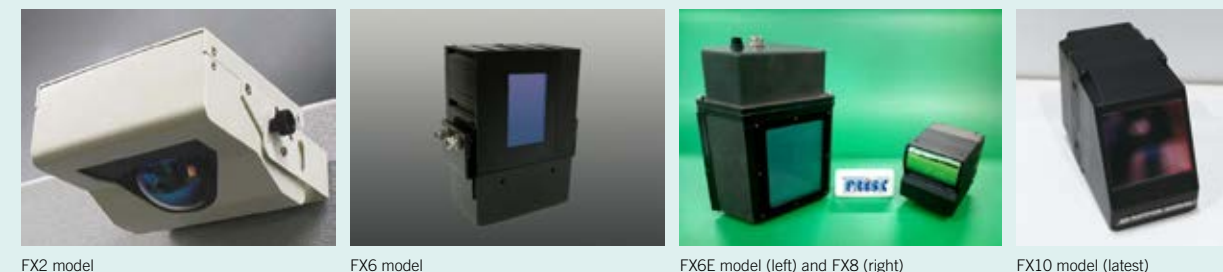
\* Microelectromechanical system: A micro system that combines electricity and machinery and is created based on fine processing technologies that apply semiconductor manufacturing technologies



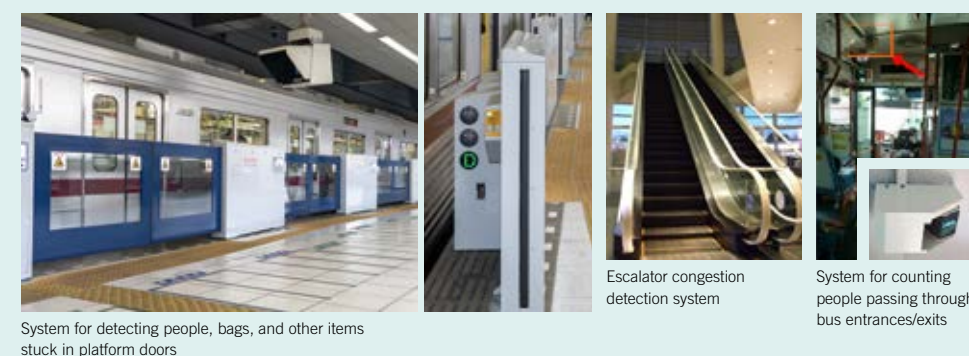
## Development Story of 3D Laser Ranging Image Sensor

Nippon Signal's 3D Laser Ranging Image Sensor is not impacted by light interference, making it applicable for a wide range of indoor and outdoor uses.

We are promoting this device with an eye to application in the construction and agricultural machinery fields (see page 23) as well as in future growth fields, such as autonomous driving and security.



## Example Applications of 3D Laser Ranging Image Sensor



## Intellectual Property Strategy

The operating environment is reaching a major turning point characterized by growing global expansion, making intellectual property increasingly more important. Nippon Signal is instituting aggressive patent strategies by promoting an IP landscape\* approach that links management and business strategies.

\* IP landscape: A portmanteau combining the words intellectual property (IP) and landscape, referring to a new approach toward developing and instituting management and business strategies utilizing intellectual property information



# Environment and Quality

Nippon Signal is actively engaged in environmental preservation, quality improvement, and social contribution activities to aid in the sustainable development of society.

## Basic Policy

Our environmental efforts represent the essence of our business activities.



### Environmental Philosophy

Nippon Signal promotes initiatives to protect and improve the environment in an effort to create a better world for everyone and build a more comfortable society through safe and reliable technology.

### Environmental Policy

We provide eco-friendly products and services, and also reduce the environmental impact throughout the product life cycle, from product development to final disposal, to achieve a synergy between business activities and environmental protection efforts.

1. We consider the impact of our business activities on the environment, promoting efforts to conserve resources and energy, reduce waste, and recycle materials while curbing environmental pollution and improving our sustainable environmental management system.
2. We comply with laws, regulations, ordinances, and other agreements related to the environment. We also adhere to our own corporate control standards.
3. We strive to incorporate environmentally conscious technology from the design stage of new product development.
4. We establish specific goals and targets for protecting the environment within achievable technical and financial limits to realize the aims of this environmental policy, and conduct periodic reviews to ensure continued improvement.
5. We have created a document version of this environmental policy to ensure all employees are thoroughly aware of the policy for its implementation and maintenance and to share the policy with the public.

## Environment and Quality Management

We have implemented environmental and quality management systems based on the international standards ISO 14001 and ISO 9001 to effectively promote the provision of high-quality and eco-friendly products and services.

Contributions to the sustainable development of society are pursued by reducing environmental impacts and improving quality from the development phase while implementing ongoing improvements via the PDCA (plan-do-check-act) cycle.

### Environmental and Quality Audits

We regularly implement internal and external audits to verify compliance with, and the effectiveness of, the environmental and quality management systems.

Internal audits: Regularly implemented audits based on audit guidelines

External audits: Annual audits by ISO certification institutions; no cases of nonconformance found in the audit conducted in the fiscal year ended March 31, 2019

### Environmental Risk Management

After the identifying environmental risks posed by the business operations at specific sites, emergency response training is conducted to help us avoid and mitigate risks.

### Environmental Compliance

Information on environmental laws and ordinances is managed and shared, and periodic checks are implemented to confirm compliance. In the fiscal year ended March 31, 2019, there were no legal violations or accidents related to the environment.

## Green Procurement Guidelines

Based on its environmental policy of providing eco-friendly products and services, Nippon Signal enacted the Green Procurement Guidelines in 2005. When purchasing commercially available electric and electronic components or items with designated specifications from manufacturers or suppliers, we select and preferentially procure raw materials and components that are friendly toward the environment while also taking into account quality, price, and delivery date.

In addition, we encourage suppliers to acquire certification for environmental management systems, conduct green procurement, and manage and eliminate the use of regulated chemical substances from the perspective of supply chain management.

The Green Procurement Guidelines are available on our website (Japanese only). <http://www.signal.co.jp/environment/green.html>

## Environment & Quality Education and Improvement of Environmental & Quality Awareness

Nippon Signal conducts regular training for internal environmental and quality auditors to ensure appropriate environmental activities and improve quality management.

We encourage our employees to take the Certification Test for Environment Specialists (Eco Test<sup>\*1</sup>) and acquire rank 3 or higher certification in the Quality Control Examination (QC Exam<sup>\*2</sup>) with the aim of raising their awareness of, and helping them acquire knowledge on, the environment and quality. As of March 31, 2019, more than 78% of employees had passed the Eco Test and more than 73% had acquired rank 3 or higher certification in the QC Exam.

<sup>\*1</sup> Eco Test: A test scheme organized by the Tokyo Chamber of Commerce and Industry through which people aim to acquire knowledge on environmental issues  
<sup>\*2</sup> QC Exam: An examination scheme organized by the Japanese Standards Association through which knowledge on quality management is evaluated

### Kids' ISO 14000 Program

Kids' ISO 14000 Program,<sup>\*3</sup> a program offering hands-on and learning content to at the home, is implemented to provide an opportunity for the families of employees to increase their environmental awareness.

In the fiscal year ended March 31, 2019, the families of six Group employees participated in the program and contributed to the reduction of CO<sub>2</sub> emissions.

<sup>\*3</sup> Kids' ISO 14000 Program: A management education program with the environment as its central theme that was developed by the International Art and Technology Cooperation Organization (ArTech) on a global scale



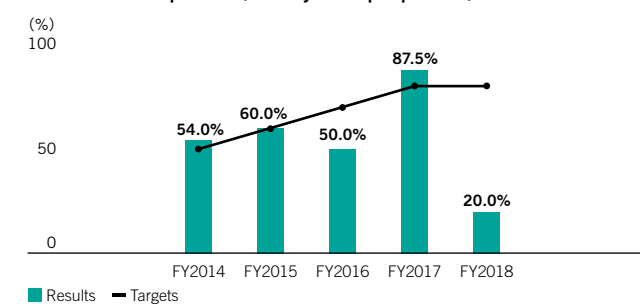
## Environmental Performance

Since the fiscal year ended March 31, 2006, the Nippon Signal Group has continued to formulate environmental action plans, based on which it has pursued reductions in environmental impacts.

Up until now, we have been promoting the 4th Stage Environmental Action Plan, which concluded with the fiscal year ended March 31, 2019.

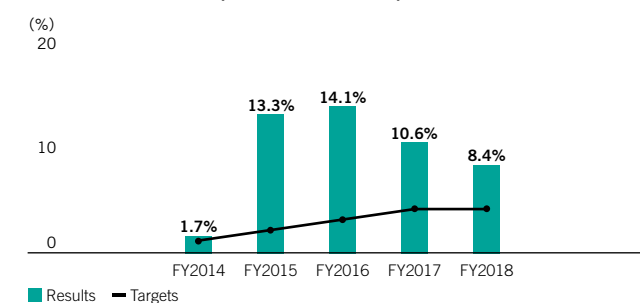
### Development of Eco-Friendly Products

Ratio of eco-label products (to newly developed products)



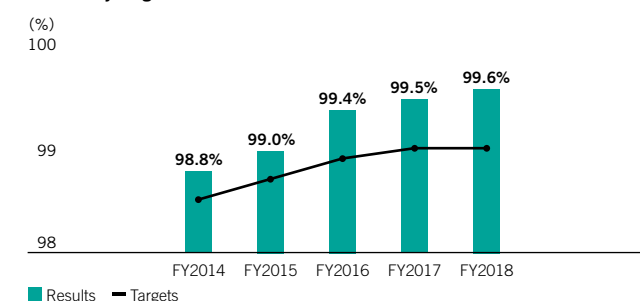
### Prevention of Global Warming

CO<sub>2</sub> emissions reduction (from the FY2013 level)



### Promotion of Zero Emissions

Waste recycling rate



### Contributions to Local Environments

Social contribution activities aimed at environmental preservation

4 activities or more per year at each site (total of 101 activities)

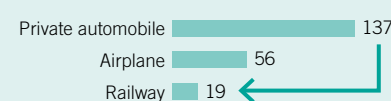
### Reduction of Environmental Impact via Operational Improvements

Departments achieving Environmental Action Plan targets

100%

## COLUMN Eco-Friendly Railways

Transportation by railway produces only one-seventh of the CO<sub>2</sub> emissions that transportation by automobile generates, making railways an eco-friendly form of mobility. Nippon Signal is working to help increase the use of eco-friendly railways by delivering railway signal systems to emerging countries and developing eco-label products.



Railway CO<sub>2</sub> emissions only one-seventh that of automobiles

Comparison of CO<sub>2</sub> emitted to transport one person one kilometer (FY2017)  
 Source: Ministry of Land, Infrastructure, Transport and Tourism



# Environment and Quality

## Reduction of the Environmental Impact from Our Products

### Nippon Signal's Original Eco-Label Products

We rank products by our level of eco-friendliness. Products that meet our internal criteria are approved as eco-label products.

Designed with full consideration for the environment and approved for environmental labeling (type II\*)



\* Type II: Type of self-declared eco-labeling by a company (For details, refer to JIS Q 14021.)

### Examples of Eco-Label Products

#### Railway Signal Systems

##### ▶ Box-Type Dual System ATS Communication Device

###### Product Features

Box-type dual system ATS communication devices receive control signals from ground transmitters to automatically activate brakes and thereby ensure that trains stop properly when approaching a stop signal. Compared to prior devices, the latest offerings use less resources as a result of employing standardized components and fewer screws due to the adoption of unit-based designs while also featuring improved reliability achieved through revisions to components and circuits prone to failure.

###### Development Points



To ensure ease of replacement, we used the same dimensions, with the exception of depth, and connector shapes as prior offerings for the sake of compatibility. In addition, we were able to realize a dual system structure by incorporating all the necessary functionality into a single circuit board.

Lead developer: Keisuke Hashimoto

Weight: 12% reduction  
Size: 8% reduction  
Types/Numbers of screws: 11% reduction  
Use of standardized components: 46% improvement



#### Smart City Systems

##### ▶ Electric Field Communication Tags

###### Product Features

Used for the purpose of touchless IC card recognition, electric field communication tags employ electric field communication technologies for enabling communications through circuits (electric force lines) formed by human bodies, transceivers, and the dielectrics and conductors that exist around them.

Improvements from prior offerings include reduced size through the simplification of the casing, lower costs through the reduction of IC card functions, and extended battery life through the decrease in idle electricity consumption.

###### Development Points



Ideas incorporated into these tags included wider circuits for reducing the size of electrodes and realizing higher efficiency and power supply circuits designed to lower the burden placed on batteries. We were thereby able to realize tags that are more compact and have longer-lasting batteries than the electric field communication card holders that were their predecessors.

Lead developer: Ken Seo

Idle electricity consumption: 75% reduction  
Size: 67% reduction



#### Smart Mobility Systems

##### ▶ Terminal-Mediated Unit

###### Product Features

Terminal-Mediated Unit is a device that transmits and receives information such as signal control orders between traffic control centers signals and other terminal equipment.

While prior offerings required dedicated communication lines, resulting in high expenses, this unit was developed with the purpose of reducing costs by utilizing wide-range ethernet and mobile virtual network operator lines. In addition, this unit does not need lookahead carry unit boards, which are generally required in a number corresponding to the number of communication lines, to reduce the size of the unit as well as the electricity consumed by circuit boards.

###### Development Points



Comprising energy-efficient box computers and routers, Terminal Unit I uses less electricity than prior offerings. It is also half the height of prior offerings as it does not require terminal connection ports for inserting lookahead carry unit boards.

Lead developer: Hayato Shitamura

Electricity consumption: 39% reduction  
Size: 60% reduction



# Social Contributions

As a company involved in the transportation infrastructure business, which is closely linked to the lives of the public, the Nippon Signal Group is highly aware of the importance of coexisting with society and is thus inspired to conduct social contribution activities on a Groupwide basis.

## Basic Policy

Taking advantage of the characteristics of its transportation infrastructure business, the Nippon Signal Group has adopted a basic policy of making ongoing contributions to society to help realize safe and comfortable lives for people in Japan and around the world.

We are engaged in various activities in accordance with this policy. For example, we offer support for the Gold Concert, a music contest for people with disabilities; the Pacific Music Festival, an international educational music festival for fostering young musicians worldwide; and the Japan-Africa Entrepreneur Support Initiative, a project for supporting the ongoing growth of Africa.

## Major Initiatives

### Railway Festival

We have been holding the Railway Festival every year since 2012 at our Kuki Plant for the purpose of communicating the appeal of railways. In 2018, we took steps to deepen the understanding of attendees with regard to the Eco-Rail Mark, which indicates one's efforts to help reduce CO<sub>2</sub> emissions through railway use, while also explaining conditions pertaining to people with visual impairments and the job of guide dogs. A portion of the sales at the Railway Festival was donated to support the Great East Japan Earthquake relief efforts.



### Forest of Nippon Signal

In 2019, the Forest of Nippon Signal was established in Tochigi Prefecture, which houses our Utsunomiya Plant, in order to facilitate forestry activities. The first year after the establishment of this forest saw us hold mountain cherry (*Cerasus jamasakura*) planning events, which drew participation from more than 120 employees and family members.



### Founding Anniversary Donations

We have collected anniversary donations on the date of the anniversary of our founding (February 16) each year since the fiscal year ended March 31, 1994, under a matching gift scheme.\* In the fiscal year ended March 31, 2019, these donations were used to provide Christmas trees to the Saitama Children's Medical Center, which provides high-quality medical services for children in an area where Nippon Signal used to have a factory, and to make disaster relief donations to vocational-training facilities and communities impacted by the heavy rains that struck Japan in July 2018 and by the 2018 Hokkaido Eastern Iburi earthquake.

\* Matching gift scheme: A scheme wherein the Company adds a contribution equivalent to the total amount of donations made by all officers and employees of the Group and donates the sum

Information on Nippon Signal's social contribution activities is available on our website. ➡ <https://www.signal.co.jp/english/environment/csr.html>





# Human Resource Strategies and Development

Nippon Signal is cultivating global human resources capable of acting in accordance with its philosophy of safety and reliability and with a sense of purpose for supporting social infrastructure. These human resources will be indispensable to the creation of new business models and the transition to high-value-added businesses under the “Evolution 100” long-term management plan.

## Basic Policy

The “Evolution 100” long-term management plan calls on Nippon Signal to branch out from manufacturing to business development and from the domestic market to overseas markets.

We aim to evolve the Company to better match its environment in order to accomplish these objectives. To this end, we furnish workplace environments that allow diverse human resources to adapt to changes in globalization trends and the business environment and to constantly undertake challenging initiatives.

Specific strategies include clearly laying out individual career plans by better tracking human resources. We will also enhance training programs to endow junior employees with a propensity for autonomous thought and action.

In addition, we will bolster training programs for cultivating leaders that can drive the transition to global and solutions-oriented businesses to complement conventional level-specific basic education programs. In this manner, we will fortify the human resource development platform that will support the accomplishment of the goals of “Evolution 100” and of future growth.

Furthermore, Nippon Signal is implementing work style reforms through the use of IT and AI to improve productivity and through the enhancement of systems for supporting diverse work styles matched to employee life stages. We thereby aim to foster an energizing workplace environment in which employees are empowered and able to adopt work styles that match their individual life plans.

## Major Initiatives

### Transmission of DNA of Safety and Reliability

#### Case Study-Based Education

Nippon Signal is dedicated to transmitting the DNA of safety and reliability defined in the Nippon Signal Group Philosophy. As one facet of these efforts, we instituted case study-based education programs at the ANSHIN Center, or “ANSHINKAN,” which houses our research and education functions, in the fiscal year ended March 31, 2019.

These programs included lectures from veteran technicians, explanations of case studies that illustrate non-conformity examples using actual articles, and inter-division group discussions. By instilling employees with knowledge pertaining to crucial safety and reliability foundational technologies through these programs, we hope to enable employees to better reflect Nippon Signal’s influence on society in their work. A total of 14 sessions were held over the period from November 2018 to March 2019, drawing participation by approximately 480 employees. We will continue to implement these programs with the target of having all employees participate by March 31, 2020.

#### Participation in National Skills Competition

Nippon Signal is proactive in its efforts to transmit the technical skills that form the basis for its manufacturing activities. To this end, we have employees participate in the National Skills Competition arranged by the Japan Vocational Ability Development Association,

### Projected Operating Environment Changes

- ▶ Shift from manufacturing to business development
- ▶ Broadening scope of operations to include overseas markets
- ▶ Rise in overseas bases and increasingly multicultural employee bases
- ▶ Growing amount of work in digitization and AI fields
- ▶ Promotion of IT-powered work styles unbound by place or time

### Vision for Nippon Signal

- ▶ Team of autonomous employees each able to resolve issues on their own
- ▶ Venue that is able to swiftly create results by naturally attracting global-minded individuals with high-level expertise
- ▶ Workplace environment encouraging ongoing skill improvement and ambitious action
- ▶ Permeation of corporate philosophy and culture throughout employee base and transmission of these principles to future generations



Japan’s foremost competition for testing the technical skill levels of young engineers. We also continue to hold the NS Skills Contest with the goal of developing globally competitive instructors. Held in 2018, the sixth iteration of this contest tested the design and manufacturing technology skills of 16 participants through competitions utilizing announcement equipment. In addition, the NS Academy for the National Skills Competition program was launched in the fiscal year ended March 31, 2018, as part of our acceleration of initiatives for helping trainees acquire knowledge and techniques related to circuit design, circuit board design, program design, and other areas. As a result of these efforts, three Nippon Signal employees were able to participate in the electrical equipment assembly trade category of the 2018 National Skills Competition. [1](#) [2](#) [3](#)

### Empowerment of Female Employees

#### Caréer Café Forums for Female Employees

In the fiscal year ended March 31, 2019, Nippon Signal began organizing Caréer Café forums for female employees. With female Directors and Audit & Supervisory Board Members acting as lecturers, these forums are designed to provide female employees with opportunities to make new discoveries regarding career development and work-life balance. A total of three such forums have been held to date at our head office, Kuki Plant, and Utsunomiya Plant, seeing participation by an aggregate total of 70 female employees of various ages from a wide variety of workplaces. One participant stated that “the forum made me more aware of the importance of the ability to enact one’s decisions and of building career and personal networks.” [4](#) [5](#)

#### Rikochare

Nippon Signal is engaged in initiatives for supporting the female engineers that will shape the future of the industry. As one facet of these efforts, we have been participating in the *Riko Challenge (Rikochare)* initiative since the fiscal year ended March 31, 2017. This initiative is spearheaded by the Gender Equality Bureau of the Cabinet Office, the Ministry of Education, Culture, Sports, Science and Technology, and Keidanren for the purpose of promoting interest in engineering fields among female students. In addition, we held the 2018 Nippon Signal Manufacturing Challenge event at the Kuki Plant in August 2018. This event was geared toward communicating the appeal of working in engineering fields to female junior high school, senior high school, and university students through hands-on manufacturing experience and exchanges with women actually active in these fields. [6](#)

### Enhancement of Global Partnerships

#### African Business Education Initiative

Nippon Signal participates in the African Business Education Initiative for Youth, instituting an internship program for students from Africa to support strong, ongoing economic growth in Africa. In the fiscal year ended March 31, 2019, nine students from seven African countries were invited to take part in this program on September 27 and 28, 2018. Exchanges were held with these students through the program, which included presentations on Nippon Signal’s international businesses and the transportation infrastructure of different countries. Students also took part in hands-on activities on the factory floors of the Kuki Plant and the Utsunomiya Plant. Going forward, we will continue efforts to support human resource development in African countries and to raise awareness regarding Japan’s superb technologies and companies. [7](#)







# Corporate Governance

Our Group has been working to improve the transparency of its decision-making process and construct a corporate governance system that properly incorporates supervisory and check functions.

## Basic Policy

Our Group's basic policy in corporate governance is to conduct management that gives priority to all stakeholders and emphasizes making contributions to society. To genuinely implement this basic policy, our Group will make ongoing management structural reforms that aim to strengthen corporate governance. We will also enhance the management structure so that our Group can respond flexibly and swiftly to changes in the environment surrounding management.

### Corporate Governance System at a Glance (As of June 21, 2019)

Organizational format	Company with Board of Company Auditors
Number of Directors (including Outside Directors)	9  3 Outside Directors
Number of Audit & Supervisory Board Members (including Outside Audit & Supervisory Board Members)	4  3 Outside Audit & Supervisory Board Members
Term of Directors	1 year
Has Executive Officer System	Yes
Advisory body to the Board of Directors	Nomination and Remuneration Advisory Committee
Accounting Auditor	KPMG AZSA LLC

## Corporate Governance Structure

Nippon Signal has instituted an Executive Officer System to accelerate and improve the efficiency of managerial decision-making and to enable the flexible execution of business. Executive Officers make up the Committee of Directors, a venue for discussions and reports on the execution of duties based on short- and medium-term management plans. Executive Officers are also delegated authority for business execution.

In addition, the Company has instituted the Specialist Officer System to appoint officers that contribute to business operations based on their specialized knowledge, technological capabilities, and wealth of business experience in specific fields.

The Company has a total of nine Directors, three, or one-third, of whom are Outside Directors that have also been designated as independent directors as stipulated by the Tokyo Stock Exchange. Outside Directors give comments from an objective perspective at meetings of the Board of Directors as well as other occasions for exchanging information and sharing views.

The Audit & Supervisory Board is made up of four Audit & Supervisory Board Members, three of whom are Outside Audit & Supervisory Board Members that have also been designated as independent auditors as stipulated by the Tokyo Stock Exchange. The Audit & Supervisory Board Members are responsible for providing a check on corporate decision-making through the audit system, which is coordinated with the Internal Audit Department and the Accounting Auditor. Audit & Supervisory Board Members attend not only important internal meetings, such as Board of Directors, Risk Management Committee, and Group Business Planning Committee meetings, but also presentation meetings on employee operational improvements, to ensure and heighten the effectiveness of the audits. The two full-time Audit & Supervisory Board Members hold regular liaison meetings with management divisions and the managers of business segments to audit the specific ways in which operations are executed.

Of the total of 13 Directors and Audit & Supervisory Board Members, six are outside officers that fall under the definition of independent directors and auditors stipulated by the Tokyo Stock Exchange. These six outside officers attend meetings of the Board of Directors to contribute to transparent decision-making by

participating in discussions from an independent standpoint. In addition, the Company has three female officers, two Directors and one Audit & Supervisory Board Member.

There are two procedures for deciding on significant matters regarding the Company: a resolution by the Board of Directors and a request for decision. These procedures are set out in the standards for reference formulated by the Board of Directors.

Regarding the nomination of officers and their remuneration, the Nomination and Remuneration Advisory Committee was established in April 2017 as an advisory body to the Board of Directors. This committee is made up of a majority of Outside Directors to raise the transparency and objectivity of the decision-making process.

We have also set up the Advisory Board, which is an advisory body for Representative Directors. This board consists of outside specialists with advanced technical knowledge on business administration.

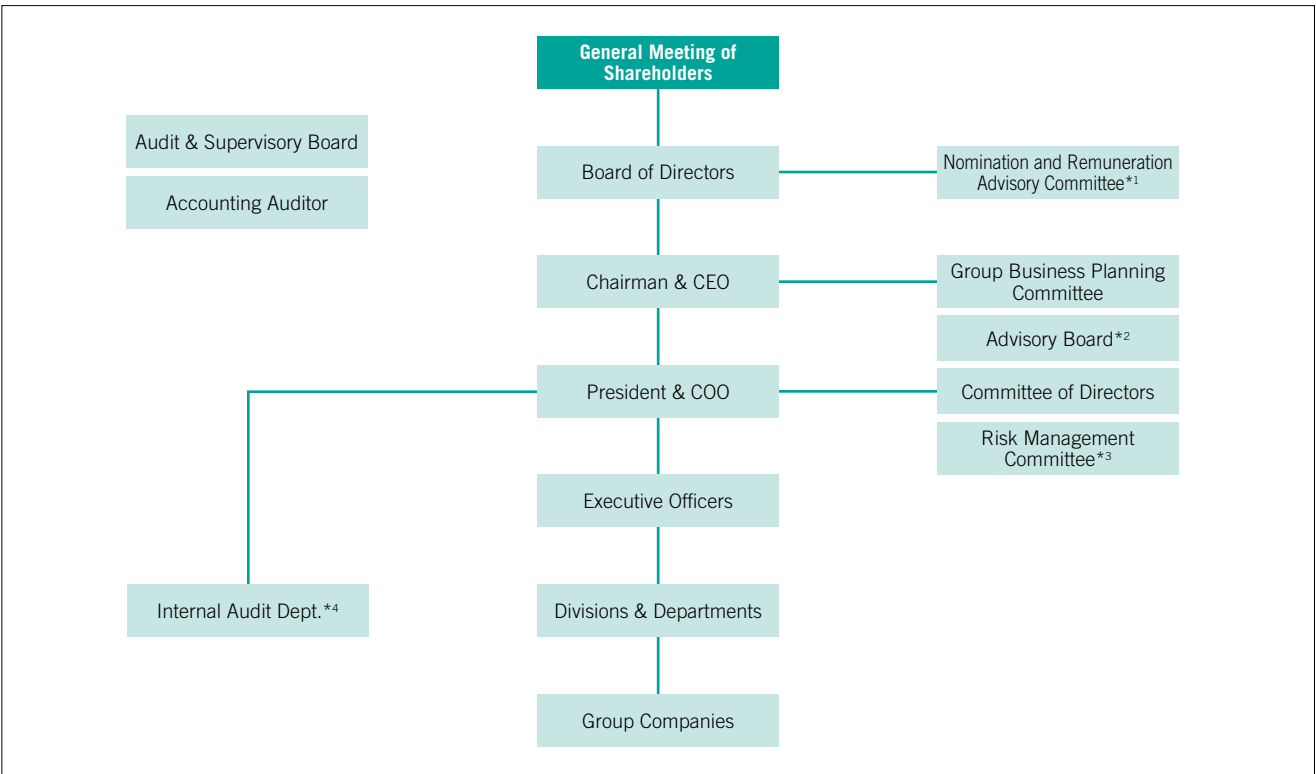
## Election of Outside Directors and Outside Audit & Supervisory Board Members

We hire people with a high level of knowledge and extensive experience as business managers and those with expert knowledge helpful for enhancing corporate governance as Outside Directors and Outside Audit & Supervisory Board Members.

In the election of personnel for these posts, we have drawn up the Standards for Determining the Independence of Outside Officers, to ensure that the independence of Outside Directors and Outside Audit & Supervisory Board Members is determined in an objective manner. As of June 21, 2019, all Outside Officers, a total of six including three Outside Directors and three Outside Audit & Supervisory Board Members, satisfy all the criteria of these standards.

For details about our standards for the independence of Outside Officers, please refer to the Corporate Governance Report (Japanese only):  
➡ <http://www.signal.co.jp/aboutus/governance.html>

### Corporate Governance System



\*1 Nomination and Remuneration Advisory Committee: Serves as an advisory body to the Board of Directors; consists primarily of Outside Directors, who raise the transparency and objectivity of procedures regarding appointment and remuneration of candidates for officers by participating in the decision process

\*2 Advisory Board: Serves as an advisory body to the Representative Directors; consists of outside experts with sophisticated and specialized knowledge on business management who provide advice and suggestions on business management from an elevated perspective

\*3 Risk Management Committee: Controls compliance risks and all other types of risks under the direction of the Board of Directors; chaired by a Representative Director

\*4 Internal Audit Department: Provides assistance with internal management control activities by auditing the management and operation processes; monitors all managerial activities—such as purchasing, sales, and accounting—to provide information based on the monitoring results as well as advice and suggestions on remediation and efficiency improvement

### Evolution of Corporate Governance System Over Past Decade

	2009	2015	2016	2017	2018	2019
Reinforcement of supervisory function	One Outside Director	Outside Directors increased to two			Outside Directors increased to three	
	Two Outside Audit & Supervisory Board Members					Outside Audit & Supervisory Board Members increased to three
Clarification of management responsibility	Two-year terms for Directors			Terms of Directors shortened to one year		
Promotion of Board of Directors diversity	No female officers	Two female officers appointed		Female officers increased to three		
Protection of management decision objectivity and transparency		Advisory Board established				
				Nomination and Remuneration Advisory Committee established		



## Corporate Governance

### Outside Directors

Name	Grounds for Election	Concurrent Post(s)	Number of Board of Directors Meetings Attended
Yoshiteru Yoneyama	Mr. Yoshiteru Yoneyama has ample experience, an impressive track record, and knowledge as a business manager. We have appointed him as an Outside Director in the hope that these qualities will be applied within our business administration, and an effective supervisory function on management will be demonstrated.	<ul style="list-style-type: none"> <li>President and Chief Executive Officer, Fukoku Mutual Life Insurance Company</li> </ul>	13 out of 13 meetings held (100% attendance)
Yasuko Matsumoto	Ms. Yasuko Matsumoto has a great deal of advanced knowledge and experience as a legal expert and provides advice and recommendations on legal compliance and adequacy from a professional point of view. We have elected her as Outside Director in expectation that an effective supervisory function on our business administration will be demonstrated and audit and supervision will be strengthened.	<ul style="list-style-type: none"> <li>Part-time lecturer at the Tokyo University of the Arts</li> </ul>	13 out of 13 meetings held (100% attendance)
Yuriko Inoue	Ms. Yuriko Inoue is an expert on intellectual property rights and has ample experience and knowledge based on her experience of teaching at multiple universities including Hitotsubashi University, where she currently serves. We have elected her as Outside Director in expectation that advice on our business administration will be provided and an effective supervisory function on management will be demonstrated.	<ul style="list-style-type: none"> <li>Professor, Business Law Department, Graduate School of Law, Hitotsubashi University</li> <li>Outside Director, Dai-ichi Life Holdings, Inc.</li> </ul>	10 out of 10 meetings held (100% attendance) Note: Attendance after appointment on June 22, 2018

### Outside Audit & Supervisory Board Members

Name	Grounds for Election	Concurrent Post(s)	Number of Board of Directors Meetings Attended
Mikio Shiokawa	Mr. Mikio Shiokawa possesses specialized knowledge and wide-ranging insight pertaining to global-perspective risk management. We have appointed him as an Outside Audit & Supervisory Board Member in expectation that meaningful advice and input will be offered regarding the globalization of our business and that this advice and input will be translated to advice on and audits of our business administration.	—	— Note: Attendance after appointment on June 21, 2019
Masayuki Tamagawa	Mr. Masayuki Tamagawa has accumulated substantial insight and experience pertaining to finance and accounting while also boasting an extensive career in government agencies as a specialist in sophisticated and wide-ranging fields such as international finance. We have appointed him as an Outside Audit & Supervisory Board Member in expectation that his wealth of experience and impressive track record in international and domestic finance and taxation will be utilized to perform audits of and provide advice on our business administration.	<ul style="list-style-type: none"> <li>Managing Director, Kogakuin University</li> <li>Special Appointed Professor, Educational Development Center, Kogakuin University</li> </ul>	— Note: Attendance after appointment on June 21, 2019
Naoko Shimura	Ms. Naoko Shimura possesses specialized knowledge and exceptional insight regarding corporate law and M&A activities as a legal specialist. We have appointed her as an Outside Audit & Supervisory Board Member in expectation that her wealth of experience, impressive track record, and extensive insight will be utilized to perform audits of and provide advice on our business administration from a legal perspective.	<ul style="list-style-type: none"> <li>Partner, Nishimura &amp; Asahi</li> <li>External Auditor, TABIKOBO Co. Ltd.</li> <li>Outside Director, mixi, Inc.</li> <li>Part-Time Lecturer, Business Law Department, Graduate School of Law, Hitotsubashi University</li> </ul>	— Note: Attendance after appointment on June 21, 2019

## Evaluation of the Board of Directors' Effectiveness

The Company takes steps to periodically verify that the Board of Directors is functioning effectively. Based on the findings of those verifications, an evaluation of the effectiveness of the Board of Directors was performed to identify issues and promote ongoing improvement activities.

In March 2019, a survey was administered to, and responses received from, all Directors and Audit & Supervisory Board Members with regard to measures for enhancing the structure, operating procedures, and meeting discussions of the Board of Directors. The results of this survey were compiled by the Board of Directors' secretariat and then submitted to the Board of Directors, which engaged in extensive discussion and analysis.

Through this process, it was determined that the Board of Directors was highly effective overall. This decision was prefaced on the assessment that the Board of Directors was sufficiently diverse and balanced, that it engaged in free and open discussion, and that it was appropriately exercising its supervisory function. In addition, improvements were confirmed with regard to issues identified during the previous evaluation process, namely the lack of a medium-to-long-term-perspective discussion of agenda items related to the improvement of corporate value. We intend to pursue further improvements in this regard.

The most recent evaluation process identified issues regarding the content (quality) and quantity of reference materials and the sufficiency of discussion times. To address these issues, we will endeavor to increase the quality of reference materials, promote more focused discussion, and improve the efficiency of meeting proceedings to facilitate more robust discussions.

## Training for Directors and Audit & Supervisory Board Members

The Company utilizes training by external organizations and holds biannual officer training sessions to help new Executive Officers acquire the necessary skills for exercising high levels of leadership and taking part in management.

In addition, officers are encouraged to actively take advantage of opportunities for further education, including inter-industry exchange forums and other external seminars.

## Officer Remuneration

Director remuneration comprises fixed compensation as well as performance-linked compensation tied to both short-term performance and medium-to-long-term performance. This scheme is employed to provide Directors with healthy incentive to pursue medium-to-long-term improvements in corporate value while also

accomplishing short-term performance targets. Performance-linked compensation is not paid to Outside Directors or Audit & Supervisory Board Members.

Fixed compensation is decided based on rank with consideration paid to the duties of given Directors, the highest level of employee remuneration, and the remuneration levels of other companies.

Performance-linked compensation comprises compensation linked to short-term performance and compensation linked to medium-to-long-term performance. Compensation linked to short-term performance is calculated using an amount equivalent to 2.0%–2.5% of the ordinary income of a given fiscal year and then divided among all Directors and Executive Officers. Compensation linked to medium-to-long-term performance is decided each year on an individual basis based on the rate of accomplishment of targets.

At the 134th Ordinary General Meeting of Shareholders held on June 23, 2017, the upper limit for Director remuneration was set at ¥500 million a year (of which the upper limit for Outside Director remuneration was set at ¥36 million). Decisions regarding remuneration are made by the Board of Directors after consulting with the Nomination and Remuneration Advisory Committee, an advisory body, to increase the transparency and objectivity of decision-making processes. The Nomination and Remuneration Advisory Committee is a voluntarily established committee chaired by a Representative Director and comprises a majority of Outside Directors that are designated as independent directors.

Despite the recent rise in stock-based remuneration systems, the Company has chosen not to adopt such a system. Rather, officers are required to purchase a defined number of shares of the Company's stock from an officer stockholding organization to instill the perspective of shareholders in management.

## Group Governance Structure

We dispatch Directors and Audit & Supervisory Board Members to Group companies to help elect their Representative Directors, as well as offer guidance and supervision. Our corresponding departments receive daily reports on the financial standing and how businesses are being run at individual subsidiaries.

The Group Business Planning Committee holds quarterly meetings, where it receives reports on the management, financial results, and risk management systems of our entire Group and offers the necessary guidance.

### Principal Actions

- Providing positive support, cultivating abilities and offering guidance for formulating strategies and improving management
- Understanding the financial standing and progress in management plans at the Group Business Planning Committee
- Conducting extraordinary audits when necessary

## Corporate Governance

### Internal Control System

We have put in place the Basic Policy on Internal Control System, which was formulated by the Board of Directors in May 2006. Based on this policy, we constantly work to revise our internal control system in an effort to construct a more appropriate and efficient system.

For details about our Basic Policy on Internal Control System, please see our website (Japanese only).

➡ <http://www.signal.co.jp/aboutus/governance.html>

### Implementation of Internal Control

- The Nippon Signal Group Philosophy was established to ensure that all officers and employees the our Group share the same mission and values and act accordingly.
- We provide compliance education for all Group officers and employees, such as a read-through of the Compliance Manual and the implementation of self-checks.
- Compliance helpdesks for whistleblowing (compliance hotlines), including an external form of contact, have been set up in our efforts to build up the compliance structure of the entire Company.
- The Risk Management Committee, which is chaired by a Representative Director, holds regular meetings as stipulated by regulations. The committee held two meetings in the fiscal year ended March 31, 2019, deliberating on issues including overseas security risks, IT security risks, and work style reforms from a Companywide perspective. The matters discussed at these meetings were reported to the Board of Directors.
- A Vice President was appointed on April 1, 2019, to oversee operating sites and Group companies for the purpose of establishing a more robust production system capable of generating the high levels of value necessary to compete on a global scale.
- The operations of subsidiaries are required to be reported at regular meetings of the Group Business Planning Committee. The committee held four meetings in the fiscal year ended March 31, 2019.
- The Board of Directors holds regular meetings on a monthly basis and extraordinary meetings when needed as stipulated by regulations. The Board held 13 meetings in the fiscal year ended March 31, 2019.
- The Nomination and Remuneration Advisory Committee, an advisory body to the Board of Directors primarily comprising Outside Directors, held four regular meetings in the fiscal year ended March 31, 2019, and reports were submitted on the officer team and officer remuneration.
- The Advisory Board holds regular meetings, of which 11 took place in the fiscal year ended March 31, 2019.
- The Audit & Supervisory Board holds regular meetings on a monthly basis and may hold extraordinary meetings when needed as stipulated by the Regulations of the Audit & Supervisory Board. A total of 13 meetings were held in the fiscal year ended March 31, 2019.

### Dialogue with Shareholders and Investors

The Company avoids holding its General Meeting of Shareholders on dates on which many companies hold their meetings to make it easier for shareholders to take part in the General Meeting of Shareholders and to exercise their voting rights. Notices of convocation are distributed well in advance and are disclosed on the Tokyo Stock Exchange's website and our website before they are sent along with the English translation of proposals. In addition, we facilitate the exercise of voting rights through the creation of an environment that enables the electronic exercise of voting rights through the use of a platform for said purpose.

We consider dialogue with shareholders and other investors to be one of the most important tasks for management. Accordingly, we have launched an investor relations section on our website to disclose information in a timely and appropriate manner. We also organize financial results briefings for institutional investors, participate in investor relations events for individual investors, and create other opportunities for constructive dialogue with investors in an effort to enhance our corporate value.

### Cross-Shareholdings

Nippon Signal engages in cross-shareholdings when deemed necessary for purposes such as sustaining or enhancing business alliances or sales transactions, or maintaining financial transactions and other collaborative business relationships.

We recognize that it is desirable to keep cross-shareholdings at a minimum from the perspective of maintaining and improving corporate value. Based on this recognition, the Board of Directors determines the rationality of individual holdings on an annual basis by evaluating the holding purpose, the associated gains or losses, transaction volumes, counterparty performance, and future relationships. Those cross-shareholdings that are deemed to lack meaningfulness will be sold.

Voting rights attached to cross-shareholdings will be exercised by voting in favor of proposals judged to contribute to corporate value and against those judged to detract. Discussions with the counterparty will be arranged as necessary to discuss proposals.

The Company currently does not have uniform standards for exercising voting rights due to the need for comprehensive decisions that take into account non-financial information pertaining to each company.

Should a company express its intent to sell shares of the Company's stock possessed as a cross-shareholding, the Company will respond appropriately and without implying that transactions will be curtailed or taking other steps to interfere with the sale.

### Anti-Takeover Measures

To maintain and enhance both its corporate value and the common value of shareholders, Nippon Signal established measures against the acquisition of large quantities of its shares. These anti-takeover measures were approved by resolution at the Ordinary General Meeting of Shareholders in June 2010 and put into place thereafter. Following the expiration of these anti-takeover measures, resolutions to extend the period of the measures were approved at the Ordinary General Meeting of Shareholders held in June 2013, in June 2016, and in June 2019.

For details about the anti-takeover measures, please see our website (Japanese only).

➡ <http://www.signal.co.jp/ir/library/index.html>

### Risk Management Structure

The greatest risk to the Nippon Signal Group is failing to maintain safety and reliability. To ensure that safety and reliability is always maintained, we have established several regulations that clearly define the boundaries of authority and responsibility. Group divisions work in line with these regulations as they take actions to control risks.

The Risk Management Committee, which is placed under the direct control of the President, is responsible for countering actions that would impede sound corporate management and addressing risks and compliance issues that threaten to damage corporate value or those that a division cannot handle on its own.

The Risk Management Committee instructs all Company divisions and Group companies to regularly identify, analyze, and evaluate risks. In addition, the Compliance Subcommittee has been formed to address serious risks that are expected to emerge in the medium-to-long term, thereby contributing to the systematic implementation of countermeasures.

### Compliance Promotion Structure

Compliance promotion activities are advanced under the guidance of the Risk Management Committee, which is chaired by the President. In 2010, the Compliance Manual was created, and we began holding regular compliance training to spread and entrench compliance awareness.

In addition, we have set up compliance helpdesks for whistleblowing. In 2015, we added a compliance hotline that is connected to an outside lawyer.

### Business Continuity Planning

Our Group works on transport infrastructure that is indispensable to society. In contributing to society, we understand that we have a responsibility to try to swiftly restore operations in the wake of a natural disaster, an act of terror, or any other calamity so that products and services can be provided.

For these reasons, we have formulated a Business Continuity Plan (BCP) to cope with disasters and accidents such as large-scale earthquakes. It takes into account many different risks such as securing supply for materials and the procurement of fuel while working to restore operations. We will continue reviewing issues and working to improve our BCP.

### Creation of the Earthquake Initial Response Manual

As part of the BCP, we have created the Earthquake Initial Response Manual. It specifies initial response actions to be taken in the event of a large-scale earthquake. We conduct regular drills at individual locations to help quickly form a local response headquarters and a voluntary fire brigade.

### Establishment of the Nippon Signal Group Philosophy and Our Code of Conduct

Principle 2.2 of Japan's Corporate Governance Code, which was formulated by Tokyo Stock Exchange, Inc., requires companies to formulate and put it into practice a code of conduct that is to be followed by their staff members in Japan and other countries. Our corporate activities are supported by many different stakeholders, including customers, business partners, shareholders and investors, employees, and local communities. Working in line with our philosophy of safety and reliability, we seek to remain a corporate group upon which society relies. To achieve this aim, we must build relationships of trust with stakeholders, backed by the proper behavior of each staff member.

We added Our Code of Conduct to the Nippon Signal Group Philosophy in April 2016 to provide a foundation for these relationships of trust. Our Code of Conduct serves as a standard of behavior to be followed by all officers and employees of the Nippon Signal Group.

We encourage all employees to respect laws, ordinances, and other rules. We are also working to build an organization with the capacity to quickly discover problems on its own and address them.



## Corporate Executives (as of June 21, 2019)

### Directors



Yohei Furuhashi  
Representative Director  
Chairman

Apr. 1974 Joined the Company  
Apr. 1997 General Manager of Automatic Fare Collection Sales Dept. of Sales and Marketing Head Office  
Jun. 2000 Executive Officer  
Jun. 2004 Director  
Managing Executive Officer  
Jun. 2006 Deputy Chief Executive Officer  
Jun. 2008 Representative Director President & Chief Operating Officer (COO)  
Jun. 2012 Chief Executive Officer (CEO) (to present)  
Jun. 2016 Chairman (to present)  
May 2017 Outside Auditor of Matsuya Co., Ltd. (to present)



Makoto Tanno  
Director

Apr. 1980 Joined the Company  
May 2012 General Manager of System Design Dept., Transportation Infrastructure Technology Division  
Jun. 2014 Executive Officer  
Apr. 2017 Managing Executive Officer (to present)  
Chief General Manager of Technical Development Head Office  
Responsible for Visionary Business Center  
Jun. 2018 Director (to present)  
Apr. 2019 Responsible for Kuki Plant, Technology and Development, Visionary Business Center and Total Quality Management Promoting Department (to present)



Hidehiko Tsukamoto  
Representative Director  
President

Apr. 1982 Joined the Company  
May 2005 General Manager of Automatic Fare Collection Sales Dept. of Automatic Fare Collection Systems Division  
Jun. 2006 Executive Officer  
Jun. 2010 Director  
Managing Executive Officer  
Jun. 2014 Deputy Chief Executive Officer  
Apr. 2015 Representative Director Executive Vice President & Chief Operating Officer (COO) (to present)  
Jun. 2016 President (to present)



Yoshiteru Yoneyama  
Outside Director

Jul. 2002 Director of Fukoku Mutual Life Insurance Company  
Jul. 2005 Managing Director of Fukoku Mutual Life Insurance Company  
Apr. 2009 Director and Managing Executive Officer of Fukoku Mutual Life Insurance Company  
Jul. 2010 President and Chief Executive Officer of Fukoku Mutual Life Insurance Company (to present)  
Jun. 2014 Outside Director of the Company (to present)



Yoshitaka Tokubuchi  
Director and Executive Vice President

Apr. 1982 Joined the Company  
Jul. 2006 General Manager of Production Control Dept. of Kuki Plant  
Jun. 2008 Executive Officer General Manager of Corporate Strategy Dept.  
May 2011 Managing Executive Officer  
Jun. 2011 Director  
Jun. 2014 Deputy Chief Executive Officer  
Apr. 2018 Chief General Manager of Business Administration Division  
Apr. 2019 Director and Executive Vice President (to present) Executive Vice President and Executive Officer (to present)  
In Control of Plants and Group Companies, Responsible for IT Strategy Department (assigned to Kuki Plant) (to present)



Yasuko Matsumoto  
Outside Director

Apr. 1978 Registered as Attorney  
Joined Yamashita Oshima Law Office  
Apr. 2000 Part-time Lecturer of Seikei University  
Feb. 2001 Member of Independent Administrative Institution Evaluation Committee, the Ministry of Economy, Trade and Industry  
Apr. 2007 Part-time Lecturer of Tokyo University of the Arts (to present)  
Jun. 2015 Outside Director of the Company (to present)



Takeshi Fujiwara  
Director

Apr. 1983 Joined the Company  
Jul. 2009 General Manager of Private Railways Sales Dept. of Railway Signal Systems Division  
Jun. 2010 Executive Officer  
Apr. 2013 Managing Executive Officer (to present)  
Jun. 2013 Director (to present)  
Apr. 2016 Chief General Manager of Sales and Marketing Head Office  
Apr. 2019 Responsible for Domestic Business and Branch Offices (to present)



Yuriko Inoue  
Outside Director

Nov. 1993 Full-time Lecturer of Graduate Schools for Law and Politics, The University of Tokyo  
Apr. 2004 Professor of Graduate School of Law, Kobe University  
Oct. 2010 Professor of The Graduate School of International Corporate Strategy, Hitotsubashi University  
Apr. 2018 Professor of Business Law Department, Graduate School of Law, Hitotsubashi University (to present)  
Jun. 2018 Outside Director of the Company (to present) Outside Director of Dai-ichi Life Holdings, Inc. (to present)



Hideo Oshima  
Director

Apr. 1979 Joined the Company  
Sep. 2004 General Manager of MEMS Business Development Dept. of Visionary Business Center  
Jul. 2008 Chief General Manager of Visionary Business Center  
Apr. 2009 Chief General Manager of Overseas Division  
May 2011 Executive Officer  
Apr. 2016 Managing Executive Officer (to present)  
Jun. 2016 Director (to present)  
Apr. 2019 Responsible for Corporate Strategy Department and Overseas Business (to present)

### Audit & Supervisory Board Members



Shoji Kawada  
Full-time Audit & Supervisory Board Member

Apr. 1975 Joined the Company  
Jul. 2001 General Manager of Production Control Department of Utsunomiya Plant  
Jun. 2003 Executive Officer  
Jun. 2008 Managing Executive Officer  
May 2012 Managing Executive Officer, General Manager of Monodukuri Division  
Responsible for the Monodukuri Division and IT Strategy Department  
Jun. 2012 Director  
Jun. 2013 Audit & Supervisory Board Member (to present)



Mikio Shiokawa  
Full-time and Outside Audit & Supervisory Board Member

Apr. 1982 Joined National Police Agency  
Aug. 2002 Head of Security Department, Kanagawa Prefectural Police Headquarters  
Apr. 2004 Head of Counter International Terrorism Division, Foreign Affairs and Intelligence Department, Security Bureau, National Police Agency  
Jan. 2013 Chief of Hyogo Prefectural Police  
Jan. 2014 Councilor of Deputy Director General, Commissioner General's Secretariat, National Police Agency  
Aug. 2015 Deputy Head of Cabinet Satellite Intelligence Center, Cabinet Secretariat  
Sep. 2017 Ambassador Extraordinary and Plenipotentiary of Embassy of Japan in Tunisia  
Jun. 2019 Full-time and Outside Audit & Supervisory Board Member (to present)



Masayuki Tamagawa  
Outside Audit & Supervisory Board Member

Apr. 1981 Joined the Ministry of Finance  
Jun. 2000 Deputy Director General of Monetary Financial System Bureau, International Monetary Fund (IMF)  
Jul. 2007 Regional Commissioner of Sapporo Regional Taxation Bureau  
Jul. 2011 Deputy Financial Officer of Japan Tobacco Inc.  
Jul. 2012 Head of Asia External Representation Office, African Development Bank (AfDB)  
Oct. 2016 Specially-appointed Professor of Education Development Center, Education Support Functions, Kogakuin University (to present)  
May. 2017 Managing Director of Kogakuin University (to present)  
Jun. 2019 Outside Audit & Supervisory Board Member (to present)



Naoko Shimura  
Outside Audit & Supervisory Board Member

Apr. 1999 Registered as Attorney  
Joined Nishimura & Partners (currently Nishimura & Asahi)  
Apr. 2005 Registered as Attorney of New York State  
Jan. 2008 Partner of Nishimura & Asahi (to present)  
May 2016 External Auditor of TABIKOBO Co. Ltd. (to present)  
Jun. 2018 Outside Director of mixi, Inc. (to present)  
Sep. 2018 Part-time Lecturer of Business Law Department, Graduate School of Law, Hitotsubashi University (to present)  
Jun. 2019 Outside Audit & Supervisory Board Member (to present)

### Executive Officers

#### Chief Operating Officer

Hidehiko Tsukamoto

#### Senior Executive Officers

Masaki Samukawa

Kazuhiro Hirano

#### Executive Vice President and Executive Officer

Masahiro Kubo

Yoshitaka Tokubuchi

#### Managing Executive Officers

Takeshi Fujiwara

#### Executive Officers

Masayoshi Sakai

Hideo Oshima

Toru Muto

Makoto Tanno

Tomohiko Okui

Yoshinori Azuma

Yoshimitsu Hiramata

Kazumi Shimizu

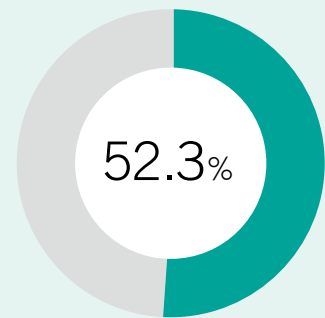
### Technical Adviser Executive Officers

Hachiro Arai

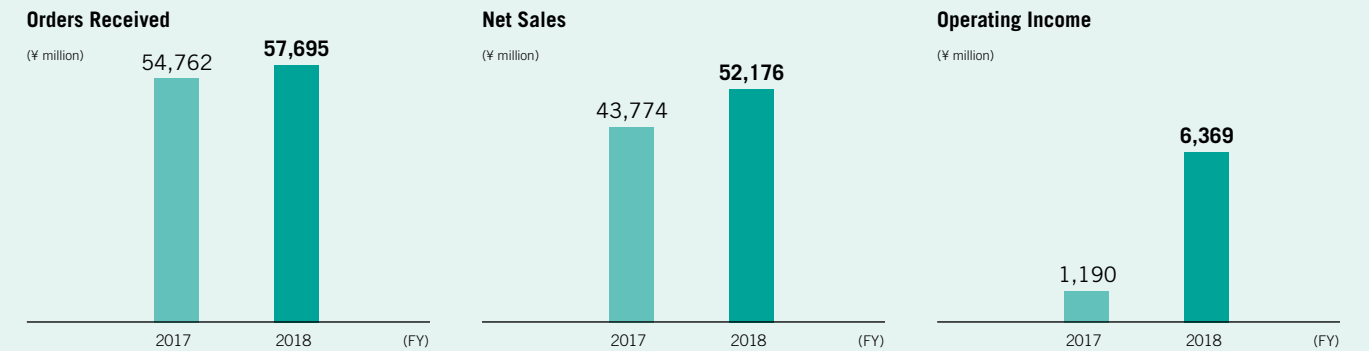
Kazutoshi Sato

# Financial Review

## Transportation Infrastructure



Orders Received	¥57,695 million (+5.4% YoY)
Net Sales	¥52,176 million (+19.2% YoY)
Operating Income	¥6,369 million (+435.0% YoY)



### Railway Signal Systems

Nippon Signal supports Japanese railway systems by offering technology including operation control systems, automatic train control (ATC) devices, railway signal security systems such as the automatic train stop (ATS), interlock devices that control turning mechanisms, signal lights, crossing devices, and passenger guidance displays. Thanks to these products, Japanese railway systems boast safe and reliable operations. We are also actively expanding overseas, centered on SPARCS, our simple-structure and high-performance ATC by radio communication system.



### Smart Mobility Systems

We are helping reduce traffic accidents and congestion by focusing on products such as traffic control systems that manage signals and traffic information systems that display pertinent information. In addition, we participate in numerous automated driving demonstration tests and develop solutions that leverage our strengths as an infrastructure manufacturer.



Traffic control system

#### Initiatives for the Fiscal Year Ended March 2019

In the domestic market, we received orders and recorded sales of various signal security devices, such as ATC and centralized traffic control (CTC), geared toward Japan Railway companies and private railway companies.

Furthermore, in anticipation of a future decline in the working population, we strove to expand sales of automatic train operation (ATO) equipment that enables one-man operation by managing the overall transportation process: the running and stopping of trains, and door control cooperation between stations and trains.

In overseas markets, we focused on sales activities in emerging Asian countries, featuring the wireless signal security system SPARCS as a strategic product. Such undertakings include the Dhaka Metro Rail (MRT) Line-6 in Bangladesh, a country that has seen rapid economic growth and Gwangju Metro Line 2 in South Korea. We also provided signal repair for the Yangon-Mandalay Railway Improvement Project in Myanmar, where improvements to transportation services are urgently needed due to an aging population.

#### Future Initiatives

We will continue to expand sales of various devices including signal security devices. At the same time, with the aim of providing a higher level of safety and security to combat future issues, such as the projected decline of the working population and increasingly powerful natural disasters, we will promote the development of smart operation and maintenance (O&M) solutions that make full use of advanced technologies such as IoT, AI, and robotics.



Railroad crossing barriers

#### Initiatives for the Fiscal Year Ended March 2019

We upgraded the Japanese police's traffic control system and expanded sales of a state-of-the-art road parking meter that collects fees. We also received orders and recorded sales of automatic backup generators for traffic signals and lights in case of power outages during emergencies. Furthermore, in expectation of the coming of self-driving vehicles and the future connected society, Nippon Signal participated in various demonstration experiments, such as providing information to self-driving vehicles.



Traffic lights

#### Future Initiatives

In addition to expanding existing fields centered on small-sized signal lights, we will expand sales channels of automatic backup generators. We also intend to develop and commercialize an accident prevention system that utilizes image processing, thus contributing to safe and secure living. We will develop the road-to-vehicle interface using an infrastructure-to-vehicle (I2V) system that is essential to self-driving vehicles. By doing so, we will provide one-stop services and solutions that leverage our strengths as an infrastructure manufacturer.

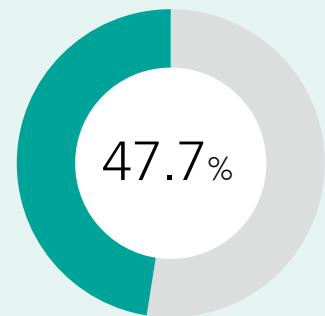


Self-driving bus for JR East Bus Rapid Transit (BRT) Test Project

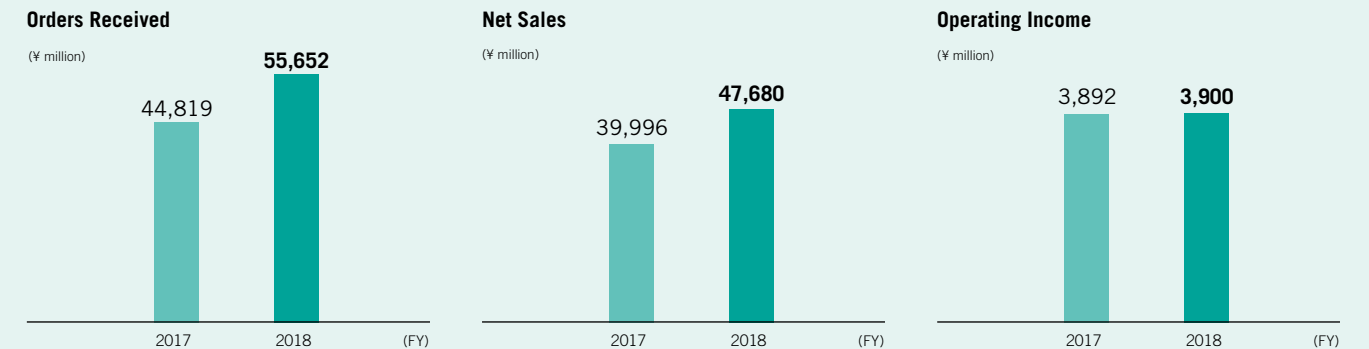


## Financial Review

### ICT Solutions



Orders Received	¥55,652 million (+24.2% YoY)
Net Sales	¥47,680 million (+19.2% YoY)
Operating Income	¥3,900 million (+0.2% YoY)



#### Automatic Fare Collection (AFC) Systems

We realize automated and efficient train station operations through automated systems within stations, such as ticket gates, ticket vending machines, and fare adjustment machines. At the same time, we contribute to smooth transportation via providing the interface between station systems and IC cards such as Suica and PASMO. Furthermore, we are working to improve the safety of station platforms with a variety of lightweight platform doors and lifts.



Tall-panel platform door

#### Initiatives for the Fiscal Year Ended March 2019

Our diverse lineup of platform doors, which are being implemented mainly in crowded metropolitan areas, proved to be an asset as we fulfilled many orders and sales. Additionally, as the threat of terrorism has increased worldwide, we developed and conducted a demonstration test of an automatic X-ray baggage inspection system that is expected to be used in places such as event venues where large crowds gather and it is logistically unfeasible to perform standard security checks.

In overseas markets, we received orders for complete AFC systems and platform screen door (PSD) systems, and supplied the signaling system for the Dhaka MRT Line 6.



Automated ticket gate

#### Future Initiatives

We will continue to focus on the platform door market, where introduction is accelerating ahead of 2020. We also plan to develop robots with an emphasis on convenience, including automatic floor cleaning robots that eliminate labor shortages and station guidance robots that employ spoken dialogue systems.



Lightweight platform door

#### Smart City Systems

We contribute to the alleviation of on-street parking and the annoyances it causes via distribution of parking systems such as a park-lock system and gated parking system capable of managing overall access. We also sell products that support office security, such as security gates, and the high security systems required at event venues and airports.



Parking lot management system with plate number recognition

#### Initiatives for the Fiscal Year Ended March 2019

We received orders and recorded sales of a parking lot management system with enhanced anti-theft functions. Also, we increased sales of gateless systems that eliminate tire locks and enable smooth parking access by expanding our lineup of low-cost products.



Parking lot management system

#### Future Initiatives

We intend to expand sales of gateless systems that allow smoother access into and out of parking spaces. We will work to develop systems that support diversified payment methods such as QR codes and MaaS (Mobility as a Service) smartphone applications.



Security gates

# Financial and Non-Financial Highlights

(Years ended March)	2010	2011	2012	2013	2014	2015	2016	2017	2018*1	2019
<b>Financial Data</b> (¥ million) *2										
Orders received*3	88,040	78,462	77,608	93,475	105,783	99,713	83,258	88,659	99,581	113,347
Net sales*4	83,851	83,465	84,503	85,339	93,217	100,416	90,593	82,134	83,770	99,857
Operating income	5,734	4,809	3,296	5,082	5,943	8,377	7,162	4,269	2,061	7,000
Income before income taxes and minority interests	6,306	5,300	3,576	5,985	7,039	9,111	8,038	5,315	3,192	7,916
Net income attributable to owners of parent	3,304	2,642	1,628	3,135	3,667	5,413	4,994	3,500	2,051	5,306
R&D expenses	3,062	2,297	2,221	2,363	3,167	3,291	3,419	3,078	2,587	2,401
Capital investment	2,098	2,159	1,550	833	1,700	1,953	3,502	3,035	3,564	1,903
Depreciation and amortization	1,747	1,819	1,916	1,635	1,555	1,701	1,685	1,787	1,968	2,128
Total assets	98,902	108,578	105,591	111,058	113,140	120,573	121,434	124,298	127,322	137,643
Net assets	53,371	54,903	57,125	62,954	66,886	74,764	79,801	79,252	79,401	82,135
Cash flows from operating activities	4,756	(1,394)	(7,043)	5,847	10,656	14,917	4,152	369	(305)	3,291
Cash flows from investing activities	(1,991)	(2,126)	(1,469)	(740)	(1,745)	(2,774)	(5,963)	(1,013)	(4,153)	(2,437)
Free cash flow	2,764	(3,521)	(8,512)	5,106	8,911	12,142	(1,811)	(644)	(4,458)	854
Cash flows from financing activities	(669)	2,639	4,236	(2,435)	(7,237)	(6,502)	(1,412)	(492)	3,111	426
(Yen)										
Earnings per share (EPS)	52.96	42.35	26.09	50.25	58.32	79.37	73.24	51.59	31.42	81.29
Book value per share (BPS)	773.99	794.12	828.24	917.15	975.92	1,091.55	1,167.75	1,195.14	1,216.17	1,258.04
Dividend per share	13	13	10	13	16*5	20	22	23	24	25*6
(%)										
Return on equity (ROE)	7.1	5.4	3.2	5.8	5.9	7.7	6.5	4.4	2.6	6.6
Return on assets (ROA)	6.6	5.2	3.6	5.6	6.0	7.8	6.6	4.3	2.3	6.0
Equity ratio	48.8	45.6	48.9	51.5	58.8	61.8	65.6	63.8	62.4	59.7
Payout ratio	24.5	30.7	38.3	25.9	27.4	25.2	30.0	44.6	76.4	30.8
<b>Non-Financial Data</b> *2										
<b>Personnel Data</b>										
Number of employees*7			1,243	1,215	1,207	1,207	1,232	1,254	1,278	1,255
Average age of employees			42yrs&1mo	41yrs&9mos	41yrs&8mos	41yrs&&6mos	41yrs&10mos	41yrs&6mos	41yrs&10mos	42yrs&6mos
Average length of service of employees			18yrs&5mos	17yrs&11mos	17yrs&11mos	17yrs&9mos	17yrs&11mos	17yrs&2mos	17yrs&1mo	17yrs&4mos
<b>Environmental Data</b>										
Inputs										
Electricity (1,000 kWh)			7,573	8,066	8,413	8,282	7,867	7,613	7,850	8,456
Gas (km³)			287	300	319	311	285	310	332	347
Fuel (petroleum) (kl)			27.1	28.8	28.7	28.6	29.5	30.9	31.9	31.6
Water (km³)			60	59	57	73	54	51	54	51
Outputs										
CO <sub>2</sub> (tons)			3,618	3,173	4,015	3,947	3,739	3,700	3,851	4,051
Wastewater (km³)			60	59	57	73	54	51	54	51
Non-industrial waste (tons)			224	236	227	269	223	206	218	262
Industrial waste (tons)			370	404	437	447	412	292	394	324
Recycling rate (%)			92.8	98.3	98.9	98.8	99.0	99.4	99.5	99.6

\*1 The Company has applied the Partial Amendments to Accounting Standard for Tax Effect Accounting (ASBJ Statement No. 28, February 16, 2018) from the start of fiscal 2019. Management indicators and other important data related to fiscal 2018 have been retroactively revised to reflect this newly applied standard.

\*2 Financial data is presented on a consolidated basis, while non-financial data is presented on a non-consolidated basis.

\*3 Orders received are exclusive of consumption tax and other taxes.

\*4 Net sales are exclusive of consumption tax and other taxes.

\*5 The dividend per share for the fiscal year ended March 31, 2014, which amounted to 16 yen, included a commemorative dividend of 2 yen for the 85th anniversary of the foundation of Nippon Signal Co., Ltd.

\*6 The dividend per share for the fiscal year ended March 31, 2019, which amounted to 25 yen, included a commemorative dividend of 1 yen for the 90th anniversary of the foundation of Nippon Signal Co., Ltd.

\*7 The number of employees includes staff on loan from other companies to Nippon Signal, and excludes Nippon Signal staff on loan to other companies and temporary employees.



# Corporate Data

## Corporate Overview (as of June 21, 2019)

Name of Company: Nippon Signal Co., Ltd.  
Date Established: December 27, 1928  
Paid-in Capital: ¥10 billion  
President and COO: Hidehiko Tsukamoto  
Number of Employees: 2,922 (consolidated)  
Accounting Auditor: KPMG AZSA LLC

### Offices and Plants

**Head Office**  
Shin Marunouchi Building, 1-5-1 Marunouchi,  
Chiyoda-ku, Tokyo 100-6513 Japan  
Phone: +81-3-3217-7200 Fax: +81-3-3217-7300  
  
**Osaka Branch Office**  
8F, Osaka Fukoku Seimei Building, 2-4 Komatsubara-cho,  
Kita-ku, Osaka, Osaka 530-0018 Japan  
Phone: +81-6-6312-3851 Fax: +81-6-6312-8597

**Kuki Plant**  
1836-1 Ooya, Aza, Ezura, Kuki, Saitama 346-8524 Japan  
Phone: +81-480-28-3000 Fax: +81-480-28-3800

**Utsunomiya Plant**  
11-2 Hiraide Kogyo Danchi, Utsunomiya, Tochigi 321-8651 Japan  
Phone: +81-28-660-3000 Fax: +81-28-660-3033

For further details, please refer to our website.  
➡ <http://www.signal.co.jp/english/aboutus/branch.html>

### Consolidated Subsidiaries

Nisshin Electronics Service Co., Ltd.  
Nisshin IT Field Service Co., Ltd.  
Sendai Nisshin Electronics Co., Ltd.  
Mie Nisshin Electronics Co., Ltd.  
Nisshin Industry Co., Ltd.  
Tochigi Nisshin Co., Ltd.  
Nisshin Tokki Co., Ltd.  
Nisshin Software Engineering Co., Ltd.  
Nisshin Electric Construction Co., Ltd.  
Yamagata Nisshin Electronics Co., Ltd.  
Sapporo Nisshin Electronics Co., Ltd.  
Fukuoka Nisshin Electronics Co., Ltd.  
Asahi Electronics Co., Ltd.

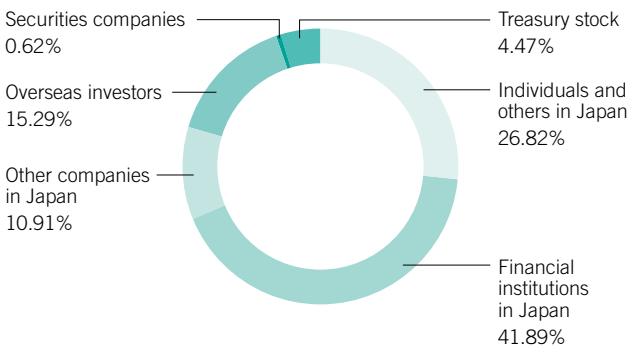
### Non-Consolidated Subsidiaries

Circuit Technology Inc.  
Hokumei Electric Industry Co., Ltd.  
Nisshin Enterprise Co., Ltd.  
Nisshin TECHNO Engineering Co., Ltd.  
Nisshin Hutech Co., Ltd.  
Beijing Nippon Signal Co., Ltd.  
Nippon Signal India Pvt. Ltd.

## Stock Information (as of March 31, 2019)

Number of Shares of Common Stock Issued: 68,339,704  
Stock Exchange Listings: Tokyo Stock Exchange, First Section  
Number of Shareholders: 10,510  
Shareholder Registration Agent: Mizuho Trust & Banking Co., Ltd.

### Distribution of Shares by Shareholder Category

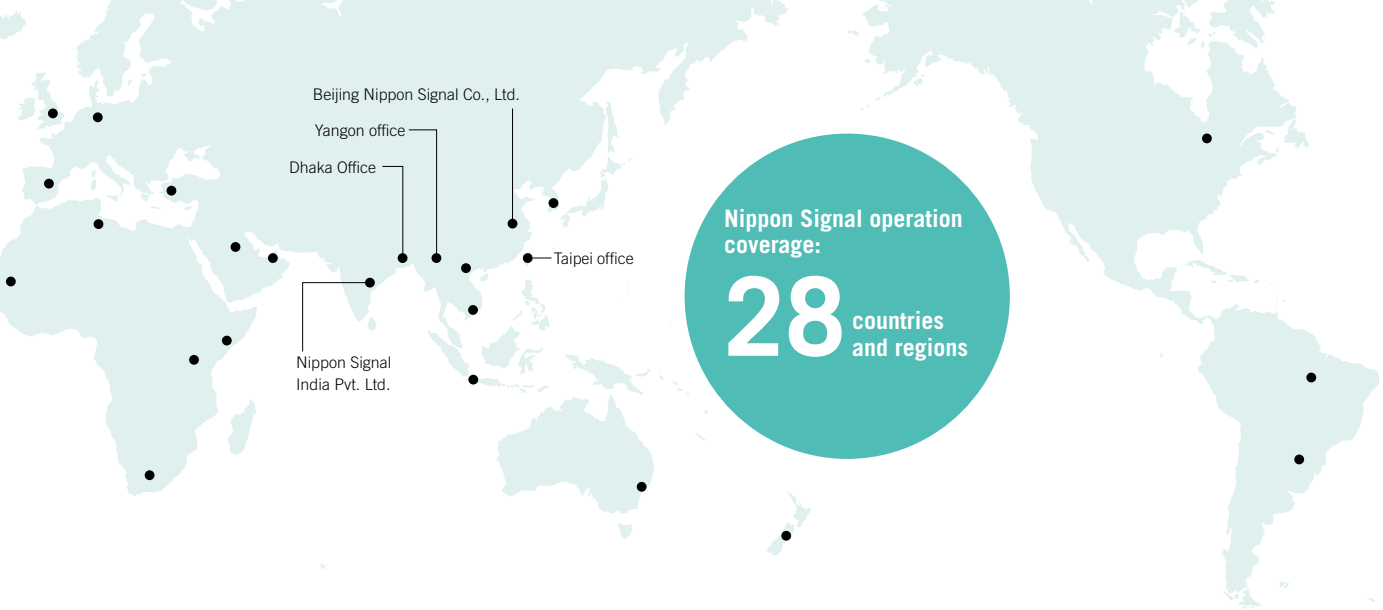


### Major Shareholders

Shareholder	Number of Shares Held (thousand)	Investment Ratio (%)
Fukoku Mutual Life Insurance Company	4,793	7.34
The Master Trust Bank of Japan, Ltd. (trust account)	4,071	6.24
The Nippon Signal Group Employees Shareholding Association	3,645	5.58
Japan Trustee Services Bank, Ltd. (trust account)	3,212	4.92
The Nippon Signal Trading-Partner	3,035	4.65
Mizuho Bank, Ltd.	2,200	3.37
West Japan Railway Company	2,050	3.14
GOVERNMENT OF NORWAY	1,527	2.34
MUFG Bank, Ltd.	1,372	2.10
Aioi Nissay Dowa Insurance Co., Ltd.	1,334	2.04

\*1: Fukoku Mutual Life Insurance Company has placed 730,000 shares of Nippon Signal stock in a retirement benefit trust separate from the aforementioned shares it holds. It reserves the right to give instructions on how to exercise related voting rights.  
\*2: 3,051,451 treasury shares have been deducted for the purpose of calculating the investment ratio.

## Global Network (as of June 21, 2019)



As a leader of Japan's railway signal systems industry, which is held in high regard worldwide, Nippon Signal began developing operations overseas with the supply of level crossing systems to the State Railway of Thailand in 1949. Today, we have two overseas subsidiaries and three overseas offices, and we are engaged in a large number of projects in 28 countries and regions worldwide.  
We supply the world with technologies that enhance the safety and reliability of railway infrastructure, such as SPARCS (simple-structure and high-performance ATC by radio communication system) which can be introduced and maintained at a low cost and automatic fare collection systems. Such offerings were supplied in Bangladesh in 2018.  
Going forward, we will continue to proactively develop operations overseas backed by the experience and technologies we have cultivated in Japan's railway signal systems industry.

