

# Anritsu Integrated Report 2019



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#### Notes regarding use of forecasts and other forward-looking information

The business forecasts mentioned above are based on recent information and reasonable judgments made with available information. The reader should be aware that these projections are not promises, and actual results may be materially different from these projections due to known or unknown risks, changes related to uncertainties, and other factors.

#### **About This Report**

Anritsu marked the 120th anniversary since its founding in 2015, and is already moving forward into a new era. Over the 124 years since the launching of its business, Anritsu's strengths have made it possible for the Company to make strong contributions to the development of the IT field, including in wired and wireless communications devices and related measuring equipment. "Sincerity, Harmony, and Enthusiasm" and "Original & High Level" are two philosophies that have become part of Anritsu's DNA over the years, and these two ideas form the source of the Company's strenaths

This report has been prepared to help our stakeholders better understand these two strands of DNA as well as their role in forming our medium- to long-term growth strategy. In line with this goal, this report presents information on financial factors, including financial performance and corporate strategy, as well as non-financial factors, such as information on environmental and social matters, in an integrated fashion.

We remain committed to managing Anritsu so that our main business activities will continue to contribute to the creation of a safe, secure, and prosperous global society.

- 1. For information on facts and other information that have a material impact on the Anritsu organization's capabilities for creating corporate value in the short, medium, and long terms, please refer to the Business Review section of this report (beginning on page 10) or our website: https://www.anritsu.com/ir.
- 2. In preparing this report, we have made reference to the Global Reporting Initiative (GRI) standard and international reporting frameworks, including those provided by the International Integrated Reporting Council (IIRC).

#### Supporter of the UN Global Compact

In March 2006, Anritsu declared its support of the 10 principles of the UN Global Compact (UNGC), which are grouped into four categories: Human Rights, Labor, Environment, and Anti-Corruption. The Anritsu Group as a whole promotes these principles alongside its sustainability-related activities.





This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

#### **Communication Tools**



#### **Integrated Report** This annual publication contains per-

formance highlights, a message from the Group CEO, business summaries, strategies and future trajectories, past performance trends, as well as financial and nonfinancial data and other information.



#### Securities Report/ **Quarterly Financial Report** These reports provide information on financial performance for the fiscal year at Anritsu on a

quarterly and annual basis.

#### Sustainability Report

Environmental, economic, and social efforts included in the CSR report since 2005 is being incorporated into the Sustainability Report from 2018.



#### **Business Report**

The Business Report provides a basic summary of business activities, highlights, and other information for the fiscal year on an interim and full-year basis.



#### **Financial Information**

Financial information includes financial results, presentation materials, and presentation of Q&A summaries

Communication tools are provided on Anritsu's website at Home > About Anritsu > Investor Relations > IR Library.

https://www.anritsu.com/ir

#### Information for the

**General Meeting of Shareholders** This information includes notices of the general meeting of shareholders, reports of resolutions adopted, and presentation materials for shareholders.



# Aiming to create value that contributes to realize the sustainability of a safe, secure, and prosperous global society

In pages 2-9 of this report, we will make clear the relationship between the source of the Company's value and tangible and intangible capital by looking back at Anritsu's history and how that history fostered our values as part of our effort. This report also introduces our process for creating value through the leveraging of management resources.



# From the Corporate philosophy to the value creation process

# Anritsu Way

The identity that typifies Anritsu Corporation, and which the Company has dedicatedly fostered since its foundation, is compressed in two phrases in its corporate philosophy: "Sincerity, harmony, and enthusiasm" and "Original & High Level."

### "Sincerity, harmony, and enthusiasm"

can be defined as the management philosophy that shows our mind-set and values, including the attitude, thoughts, and preparedness the Company has in conducting business.

- Sincerity: Reliability to meet the expectations of customers and all stakeholders
- Harmony: Adaptability to respond promptly to changes in the business environment and society's demands by using all knowledge of all parties from inside and outside the Company
- Enthusiasm: Innovativeness to provide new value by polishing up cutting-edge technologies such as 5G and IoT

### "Original & High Level"

exist in the spirit of enterprise that extends from the upstream to the downstream of Anritsu's corporate activities.

- (1) The superior social and customer value provided by our products and services
- (2) The corporate culture, management system, and work procedural methods that give rise to those kinds of deliverables.



# **Corporate Philosophy**

Contribute to the development of a safe, secure, and prosperous global society



ESG



# Brand Statement envision : ensure

To provide a more specific image to the ideas of "Sincerity, Harmony, and Enthusiasm" and "Original & High Level" that are key to what makes Anritsu unique, we have created the clear, concise, and globally universal phrase "envision: ensure" as our brand statement.

We believe this brand statement effectively encapsulates Anritsu's message "to share our dream with our customers and create a vision that, through innovation, leads to tangible results that exceed customer expectations."

Society is currently confronted with a wide variety of sustainability-related issues, including those related to the development of social infrastructure, including next-generation information and communications networks, as symbolized by 5G and IoT, as well as issues related to ensuring food safety and security, and realizing greater efficiency in the distribution of food.

Anritsu has contributed to technological innovation and society by providing products that meet the needs of customers, including TV broadcasting equipment, Japan's first radio broadcast receiver and the world's first practical wireless telephone. Inheriting this pioneer spirit, we will continue to contribute to the realization of a safe, secure, and prosperous global society by promoting sustainability management and contributing to the resolution of social issues, including those outlined in the Sustainable Development Goals (SDGs).



- 1. We will contribute to building a safe, secure, and comfortable society through our business activities, based on our long-term vision
- 2. We will maintain harmony with the global socio-economy and society through ethical company activities.
- 3. We will contribute to the preservation of the global environment by promoting environmental management for the coexistence of people and nature.
- 4. We will build strong partnerships by promoting communication with all stakeholders.



1895

1895

Sekisansha

1900

# Anritsu Value History

Anritsu has continuously provided "Original & High Level" value to society with "Sincerity, harmony, and enthusiasm" for 124 years. Having since its foundation accumulated the technologies that are the source of the Group's corporate value, including in communications, testing and measurement, and inspection, as well as the ability we have honed through our experience to quickly adapt to our customers' needs, the Company has been able to earn a deep level of trust from its customers. Here, we present a history of the value created by Anritsu.

1931

1931

Annaka Electric Co., Ltd.

Established

Anritsu Electric Co., Ltd.

1957

1960

1965



# Accumulating Advanced Technologies / Adapting to Change /

1975

1980

1990

1985

1970

1895-1930 Dawning of new era	1931-1949 Period of wired/wireless integration	1950-1962 Period of revival under revived Anritsu Electric Co., Ltd.	1963-1974 Business expansion brought about by diversification	1975-1989 An era of optical Anritsu
History of Chang	e by Showing Sincerit	ty, Harmony, and Enth	usiasm	
<ul> <li>Bears burden of dawning of new era for Japanese information and communications technology</li> <li>Company mired in management crisis due to economic downturn in aftermath of Great Kanto Earthquake, Great Depression, and intensified competition</li> </ul>	<ul> <li>Anritsu Electric Co., Ltd. founded by merger of Kyoritsu Electric (Sekisan-sha) and Annaka Electric Co., Ltd.</li> <li>From outbreak of the Second Sino-Japanese War to war era (armaments boom)</li> <li>Began corporate reconstruction by switching to civilian demand even as war ended</li> </ul>	<ul> <li>Restarted under second company system on basis of Enterprise Reconstruction and Reorganization Law</li> <li>Supported expansion and upgrad- ing of communication infrastruc- ture for Japan's reconstruction</li> <li>Construction of Tokyo headquar- ters office/opening of Atsugi busi- ness office (current headquarters)</li> </ul>	<ul> <li>Promotes business diversification through system comprising six business divisions</li> <li>Supports development of communications infrastructure that underpins Japan's high growth</li> <li>Starts payphone export business</li> </ul>	<ul> <li>Establishes business foundation in United States with mass deliveries of microwave line measuring equipment to AT&amp;T</li> <li>Domestic and overseas optical measurement business expanded by increased investment in optical communications networks</li> <li>Expansion of T&amp;M equipment market due to opening up of communications market fol- lowing NTT's privatization</li> <li>Expansion of overseas payphone business</li> </ul>
History of Challe	nges to Achieving Ori	ginal & High Level		-
Becomes pioneer in wired communications in Japan (manufacture of payphones)     Bears burden of making world's first wireless telephone practical (TYK radio-telephone)	<ul> <li>Development and manufacture of Japan's first television transmitter</li> <li>Development of magnetic record- er (AC bias system)</li> </ul>	<ul> <li>Mass production of payphones and magnetic switching devices</li> <li>Microwave line measuring instru- ment forerunner of T&amp;M equip- ment business</li> </ul>	<ul> <li>Development of T&amp;M equipment for digital transmissions</li> <li>Checkweigher development serves as forerunner of Products Quality Assurance (PQA) business</li> </ul>	Development of T&M equipment for optical fiber communications (optical time domain reflectometer [OTDR], world's first optical pulse tester)     Card-type payphone
		<ul> <li>Development of radio equipment for vessels</li> </ul>	Development of computers and their peripheral equipment	





# **Anritsu Value Creating Story**

The sources of Anritsu's corporate value are its tangible and intangible capitals, which are also the basis for the values that Anritsu holds dear: Reliability, Adaptability, and Innovativeness. Anritsu uses the capital it has amassed to the fullest extent possible to provide solutions to social issues through the conduct of its corporate activities.

#### Test and Measurement Business

Drive social innovation through advancing 5G/IoT

Realize smooth communication through progress in mobile broadband services

Create a safe, secure, and comfortable global society through realizing a global, powerful network infrastructure

#### Expectation of Anritsu (Society's Requests)

#### **PQA Business**

Realizing quality assurance that responds to the need for safety and security in food product materials and pharmaceuticals

Reduce the impact on the biohabitat through proper use of food resources

#### ESG

Offer a working environment where individuals can sense firsthand that their work is worthwhile and educational.

Contribute to the creation of a low-carbon society through developing and expanding the usage of products that reflect proper concern for the natural environment

Conducting open and transparent business activities in good faith

Contribute, as corporate citizens, to the realization of a sustainable society

#### Intellectual Capital

# 120 years of knowledge accumulation, ability to innovate

- •Accumulating of wireless and wireline
- communications technology
- Network quality assurance technology
   Development and manufacturing of ultrahighspeed optical devices
- •Weighing and contaminant detection technology

#### **Human Capital**

#### Global organization and human resources

- Organization that learns and increases its power • Resources on the leading edge of advanced technology
- Resources and systems for interfacing closely with customers

# Inputs

#### Social and Relationship Capita

Partnerships with leading companies • Strong relationship with customers • Lists of global supply chain partners and customers

#### **Financial Capital**

Financial stability in preparation for changes in market situation

- $\cdot$  Management that is conscious of the capital cost
- Ability to generate strong cash flows
   Fund-raising capabilities based on strong credit rating

#### Manufactured Capital

- Original & High Level production processes
  - ·Global supply chain management (SCM)
  - ·Global development systems
  - Global network of manufacturing bases
     Eacilities and SCM based on business conti
  - $\cdot$  Facilities and SCM based on business continuity plans (BCPs)

#### Natural Capital

- Environmental management that extends along entire value chain
  - ·Thoroughgoing environmental management systems
  - · Development process for products that show proper concern for the environment
  - ·Wastewater treatment systems
  - · Chemical substance management systems

#### Test and Measurement Business

# Becoming a leading company in society in 5G/IoT Mobile market

- ·Mobile Market
- ·Development of 5G/IoT systems
- $\cdot \mathsf{Manufacturing} \text{ of mobile devices}$

#### Network infrastructure market

 Structuring communications networks
 Developing high-speed, high-volume data centers

#### Electronics market

- ·Development and manufacturing of electronic devices
- ·Structuring of public wireless networks

# **Business Activities**

#### **PQA Business**

Capable of becoming a world-class quality assurance solutions partner

- Food products and pharmaceutical markets • Development of food processing and manufacturing systems
  - Development of systems for sorting food materials (weight and detection of contaminants)
  - ·Development of pharmaceutical systems

### ESG

Harmony with global economy and society

Promotion of global environment

Strengthening and enhancing corporate governance

Creation of shared value through promotion of communication





# Solving Social Issues Through Business

# Test and Measurement Business



#### Description of Social Issues

Information communications, and tools that connect people over the Internet, such as social networking, photo sharing and video sharing services, have become indispensable in society today. These communications networks that allow people to connect with one another have been advancing on a daily basis, and fifth-generation mobile communications systems (5G) are on the verge of being launched with ultrahigh-speed, large capacity, ultra-low latency, and multiple simultaneous connections. In addition to the increasing sophistication of smartphones and tablets, 5G will find uses in fields such as medicine, agriculture, automobiles, and disaster prevention. This 5G technology is also expected to become communication infrastructure that helps us realize a sustainable society and solve a range of social issues including as a means to eliminate information disparities, prevent traffic accidents, and alleviate labor shortages.

#### Anritsu Initiatives

Anritsu provides its customers with a variety of

measurement solutions that help ensure communications quality and conformance with standards-based specifications at the development, production, construction and maintenance stages for smart devices, mobile networks, fixed networks and cloud computing data centers that are the basis of 5G communications networks. Customers use our testing and measurement instruments so their products can safely and securely connect to robust 5G communications networks.

These 5G communications networks will not only contribute to greater convenience for people, but will also be used in the industrial field. The realization of these new applications will both boost economic growth and provide solution for social issues, such as SDGs, and lead to a more sustainable society.

With a mission of being the first to deliver optimal testing and measurement solutions with its advanced measurement technologies, Anritsu contributes to the creation of industry and advances in innovation that assist with the development of a sustainable society by helping customers maintain safe and secure infrastructure.



### PQA Business

#### Description of Social Issues

Through the use of food processing technology that raises the storage life of perishables, our daily lifestyles have undergone rapid advances in the modern era. Instead of buying ingredients and preparing meals at home, food is now distributed as a packaged product that has greatly improved convenience and plentifulness in people's lives. Once food is distributed in large quantities, however, uneaten food is thrown away (i.e., food loss) in increasing amounts, a social problem that has drawn attention lately. SDG Target 12.3 is stated as "Halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses," a clearly stated objective to ensure a sustainable food consumption and production pattern. Today, most food processing companies have identified the reduction of food loss as a major issue alongside guaranteeing the deliciousness, safety and security of their products.

#### Anritsu Initiatives

At food processing plants, factory automation has facilitated the faster processing of food in larger amounts for shipment.

It is necessary to inspect each individual product to ensure processed food is safe and reliable. In the past, a large number of workers were used in the food inspection process to examine the food before shipment. However, inspections by people are subject to issues related to differences in individual skills and fatigue causing people to lose their concentration.

Along with providing solutions for automating the quality inspection process on food production lines, Anritsu aims to provide solutions linked to minimizing food loss. Together with its customers, the Company will continue to provide advanced quality assurance solutions with the aim of contributing to the realization of a sustainable society with little food loss, and a society where anyone can live their lives in safety without worry.

Solving social issues



Increasing the sophistication of quality assurance for food and pharmaceuticals to achieve:

- A safe and secure society
- · A sustainable society with little food loss





# Group CEO Message



Practicing the Anritsu Way to Continuing Creating Value

# Hirokazu Hamada

Representative Director, President of Anritsu Group CEO Measurement Business Group President

Anritsu was founded in 1895, the year of the world's first successful wireless communication experiment, and 2019 will be the 124th year since its original foundation. Throughout our history, we have always been a pioneer in pursuing the latest information and communications technology. Various innovations in telecommunications infrastructure have dramatically revolutionized society and enriched our lives by "connecting" people moving the global society forward. With "measuring" technology as our core competency, Anritsu has supported many advances in the field of information communication, as well as in food and pharmaceuticals. Under our company philosophy of "Sincerity, Harmony, and Enthusiasm" and "Original & High Level," Anritsu will continue to contribute to the development of a society that is safe, secure, and connected. "envision: ensure" Please look to Anritsu in the future.

## **GLP2020 First Year Review**

#### The Measurement Business captured initial development demand for 5G chipsets and devices

Specifications for 5G, the next-generation communication system, are being developed at 3GPP. The standardization of 5G NSA-NR was completed in December 2017, while that of 5G SA-NR was completed in June 2018, thereby defining all of the specifications of the major functions related to 5G ultrahigh-speed communication. Specifications for ultra-low latency and multiple simultaneous connections, which are expected to expand use cases, are now being reviewed at 3GPP, and standardization is scheduled for completion in early 2020. As a result, the roadmap for 5G commercial services by major carriers in each country is becoming concrete, and the commercialization schedule is progressing smoothly. In December 2018, advance rollout of 5G services using mobile routers started in North America and South Korea, and 5G smartphone services also began in April 2019.

Major device vendors in the US and Asia have developed devices for 5G smartphone services, and began releasing them, one after the other, at the MWC2019 trade fair in Barcelona, Spain. Against this backdrop, the Measurement Business Group has focused on developing solutions for capturing development investment demand for 5G and enhancing organizational structures, and has captured initial development demand for 5G chipsets and devices.

# The PQA Business enjoys a robust market and works on strengthening overseas sales

In the PQA Business, there has been increased investment in automation of processed food production lines, and demand for X-ray-based quality assurance for

# Core policy of our medium- to long-term business strategy

Realize profitable, sustainable growth by reliably catching growth drivers

Market annual average	Vision/	Medium- to long- term guidelines		
growth rate (Anritsu estimate)	Growth Drivers	Sales growth rate	Operating margin	
Test and Measurement Business 65	Become a leading company in supporting a 5G/IoT society 1) 5G, LTE-Advanced 2) IoT/Automotive, Connectivity 3) IP Data traffic/Cloud Services	≧7%	≧20%	
PQA Business %	Become a world-class quality assurance solutions partney Expand from contaminant detection to the quality assurance market	≧7%	≧12%	
Consolidated	_	—	≧18%	
ROE	—	≧15%		

#### **GLP2020: Planned sales and operating profit**

		GLP2020				
Indicator		FY2018 (Plan)	FY2018 (Actual)	FY2019	FY2020	
Revenue	е	92.0 billion yen	99.7 billion yen	102.0 billion yen	105.0 billion yen	
Operati	ng profit	6.6billion yen	11.2 billion yen	10.0 billion yen	14.5billion yen	
Operati	ng margin	7%	11%	10%	14%	
Profit		5.0 billion yen	9.0 billion yen	7.5 billion yen	11.0 billion yen	
ROE		7%	11%	8%	12%	
ŧ	Revenue	60.0 billion yen	68.2 billion yen	69.0 billion yen	70.0 billion yen	
Test and Measurement Business	Operating profit	3.5 billion yen	9.4 billion yen	8.0 billion yen	10.0 billion yen	
Test a Meas Busin	Operating margin	6%	14%	12%	14%	
	Revenue	23.5 billion yen	23.1 billion yen	24.5 billion yen	26.0 billion yen	
PQA Business	Operating profit	2.0 billion yen	1.6 billion yen	2.0 billion yen	3.0 billion yen	
PQA Busit	Operating margin	9%	7%	8%	12%	

(Reference) Expected exchange rates for GLP2020: 1 USD=105 yen, 1 euro=125 yen

contaminants and packaging, etc. has been steadily expanding. In this environment, the PQA Business Group has worked to increase the competitiveness of solutions centered on X-ray technology, and to expand and enhance our overseas sales systems.

#### GLP2020 first year exceeds our plan

In the Group's consolidated results for FY2018, which was the first year of GLP2020, both revenue and operating profit exceeded the initial plan. Revenue was 99.7 billion yen against a target of 92.0 billion yen, while the operating profit ratio was 11% against a target of 7%.

## Toward Achievement of GLP2020

#### Increased business risk due to external factors

Although the global economy has been on a trend toward recovery, uncertainty regarding the future is growing due to factors such as the UK's exit from the EU, intensified US-China trade friction, and trade confrontations caused by protectionism.

#### The Test and Measurement Business aims to become a leading company in the 5G development market in 2019, the initial year of 5G

2019, which is the second year of GLP2020, is regarded as the initial year of 5G, during which pre-services and trials have

been started around the world. In Japan, 5G pre-service will start in line with the Rugby World Cup in September. Furthermore, the standardization of 3GPP Release 16 is scheduled for completion in March 2020. Release 16 will enable mission-critical applications, with ultra-low latency and multiple simultaneous connections that are characteristic of 5G, and investment in the development of chipsets and devices that are compliant with this standard are expected to start in 2020. Afterwards, preparations for the full-scale commercialization of 5G are expected to accelerate. On the other hand, investment for existing LTE is expected to continue to be constrained or shrink. In this environment, the Measurement Business Group aims to become a leading company in the 5G development market, by providing timely solutions that are closely adapted to commercialization plans in countries around the world.

### The PQA Business to develop overseas markets and become a world-class quality assurance solutions partner

The PQA Business has a vision of becoming a world-class quality assurance solutions partner. The growth driver is expansion of quality assurance needs for the food and pharmaceuticals market. To maintain a high growth rate, the PQA Business will need to maintain its competitive advantage in the Japanese market and increase its presence in overseas markets outside Japan. As immediate measures, we will promote the development of markets

FSG





outside Japan putting the focus on the advanced markets in Europe and the US, where demand is expected to grow, with X-ray inspection systems as our key solution. To improve productivity, we will also strengthen investment and improve business processes. With a view toward future growth, we will make a full-scale entry into the European market and the pharmaceuticals market.

By implementing these measures, we aim to achieve revenue of 105 billion yen as well as an operating profit ratio of 14% for the consolidated Group in FY2020.

# Toward "Beyond 2020"

# Aiming for stable growth beyond 2020 with five pillars

"Beyond 2020" was launched to achieve sustainable growth toward 2020 and beyond. The current pillars are "5G communication" for the Test and Measurement business and "food safety" for the PQA Business. Among these, "5G communication" is situated in the mobile business, which is highly volatile and would experience a decline in business performance if future investment were to end. Through "Beyond 2020" we aim to become a stable and highly profitable company by further strengthening "5G communications" and "food safety" while adding focuses on "5G utilized automobiles," "pharmaceutical safety," and "non-communication T&M business" to form 5 pillars that are resistant to the volatility of the mobile market, and can consistently achieve revenue exceeding 100.0 billion yen.

# Toward the realization of new business during the next GLP2023

Our new business field "non-communication measurement business" is not susceptible to the volatility of the mobile market. We will cultivate such business where we can leverage Anritsu's competencies also taking into account possible tie-ups and M&As. The department responsible for developing this new business has been active since last year, and is planning to present specific details and numerical plans in "GLP2023," Anritsu's next three-year plan.

#### The mind of a company full of frontier spirit

As "Beyond 2020" starts, we will cultivate a culture that will raise new shoots inside the company. We believe that "Beyond 2020" can be realized by offering full support to employees who try new things, and will provide an environment in which everyone can challenge themselves.

Anritsu is a company with a history spanning more than 120 years. However, we cannot simply stick with tradition. We will stay true to our mind as "a company full of frontier spirit," by constantly incorporating the latest technologies and taking on new challenges, so that we will build the foundations of the next-generation of Anritsu.



## Sustainability Management

#### Sustainability management contributing to building a "5G/IoT society" that shares the future vision of the SDGs

Anritsu determined its "Sustainability Policy" in April 2018, and is promoting sustainability management that seeks to improve our corporate value by contributing to the solution of global social issues through sincere corporate activities symbolized by the Anritsu Way. Along with initiatives toward sustainable growth from 2020 and onward, Beyond 2020 includes projects aimed at contributing to the achievement of the SDGs for 2030 through our existing businesses.

In the future "5G/IoT society" envisioned by Anritsu, all kinds of things would be connected, resulting in the creation of new added-value. This vision of the future, which combines economic advancement with solving social issues is based on "Society 5.0," the highest evolution of information and communication technology, that is in other words contributing to the sustainability of society while building a society that provides comfortable, vibrant, and high-quality living.

This vision is similar to the future vision of the SDGs, which will transform our world. We believe that sustainability management means the contribution for solving social issues using SDGs as a compass.

# In the mind of Anritsu as "a company full of frontier spirit."

We introduced the concept of sustainability to our existing operations in FY2018, marking this as the fiscal year in which sustainability began to permeate our company. Regarding CO<sub>2</sub> emissions, which have a major impact on climate change and represent one of the most important issues for a sustainable society, in March 2019 we committed to the initial stage of the process for obtaining SBT\* certification. Although we are still in the process of finalizing the details of our reduction plan, as an investment for the future, we will also be increasing solar power generation for renewable energy from the current fiscal year onwards. In addition, to reduce risks including child labor, human trafficking, and forced labor, we will survey and audit our suppliers in order to promote business activities that respect human rights.

Through communication with all of our stakeholders, and utilizing the mind of "a company full of frontier spirit" in our businesses, Anritsu will continue to contribute to the sustainability of a safe and secure society.

\*SBT (Science Based Targets): Targets for reductions in greenhouse gases that are in line with the science-based knowledge to maintain a global temperature rise of less than 2°C (and more ambitiously, of less than 1.5 °C), compared with pre-industrial temperatures.





Achieving "Sustainable Growth with Profit" by Strengthening Strategic Investment and Evolving Cash Flow Management

# Akifumi Kubota

Director Executive Vice President CFO

The biggest issues for our GLP 2020 is to: restore growth in our core business; make improvements to operating profit ratio, a key pillar; raise ROE; and conduct investment in growth that is not affected by mobile technology evolutionary cycles. To that end, we conduct our management in a manner that places a high level of importance on capital cost, maximizes cash generation, and enhances corporate value.

# **Enhancing Corporate Value**

We have set two KPIs as indices for enhancing the measurement of corporate value. As a numerical target, we use ROE, due to its ease of comparability with other companies, while as a quantitative target, we use ACE\*<sup>1</sup> (Anritsu Capital-cost Evaluation), an original index that measures economic added-value. ACE is defined as "after-tax operating profit minus the cost of capital." Unless a level where "after-tax operating profit exceeds the cost of capital" is achieved, we do not regard the situation as having positive economic added-value; that is, no corporate value will be created. The factors (drivers) and main priority issues for enhancing and increasing ROE and ACE are indicated in the diagram below.

GLP2020 and Beyond 2020 will work towards

improving each of these factors, with a goal of achieving an ROE of 15%.

\*1 ACE (Anritsu Capital-cost Evaluation): after-tax operating profit - cost of capital

#### ACE and ROE trends and targets





Note: The Company's capital cost was calculated as 7% for the shareholder equity cost, and the weighted average cost of capital (WACC) used in our original ACE index is 5%.

### Aiming for 15% ROE

ROE is analyzed using three factors: "profitability," "efficiency," and "leverage." Our initiatives to target each of these factors are listed below.

#### Profitability

#### Investment to realize growth

For the Test and Measurement Business, which is our main strength, we will focus on strengthening 5G competitiveness, while for the PQA Business, we will focus on investments aimed at global business development.

We have adopted development ROI (Return on Investment) as the standard for investment level, and are working to improve investment efficiency, with the goal of the development ROI (gross profit/development investment) of 4.0 or higher.

To improve profitability, we are also actively working to improve our cost structure. For example, we are taking active steps to achieve higher efficiency in our sales activities and improved business processes in our corporate department, by managing and seeking to improve cost per order (CPO) in each sales region, with the goal of reviewing the cost structure in each business segment.

#### Efficiency

#### Thorough cash flow management

To achieve sustainable growth investment, it is essential to generate more cash flow. Our goal is to improve our operating cash flow margin to 13%, and to raise our CCC\*<sup>2</sup>, which is a cash flow improvement index, to 120 days in the fiscal year ending March 31, 2021. These targets will be realized through improved profitability via cost reductions and more efficient spending, as well as improvements in asset efficiency, such as by reducing inventory and promoting the collection of accounts receivable.

Moreover, as part of our capital cost-conscious management approach, we are also focusing on cash flow management in each division. As specific measures, we have created a balance sheet for each division, and are

\*2 CCC: Cash Conversion Cycle

working on new management accounting practices, such as visualizing changes in cash and working capital. These measures are aimed at improving capital efficiency management in each division.

#### **Trends in cash flow**





Operating receivables turnover (average at the beginning and end of period)

-•- Inventory turnover (average at the beginning and end of period)

--- Operating payables turnover (average at the beginning and end of period)

#### Leverage

#### Building a robust financial structure

Our core policy for building a robust financial structure is to maintain a capital adequacy ratio  $\ge 60\%$  and a debt-to-equity ratio (D/E)<sup>\*3</sup>  $\le 0.3$ . In a rapidly changing market, having a strong financial base that supports medium- to long-term growth is extremely important. Anritsu's robust financial base has been evaluated, and according to the rating by R&I (Rating and Investment Information, Inc.) as of March 31, 2019, our short-term rating is "a-1" and our long-term rating is "A-."



#### **ROE target: Factor breakdown**

5				
	Profitabi	lity Efficien	cy Levera	ge
Net inco	me Net inco	t income Revenue Total		sets
ROE = Equity	/ = Revenu	$\times$ Total as	sets × Equit	y
	Profitability	Efficiency	Leverage	ROE
FY2018	9%	0.8	1.5	10.9%
Beyond 2020	13%	0.8	1.5	15%

\*3 Debt-to-equity ratio (D/E): Interest-bearing debt/Equity attributable to owners of the parent company

#### FY2018 initiatives and results

In our main Test and Measurement Business, the ROE of the entire company recovered to 10.9% by capturing 5G initial development demand and achieving an operating profit ratio of 14%. We also verified our cross-held stocks in accordance with the principles of the Corporate Governance Code. As a result, in the current fiscal year (FY2018), we sold stocks for which continued ownership was no longer beneficial. By doing so, as of March 31, 2019, the book balance of listed shares related to policy holdings fell to roughly 0.1% of total assets. Going forward, we intend to continue working to reduce cross-held stocks, from the perspective of improving asset efficiency.

# Exploiting the Corporate Value Improvement Cycle

Improving profitability and efficiency, and maximizing cash flow generation are fundamental to improving corporate value. By aggressively investing in new product development and strategic investments including M&As, we will work to strengthen the competitiveness of our solutions and improve our business foundation in order to achieve high returns. By also enhancing shareholder returns and building a robust financial position, we will be able to harness the corporate value improvement cycle.



**Shareholder returns** When returning profits to shareholders, our basic policy is to pay dividends with a consolidated payout ratio of 30% or higher, basically by raising the DOE (Dividend On Equity) in response to an increase in consolidated net income, and to also flexibly implement other shareholder return policies that take the total return ratio into account.

Furthermore, we plan to use surpluses for funding requirements for strategic investments (including M&As) for business expansion in industrial fields that employ 5G/IoT, and for business development in the cloud service and other markets. By making further improvements to our corporate value, including these investments in new businesses, we aim to meet the expectations of our shareholders.

#### **Dividend forecast trend**



 Business Review

ESG

# **Business Summary**



Revenue/Operating profit	Field	Main customers	
Test and Measurement Business			
(billions of yen) 80 60 60 60 60 60 60 60 60 60 6	<ul> <li>Mobile market</li> <li>R&amp;D of mobile communication standards, such as 5G and LTE</li> <li>R&amp;D of communication chipsets (communication semiconductors embedded in smartphones, etc.)</li> <li>R&amp;D and manufacturing of mobile devices, such as smartphones and tablets</li> <li>Communication evaluation in the IoT/Automotive sector</li> <li>Network infrastructure market</li> <li>R&amp;D and manufacturing of communication equipment</li> <li>Construction and maintenance of optical fiber communication networks</li> <li>Construction and maintenance of wireless base stations</li> <li>Network quality assurance (fault monitoring)</li> <li>Electronics market</li> <li>General-purpose measurement used in a wide range of applications</li> </ul>	<ul> <li>Smartphone/tablet device manufacturers</li> <li>EMS (electronics manufacturing services)</li> <li>Chipset manufacturers</li> <li>IT service providers</li> <li>Telecommunications carriers</li> <li>Manufacturers of automobiles and vehicle-related equipment</li> <li>Telecommunication-related construction companies</li> <li>Communication equipment manufacturers</li> <li>Electronic device/component manufacturers</li> </ul>	
	<ul> <li>R&amp;D and manufacturing of communication-related electronic components</li> <li>R&amp;D and manufacturing of wireless communication devices</li> <li>R&amp;D and manufacturing of wireless base stations</li> <li>R&amp;D and manufacturing of smart appliances and vehicle-related equipment, etc.</li> </ul>	Communication equipment manufacturers     Mobile device manufacturers     Electronic equipment manufacturers     Automobile and vehicle-related equipment manufacturers	
PQA Business			
billions of yen) 24 18 12 12 12 10 6 (FY) 2014 2015 2016 2017 2018 2019 (planned) Revenue (left axis) → Operating profit (right axis) *PQA: Product Quality Assurance	Quality assurance of food and pharmaceuticals • Inspecting for contaminants, packaging form, etc. • Detection of metallic contaminants • Weighing and controlling filling weight • Checkweighing	<ul> <li>Food manufacturers (Agricultural products, meat, pro- cessed food)</li> <li>Pharmaceutical/cosmetics manufacturers (Tablets, capsules, liquids, and patches)</li> </ul>	
Other Businesses			
billions of yen) (billions of yen) 12 2.0 9 1.5 6 1.0	<ul> <li>Data communication business</li> <li>Monitoring and control systems related to public infrastructure, such as rivers and waterworks</li> <li>Bandwidth control devices for high-quality networks, such as financial systems and video distribution</li> </ul>	<ul> <li>National and local governments</li> <li>Financial institutions</li> <li>Video distribution companies</li> </ul>	
3 0.5 0 (FY) 2014 2015 2016 2017 2018 2019 (planned) (FY) 2014 2015 Cole 2017 2018 2019 (planned) Revenue (left axis) Coperating profit (right axis)	<ul> <li>Device business</li> <li>Optical/ultra-high-speed devices for optical communication networks and communication equipment</li> </ul>	Electric equipment manufacturers     Communication equipment manufacturers	

\* The method of allocating headquarters administration and other costs to each business segment was changed in FY2018, and the figures for FY2017 have been reclassified. Figures for FY2014 to FY2016 have not been reclassified.





# Anritsu Supporting Evolving 5G Moves to Beyond5G

Hanako Noda

Executive Officer, CTO General Manager of Technical Division

In Japan there has been cooperation between industry, government, and academia in preparation for 5G implementation; using the Tokyo Olympics as the place for its debut. Compared to LTE, 5G promises not only higher communication speeds, but also world-changing innovations. Through measurement technology, Anritsu will support 5G and at the same time we have started preparations for Beyond5G (6G), the next generation to come.

### **Our Changing Environment**

How will our world change in the next 20 years? Among megatrends, Anritsu's focus is on demographic changes, the rise of the middle class, and rapid advances in technology. First, regarding demographics, the population is expected to increase by roughly 2.5 billion, mainly in Asia, Africa and the Middle East, while it will decline in advanced countries, where the ratio of aged people will rapidly become larger and a decline in the working population is expected to be a serious problem. The automation of manufacturing is inevitable to supplement the workforce and reduce manufacturing costs. In addition, there is a growing need for self-driving cars as a means of transport for the elderly, especially in areas where transport networks are not well developed. 5G technology is essential for the development of both factory automation and self-driving. Meanwhile, in areas where the population is expanding, the middle-class population will grow, and various new products and services will be created. As the middle class expands, there will be increasing demand in terms of both the quantity and quality of personal consumption. We believe that demand for food inspection will increase further, due to individualized ordering of food and food safety needs. In addition, rapid technological advancements, especially in artificial intelligence (AI), have a high potential for technological disruption in the next decade. It is easy to foresee rapid progress making great changes to our lives in the near future. Al is already being used in a wide variety of fields, making our lives more convenient, and even coming up with better jokes than comedians.

# 5G Changing Lives, Changing the World

5G usage scenarios include ultra-high speed, large capacity communication (eMBB: Enhanced Mobile Broadband), ultra-reliable and low latency communication (URLLC), and massive simultaneous connection communication (mMTC: massive Machine Type Communication). In 3GPP Release 15, which was finalized in 2018, the specification for ultra-high speed, large capacity communication was determined for mobile applications. Advance rollouts of commercial services started in the US and South Korea in December 2018, with the provision of services scheduled to begin in other countries around the world. The specifications for ultra-reliable and low latency communication and multiple simultaneous connection will be determined from Release 16 in March 2020 onwards, with the deployment of commercial services expected from around 2021. Among these, ultra-high reliable and low latency communication promises a digital revolution that will bring significant change to the world.

Ultra-high-speed, large capacity communication relies on the realization of broadband communication and the use of millimeter-wave bands. Use of millimeter waves, such as the 28 GHz band presents the advantage that its frequencies are not as densely allocated as in the legacy 3 GHz frequency bands and below. As a result, wider bands can be allocated, easily realizing large capacity communication. On the other hand, there is the problem of increased propagation loss in space (so-called "free space propagation losses").





Since the loss is proportional to the square of the frequency, the loss at 30 GHz, for example, increases by 100-fold, compared to that at 3 GHz. As a technology to compensate for increased propagation losses in space, Massive MIMO antennas have been introduced as base station antennas for millimeter wave bands. As shown in the diagram on the right, by simultaneously emitting radio waves from each element of a Massive MIMO antenna composed of 16×16 (256) elements toward a single user to form a beam, a high reception power level can be achieved by the user. Massive MIMO antennas can also form beams for multiple users, and simultaneously perform large-capacity communication with multiple users. If this were realized, at the Olympic games, every spectator at the stadium would be able to wear AR glasses and enjoy watching the events from a freely select-



ed viewpoint. A beam forming mechanism is required not only at the base station, but also at the mobile terminal side. When testing mobile terminals up to 4G, mobile terminals and measuring instruments were connected by cables. However, for 5G, especially millimeter waves, it is now necessary to perform testing without cables, but with



#### **Conventional measurement and OTA measurement**





antennas, as a so-called "OTA (Over The Air) testing." OTA testing of high-frequency millimeter waves requires very advanced technology. By harnessing our many years of experience in developing technologies for antennas and antenna testing, Anritsu has developed a mobile phone evaluation system that supports OTA testing.

For ultra-reliable and low latency communication, 3GPP has stipulated technical conditions of "a transmission success rate of 99.999% or higher for a data packet size of 32 bytes or more, and a latency of 1 millisecond (1 ms) or less in each wireless section." Although 1 ms is the latency in a wireless section, in actual use, it is necessary to include processing delays in wired sections, on the Internet, and in application servers. As one example, for usage cases like self-driving and remote control of construction equipment, the latency must be kept to lower than human reaction speed. The time taken for humans to react (i.e., the time between detection of a danger and the initiation of brake operation) is usually regarded to be roughly 200 to 300 ms. It is therefore necessary to limit all of the above-mentioned delays, from the wireless sections to the processing speed of an application server, to less than this value. To achieve low latency, it is

#### Frequencies allocated to 5G

	[3.7 GHz band] (shared with satellite communications)						
	100MHz	100MHz	100MHz	10	0MHz	100MHz	
36	500 3	700 3	800	3900	4	000	4100
[	[4.5 GHz band] (s	hared with public	service communi	cations	of the Min	istry of Defen	se)
	100MHz		◄		Candida	ate for Local 5	G
45	500 4	600		1800	/		
ļ	[28 GHz band] (	shared with sate	ellite communic	ations)			
	400MHz	400MHz	400MHz		×	400MHz	
27	7.0 27.	4 27.8	28.2			29.1	29.5

necessary to upgrade the core network as well as any wireless sections. To accomplish this, processing systems, so-called "edge devices," must be deployed immediately behind base stations.

Furthermore, "Local 5G" is also attracting attention as a new 5G application. Local 5G is an arrangement in which a regular business is assigned a frequency in a limited area, and is allowed to use 5G as a private network. In addition to the normal features of 5G, local 5G is highly promising, because its area can be designed for high security and in accordance with the user's needs. Promising applications of local 5G include factory automation, the handling of personal information including large-capacity data such as CT images at medical sites, remote control of construction machinery, and real-time video distribution at stadiums and other locations. In Japan, plans are underway to allocate a bandwidth of 200 MHz in the 4.5 GHz band, and a bandwidth of 900 MHz in the 28 GHz band to local 5G. Similar developments are expected in Germany, with its Industry 4.0 strategy, where local 5G will be used in smart factories, etc.



#### Mobile edge computing for ultra-reliable and low latency communication

### **Toward Beyond5G**

5G will continue to evolve, and research and development into Beyond5G has already begun aiming for implementation in 2030, which is 10 years from now. Although there is no clear definition of Beyond5G, the effective use of frequencies has been a perennial issue for wireless communication, and it is believed that research in this area will continue even for Beyond5G. Based on how communication has evolved thus far, it is natural to expect further increases in communication capacity. This is because transmitted video will become a 3D distribution due to the spread of xR (the general term for VR: virtual reality, AR: augmented reality, and MR: mixed reality), and the communication capacity will increase for all types of devices, including unmanned aircraft such as drones and self-driving systems. The frequency range of millimeter and smaller waves enables large-capacity communication, which facilitates use for high-capacity communications, such as Beyond5G. The higher the frequency, the shorter the wavelength and the higher the resolution, and for this reason, utilization of the millimeter band is progressing in various industrial fields, such as imaging and inspection for contaminants. In March 2019, the Federal Communications Commission (FCC) established a new rule to license 95 GHz to 3 THz for 10 years for experimental use, as long as there is no interference with space research or atmospheric observations. This is very encouraging for the practical application of millimeter and terahertz waves. On the other hand, the higher the frequency, the greater the losses within communication devices and along propagation paths. Since greater miniaturization is also required, there are technical difficulties that accompany the use of high frequencies. Anritsu has developed measurement technology in anticipation of the use of millimeter waves. Going forward, we will continue to study technologies related to the use of millimeter and terahertz waves for sensing. We will also promote research and development related to Beyond5G, which we began working on in 2019.

In addition, AI technology is approaching the peak of its third boom, and many AI tools are available. In the future, as 5G evolves, edge computing will be introduced to reduce latency for self-driving, VR, and AR, and AI technology will be introduced into edge devices. As one example, at a smart factory, there are hopes for AI to detect abnormalities and predict failures, as well as visualizing processes by edge processing of huge amounts of data, such as data from acceleration sensors worn by workers, temperature/humidity/ vibration sensors, and test data. By combining edge processing with image processing, a specialty of AI technology, Anritsu is working to improve contaminant detection during food inspections. In the future, we hope to provide intelligent and highly sensitive measurement and inspection solutions that combine 5G and AI technologies. We will strive to develop sensing technologies that support "measuring" and data analysis technologies such as AI to make "measuring" smarter, and by uniting these technologies, contribute to the realization of a safe, secure, and abundant society.



#### Future uses of millimeter, terahertz, and optical waves



# Contributing to the New Innovation Frontier Opened by 5G

- Supporting Network Evolution and Creating New Growth Drivers in 5G Utilizing Fields -

# Tsutomu Tokuke

Vice President, Chief Measurement Business Officer General Manager of Measurement Business Division

Since the digitalization of communication began in the 1980s, advancements including an explosive increase in mobile phone subscribers, the rapid development of the Internet, and the spread of mobile broadband driven by smartphones have brought great changes to both our lives and business. 5G, which carries high expectations as a communication platform for an advanced IoT society, is now poised to enter practical use.

Anritsu's Measurement Business provides the global market with measuring instruments and test systems, which are essential tools for the establishment and spread of communication technologies. In addition to supporting the commercialization and development of 5G, from networks to terminals, we will contribute to the creation of new use cases and the solution of social issues, through the use of 5G in various industrial fields.

Weak-

nesses

Threats

Strengths

Opportu-

nities

#### **SWOT** Analysis

- Communication and measurement technologies, and products covering optical, wired, wireless, and protocols
- Global development, sales, and support network
- Partnerships with industry-leading customers and suppliers
- Increased demand for equipment for development, manufacturing, and construction/maintenance toward the commercialization of 5G
- Acceleration and upgrading of networks due to increased data traffic
- Market expansion of existing non-communication industry fields due to the increased utilization of IoT applications

- 5G/IoT utilization markets are still under development
- High dependence on the telecommunications market

- Increased tensions over trade and geopolitics
- Falling cost competitiveness due to rapid appreciation of the yen
- Economic slowdowns in target business areas
- Business fluctuations for specific customers

**Business Review** 

### **Business Areas**

Over the 120 years of our history, Anritsu has exhibited its DNA as a pioneer who has opened up the future of information and communication, and supported the evolution and development of communication technology at the cutting edge. Our Test and Measurement Business provides the global market with a variety of measuring instruments and test systems that are essential for the functional and performance testing and quality assurance of communication facilities, equipment, and networks.

- Providing test solutions for all phases such as chipset development, device development, conformance testing, and manufacturing inspection in the mobile communications market, as represented by smartphones.
- Providing measuring instruments for performance evaluations for network interfaces and bus interfaces, which are becoming ever faster due to the spread of cloud computing, as well as measuring instruments for optical module inspections.
- Providing measuring instruments for startup tests and maintenance/repair of IP networks that support the Internet, and measuring instruments for manufacturing and construction/ maintenance of mobile communication base stations. In addition, providing a set of measuring instruments necessary for the construction/maintenance of optical fiber cables that extend throughout the world, from the underseas to homes.
- Providing measuring instruments and test systems required for evaluation and assurance of the connectivity quality required for the spread of connected cars and the introduc-

tion of IoT into home appliances and industrial equipment.

 Providing monitoring solutions that contribute to network failure analysis and improvements in customer experience by visualizing the network operational status of telecommunications carriers.

### Market Environment and Business Opportunities

#### Start of 5G Commercial Service

The introduction of 5G, which carries high expectations as a communication platform for IoT in various industries, will start in 2019. In addition to chipset development, where demand for testing has been strong since the communication standards were established, there will be expanding 5G business opportunities for the development of commercial devices, conformance testing, carrier acceptance testing, and calibration inspections in production lines. The introduction of 5G is also expected to increase the demand for measuring instruments required for construction and maintenance across networks, such as the upgrading of communication equipment to realize high speed and low latency, and the introduction of base station equipment that supports high frequencies.

#### Data Center Expansion and Network Evolution

Data traffic is steadily increasing due to services such as SNS and video sharing. In the future, this trend is expected to strengthen further due to AR/VR applications and utilization of AI, among other factors. This situation is expected to promote increases in the scale of data centers as well as

Business areas of the Test and Measurement Business



Mobile communication 2G, 3G, 4G & 5G



Network Construction/ Maintenance



Automotive IoT connectivity



RF & micro/mmWave devices/ components



High-speed buses for cloud computing



Telecom network monitoring





#### Anritsu solutions that support 5G networks

increased network speeds, and an increase in the introduction of 100G Ethernet equipment, which is already in widespread use. In 2019, 400G Ethernet employing a new optical transceiver technology called "PAM4" is about to be introduced, which is expected to create more new business opportunities.

#### Expanding Use Cases for IoT

The expansion of the market for IoT, where devices and services are connected to a network, offers new growth opportunities for Anritsu. Test technologies cultivated in the mobile market has been leveraged for verification of connected cars, and demand is increasing as the market expands. Anritsu has a large variety of connectivity quality evaluation solutions required by IoT applications, such as 4G, 5G, wireless LAN, Bluetooth, and Cellular IoT, and we will continue to make proposals for various industry segments.

## **Growth Strategy**

### GLP2020 Core Policy

Under our Mid-Term Business Plan GLP2020, we have identified the three areas such as (1) 5G, LTE-Advanced, (2) IoT/Automotive, Connectivity, and (3) IP Data Traffic, Cloud Service, as growth drivers for realizing sustainable growth with profits. Among these, the 5G business plays the central role in our growth strategy. To establish a position as a leading company in the global market, we are working to enhance our solution lineups, establish an efficient development framework, and strengthen our support systems.

#### GLP2020 First Year Results

In FY2018, the first year of GLP2020, by capturing the rise in 5G initial development demand, we greatly exceeded our initial targets of 60.0 billion yen in sales and an operating profit ratio of 6%, achieving sales of 68.2 billion yen and an operating profit ratio of 14%, which represents a strong start toward the realization of GLP2020. We have expanded our lineup of 5G products, from development to manufacturing and maintenance, in readiness for the commercialization of 5G. Although the market for LTE has contracted, as expected, we have maintained our customer base and improved profitability by managing investment with a conscious focus on effectiveness. Our automotive and IoT-related businesses are continuously working to develop new customers, as businesses that will grow gradually over the long term. In 2018, the trend toward an expanded use of IoT has become more prominent, such as mandatory eCall in Europe and the successive launch of Cellular IoT services by the operators of various countries.

### Toward Achievement of the GLP2020 targets

To achieve revenue of 70.0 billion yen and an operating margin ratio of 14%, those are the goals for GL2020, we are accelerating our shift in attention to growing segments in FY2019, and work to expand our customer base. Due to the earlier-than-anticipated commercialization of 5G, we expect demand for testing to continue to switch from 4G to 5G. In addition to increasing the competitiveness of confor-



mance testing systems, which will enjoy increased demand with 5G commercialization, we are aggressively making strategic investments to meet an increase in testing requests, due to many operators starting 5G operations. We will also work on the development of network equipment that will evolve with cloud computing, such as 400G Ethernet, and enhance our products in anticipation of manufacturing demand for optical communication modules.

### Toward Beyond 2020

The introduction of new services that exploit the ultra high-speed and high capacity communication of 5G allowing the use of high-definition video distribution and VR/AR. The new features of ultra-low latency and multiple simultaneous connections are also expected to create use cases in a variety of fields, including industry, agriculture, construction, and healthcare, as well as automobiles. Various experiments and demonstrations are already being actively conducted. By leveraging Anritsu's competencies of "connecting" and "measuring" technologies, we will consider collaborating with companies with a strong presence in various fields, and strengthening our portfolio through M&As, as some of our options for establishing businesses in 5G utilizing fields, in new industries that lie beyond a projection of our existing mobile business. We are also working on creating a system to support further growth. For example, we are strengthening the management of our globally expanding development centers, working to achieve a deeper cooperation with leading customers, and developing sales channels. In terms of improving profitability, we will promote

thorough profitability evaluations of development investment projects, and promote product design and kaizen activities that consider cost control. Through these initiatives, we will achieve concrete results, aiming for sales of 100.0 billion yen and an operating profit ratio of 20%, which are the Beyond 2020 targets for the Test and Measurement Business.

# Solutions for Society (SDG Initiatives)

IoT, which connects all kinds of devices, carries high expectations for solving various social issues toward realization of the sustainability targets listed as the SDGs. In order to create a safe, secure, and comfortable IoT society, the development of a robust network infrastructure is essential. Our Test and Measurement Business contributes to the realization and maintenance of communication quality through various solutions for the communication network development, manufacturing, construction and maintenance, and operation stages. Measuring instruments and test systems that utilize wireless communication technologies, such as WLAN, Bluetooth, Cellular IoT, 4G, and 5G, IP communication, and protocol testing technologies, are not limited to smartphones, and are starting to be introduced in advanced companies in fields including automobiles, home appliances, construction machinery, smart meters, and sensing. We believe that more fields will emerge in which Anritsu has something to offer, and we will continue contributing to the promotion of innovation in various industries, toward the creation of a sustainable society.



# Becoming a World-Class Quality Assurance Partner

- Becoming the First Company to Call in the Global Market -

Masumi Niimi Director, Senior Vice President PQA Group President

Our PQA Business has ensured a stable revenue base by capturing an industry-leading position in the domestic food market. In the overseas food market, we have continued to grow significantly above the market average, with a strong reputation for X-ray inspection solutions as our strength.

In our Mid-Term Business Plan GLP2020, we are working to build a foundation for expanding our business globally, while increasing the value of the quality assurance solutions that are our focus.

To respond to a variety of requests in diverse food cultures, and provide solutions and amenable services that exceed our customers' expectations, we will invest for the establishment of a supply chain that is optimized for global business.

By fully considering issues related to quality assurance and working to overcome them, we will grow into a quality assurance partner who will be the first one for customers to call.

Weak-

nesses

Threats

Strengths

Opportu-

nities

#### **SWOT** Analysis

We expect our PQA Business, which has strengths in quality inspection technology for production lines and its ability to adapt to various food manufacturing environments, to expand further due to growing global quality assurance needs for foods and

- High-speed, high-precision, quality inspection technology for production lines
- Engineering capability for adapting inspection equipment to various food manufacturing environments
- Extensive maintenance service system and experienced maintenance engineers in Japan
- Past record and top-class market position in the food inspection market in Japan
- Growing global demand for a stabilized supply of safe and secure food
- Increasing brand risks to food companies due to quality incidents
- Increased consumption of processed foods due to advances in processing/packaging technologies
- Rapid development of innovative technologies such as AI and IoT
- Expansion into the pharmaceutical manufacturing industry, which demands higher quality assurance
- Increased demand for automation and labor saving on production lines due to labor shortages

pharmaceuticals. On the other hand, establishing a sales and maintenance network in overseas markets, and filling out a product lineup that matches the requirements and characteristics of the European and American markets remain as issues.

- Increasing market recognition in large markets such as Europe and America
- Filling out a product lineup that matches the requirements of the European and American markets
- Sales and maintenance network in overseas markets

 Very strong competition in large markets such as Europe and America **Business Review** 



The weight inspection is designed to determine whether the items have been weighed properly and are correctly packaged. At the contaminant inspection stage, verification of whether there are metal or plast contents is conducted and X-ray inspection equipment can detect cracks and defects in such products as cookies. In addition, the production management software "QUICCA" may collaborate in the inspection and weighting stages to monitor production.

#### **Business Areas**

The PQA Business develops, manufactures, sells, and maintains quality inspection systems for production lines. Approximately 80% of revenue in this business are in the food industry.

Many processed foods sold at stores such as supermarkets and convenience stores are produced in food factories at a very high speed of hundreds of products per minute on a belt conveyor. Our PQA Business products contribute to improvements in productivity and quality, by automating quality inspections that have conventionally been performed by humans on production lines.

At Anritsu, we tackle the endless issues of quality assurance head on, proposing optimal quality inspection methods to individual customers, managing and utilizing quality data, and providing full maintenance services, among other measures. By doing so, we find solutions that offer total support to the quality assurance activities of our customers.

### Market Environment and Business Opportunities

The food processing industry, which is the main customer of our PQA Business, has over 100,000 business sites worldwide. Quality assurance needs, such as weight checking and contaminant inspections, in the food industry are continuing to spread from developed countries to emerging countries, and from major corporations that are global businesses to the industry as a whole. In the Japanese market, labor shortages are becoming more severe due to a falling birthrate, an aging population, the concentration of population into urban areas, mismatches between labor supply and demand, and other reasons. As a result, there is an increasing need for automation and labor saving on production lines.

Since the 1960s, when supermarkets started to carry a large range of processed foods, we have created a history of "co-creation and development" in the food industry, and earned the trust of many food companies as their quality assurance partner.

In North America, whose food culture is characterized by bread and meat, X-ray inspection has penetrated the market and demand is growing, mainly for the detection of bones left in meat, and inspection of confectionery and cooked foods.

In Europe, whose food processing and packaging industry has the longest history, the quality inspection market has matured, and the standardization of quality control criteria is progressing. Europe has become the most advanced market for food safety and security where many international standards for the quality control of processed foods such as ISO 22000 are organized.

In China and the ASEAN countries, where remarkable economic growth continues, the need for safe food is increasing with the expanded distribution of prepackaged foods. Demand for quality inspections is expected to increase, primarily for high-income consumers.



**Current Status of the PQA Market and Outlook** 



# **Growth Strategy**

### GLP2020 Basic Policy

In GLP2020, Anritsu positions the three years of the plan up until 2020 as an important period of preparation to transform into "a world-class quality assurance solution partner" who will be the first one for customers to call.

### Initiatives Toward GLP2020

To achieve consolidated revenue of 26.0 billion yen, a share of 50% or higher for overseas operations, and an operating profit ratio of 12% as set forth in the 2020VI-SION, we need to increase consolidated revenue by 3.0 billion yen, mostly in overseas markets, over our FY2018 results, and to increase profitability by providing value to customers and raising our business efficiency.

To achieve these goals, Anritsu is working on "cultivating markets in advanced countries in Europe and the Americas, and the pharmaceutical manufacturing market, with X-ray inspection systems as a key solution" and "responding accurately to market needs through localization and transforming into a global business," as initiatives for GLP2020.

We are investing in the development of new sensors and R&D into image processing and signal analyzing technologies, such as AI, to produce "Original & High Level," high value-added solutions. Anritsu is also promoting the development of product platforms for successively commercializing new products with high customer value.

In major markets centered on advanced countries in Europe and the Americas, we will further cultivate our global relationships and develop customer response systems, optimize our supply chains on a global basis, and improve services and operational efficiency.

### First Year Results of GLP2020

The main achievements of FY2018 are as follows.

• Release of the "XR75 Series X-Ray Inspection System with Dual Energy Sensor," which adopted a newly developed sensor and image processing algorithm, and development of strategic products aimed at business

development in the pharmaceutical market

- Cultivation of global relationships, focusing on North America, and strengthening of local business structures to provide better services
- Improvement of business processes and management infrastructure to achieve more responsive and accurate



XR75 Series X-Ray Inspection System with Dual Energy Sensor



ESG

management of business that will expand globally It will take time for these initiatives to produce results, but they are generally progressing so far on schedule.

# Toward Beyond 2020

Corporate Value Creation

Guaranteeing product quality is vital for all manufacturing industries. At present, Anritsu provides business solutions mainly to customers in the food industry; however, many challenges still remain in this field.

In addition, the pharmaceutical industry, which is directly related to human health, imposes its own stricter standards, and works on quality assurance day and night.

In the PQA business, we will accelerate business expansion in the food field and full-scale expansion in the pharmaceutical manufacturing field, thereby creating a path to sustainable growth with profits, from 2020 and onwards.

We will increase customer value by studying the latest quality assurance issues and creating unmatched original and high-level quality assurance solutions, and aim for an operating profit ratio of over 12%.

# Solutions for Society (SDG Initiatives)

Fact Sheet

The SDG Target 12.3 adopted by the United Nations indicates "halve per capita food waste at the retail and consumer level and reduce food losses along production and supply chains" as a concrete goal for achieving sustainable consumption and production patterns.

In response, many food companies are working to reduce food loss, as an issue toward contributing to the SDGs. Processing food at factories and then distributing it to the market is effective in reducing food loss, since it greatly extends the expiry dates of food and allows the secondary use of vegetable waste, etc. as feed and fuel.

Our quality assurance solutions can prevent products with guality problems from reaching the market, and in the unlikely event that some reach distribution channels, wastage losses associated with the collection of those products can be reduced by identifying the offending products and minimizing the scope of collection.

By providing advanced quality assurance solutions, our PQA Business will work together with our customers toward the realization of a sustainable society.

# Corporate Governance

# Basic concept on corporate governance

Anritsu aims for "continuous growth with sustainable superior profits" and "enhanced corporate value" by responding to changes in the operating environment in a flexible and speedy manner and improving competitiveness as a global company.

The Company seeks to fulfill these objectives by continuing to maintain and strengthen corporate governance systems and frameworks aimed at (1) enabling cooperation with various stakeholders such as shareholders, employees, customers, suppliers, creditors, and local communities, (2) transparent, fair, prompt, and decisive decision making, and (3) appropriate and timely information disclosure.

### Corporate Governance Structure

Anritsu has opted to become a company with an Audit & Supervisory Committee in order to strengthen its audit and supervisory functions. In addition, the Company has introduced an executive officer system in order to enable rapid business execution, separating the Board of Directors' decision-making and supervisory functions from business execution undertaken by executive officers.

The board is composed of nine directors, five of whom are not involved in business execution (four of those five are independent outside directors). Of note, independent outside directors had a 98% attendance rate at Board meetings in fiscal 2018.

# Board of Directors Effectiveness Evaluation

#### Board of Directors Effectiveness Evaluation Methods

The Company conducts an annual review of the Board of Directors effectiveness on the criteria of each item listed in its basic policy on corporate governance, and implements measures to increase effectiveness. Evaluations of the effectiveness of the Board of Directors take place for four to five months every year, after first reconfirming the previous fiscal year's issues and evaluating, for example, the status and level of improvement. We start with discussions about whether there are points about the evaluation method or evaluation items that should be changed from the previous fiscal year for the current fiscal year. This is linked to implementation in the following fiscal year through an exchange of opinions by the Board of Directors, deep discussion and the sharing of issues.

#### Board of Director Effectiveness Evaluation Results and Issues

The main results of evaluation for fiscal 2018 are as follows:

Leading to a deepening of discussion, the Company confirmed the status of measures that had followed the previous year's evaluation results. The measures had included discussing medium- and long-term business with external technical advisors, the faster provision of documents to outside directors, and the carrying out of briefings on monthly proposals in advance.

The Company also verified the establishment of a system which is aimed at fostering constructive discussions and

The Company has established a Nominating Committee and Compensation Committee chaired by independent outside directors in order to complement the functions of the Board of Directors and further clarify its accountability.

Moreover, the Independent Committee is composed of all the Company's independent outside directors, nominates senior independent outside directors by mutual vote, and serves as a place to facilitate smooth communication among outside directors.



decision making regarding key management items as well as supervising business execution. In addition, the composition of the Board of Directors is appropriate in terms of the presence and number of internal/external management personnel for global business expansion and management system enhancement. However, as with the previous fiscal year the need for further diversity-oriented measures has been confirmed.

The participation and contributions of each director are discussed (which includes self-assessments) at meetings of the Board of Directors, Audit & Supervisory Committee, Independent Committee, Nominating Committee, and Compensation Committee. The results indicate that all directors fully understand the role they play in enhancing the Group's corporate value, have insights on high levels of expertise based on a wide array of experience, and, in turn, engage in lively discussions.

On the other hand, the following proposals have been raised and shared at Board of Directors' meetings with regard to key issues that prioritize further increases in the Board's effectiveness.

(1) Board of Directors' Diversity

On an ongoing basis, the Board of Directors will consider inviting outside directors who are knowledgeable about the Company's future business areas and the technologies of those areas, or outside directors who possess experience as corporate executives.

(2) Contributions to Sustainability

The Board of Directors will further enhance contributions to address social sustainability issues.

#### Composition of Board of Directors and Committees As of June 26, 2019

Position	Independent Executives	Name	Nominating Committee	Compensation Committee	Independent Committee	Audit & Supervi- sory Committee
Representative Director		Hirokazu Hamada	0	0		
Director		Akifumi Kubota	0	0		
Director		Masumi Niimi				
Director		Takeshi Shima				
Outside Director	\$	Takaya Seki	O	0	0	
Outside Director	\$	Kazuyoshi Aoki	0	0	0	
Outside Director (Audit & Supervisory Committee Member)	\$	Norio Igarashi	0	0	0	0
Outside Director (Audit & Supervisory Committee Member)	\$	Keiko Shimizu	0	0	0	0
Director (Audit & Supervisory Committee Member)		Toshisumi Taniai				0

 $\stackrel{\scriptstyle{}_{\scriptstyle{\wedge}}}{\sim}$  Independent executive  $\bigcirc$  Chairperson  $\bigcirc$  Committee member

#### Reasons for Selection of Directors

#### Non-executive Directors (Outside Directors)

Name	Reasons for Selection	Important Concurrent Posts
Takaya Seki	Mr. Seki was deemed to be qualified as an outside director for his abundant knowledge and outstanding insight as a specialist in global corporate governance along with his knowledge and experience as a Director (Audit & Supervisory Committee Member) of the Company.	Director of Corporate Practice Partners, Inc. Professor, Rissho University Faculty of Business Administration
Kazuyoshi Aoki	Mr. Aoki was deemed to be qualified as an outside director for his having served as a manager of finance and accounting of a listed company, for having specialized knowledge and abundant experience of and remarkable insight into finance and accounting, and also for having a wealth of experience in global business.	
Norio Igarashi	Mr. Igarashi was deemed to be qualified as an outside director for his specialized knowledge and abundant experience in finance and accounting as a certified public accountant and university professor as well as for his wide-ranging expertise in management from his experience as an outside auditor of a listed company.	Outside Director (Audit & Supervisory Committee.) of Mitsubishi UFJ Securities Holdings Co., Ltd.
Keiko Shimizu	Ms. Shimizu was deemed qualified as an outside director for possessing expertise and rich experience in finance and accounting as a CPA and university professor. As a qualified auditor she also has remarkable insight into areas that include information security.	Director of Shimizu CPA Office Professor, Department of Business Administration, Faculty of Economics, Teikyo University

#### (Internal Director)

Toshisumi	Mr. Taniai was deemed qualified as a director for his broad knowledge and experience in the areas of corporate planning, corporate
Taniai	governance, and compliance, having overseen the Group business administration as Chief Corporate Officer. He also has a wealth of
	experience obtained as Director of the company.

#### **Executive Directors**

Name	Reasons for Selection
Hirokazu Hamada	Tasked with product development and domestic/overseas marketing at the Group's mainstay Test and Measurement Business Group, Mr. Hamada possesses broad knowledge and experience in operations that include keeping abreast of industrial and technological trends. Currently serving as the Company's Representative Director, President, Anritsu Group CEO and the head of Test and Measure- ment Business Group, Mr. Hamada was deemed qualified as a director who is demonstrating his leadership in driving global businesses.
Akifumi Kubota	Having been in charge of the Accounting & Control Department for the Company and overseas subsidiaries, Mr. Kubota currently oversees accounting strategies and Group business administration as CFO and corporate controller. Mr. Kubota was deemed qualified as a director for his extensive knowledge and experience in the areas of finance, accounting, and corporate governance.
Masumi Niimi	Mr. Niimi has wide-ranging knowledge and experience, having been tasked mainly with production management, corporate planning, and overseas subsidiary management at the Product Quality Assurance (PQA) Business Division, which has expanded to become a Group business pillar. Mr. Niimi was deemed qualified as a director after demonstrating his leadership as manager of the PQA Business Group and Anritsu Infivis Co., Ltd., which runs the PQA business.
Takeshi Shima	Possessing a wealth of knowledge and experience in global business, as Chief Global Sales Officer Mr. Shima currently leads global sales and develops the measurement business, which is the main business of Anritsu Group, in the global market, including Japan. He was therefore deemed qualified to be appointed as a director.



# **Audit and Supervisory Committee Members**



Toshisumi Taniai Director Audit & Supervisory Committee Member Norio Igarashi Outside Director Audit & Supervisory Committee Chair Keiko Shimizu Outside Director Audit & Supervisory Committee Member

It has been four years since Anritsu became a company with an Audit & Supervisory Committee. As part of this year's Integrated Report, members of the Audit & Supervisory Committee will talk about the company's auditing system and its contribution to enhancing the Company's overall corporate governance system, as well as current initiatives related to auditing and challenges moving forward.

# The direction of the Anritsu Auditing System

**Mr. Toshisumi Taniai:** Anritsu (hereafter the Company) aims to achieve enhanced transparency in management from a global standpoint by strengthening the audit and supervisory functions (hereafter referred to as the auditing system) of the Board of Directors and enhancing corporate governance systems. The Company auditing system is comprised of three members, including two external directors and one full-time internal director. From the perspective of an outside director and member of the Audit & Supervisory Committee, what are your thoughts on: 1) the auditing system in general; 2) auditing at overseas subsidiaries engaged in global development; 3) the system for internal audits; and 4) the trilateral auditing system?

#### (1) The auditing system in general

**Mr. Norio Igarashi:** The Anritsu auditing system is organically linked to and coordinated by the Audit & Supervisory Committee and the Management Audit Department that

supports it, as well as the Global Audit Department responsible for internal audits. Members of the Management Audit Department have a wealth of experience in executive management as well as a deep understanding of the Company and its business, making it an effective organization for auditing and supervising the board of directors.

To ensure and strengthen the effectiveness of the Audit & Supervisory Committee, we need to adopt a risk-based approach that reflects the corporate culture in regard to financial reporting, the appropriateness of internal controls and compliance, and quality assessments of external audits, including by assessing risks from the perspective of the Audit and Supervisory Committee, setting priority themes, formulating auditing policies on an annual basis, drafting auditing targets, and carrying out audits.

We meet regularly with the representative director to discuss the results of audits, and exchange opinions on how to address the important issues confronting the company. I believe this illustrates the important role the Audit and Supervisory Committee can play in bolstering corporate value at the Company. **Business Review** 

ESG

**Ms. Keiko Shimizu:** We have established regular opportunities for communication between the board of directors and the Audit and Supervisory Committee, the Global Audit Department and the Audit Corporation, and believe strengthening communications to allow the prompt sharing of information on risks is also key to improved governance.

#### (2) Strengthening Anritsu's Global Auditing System

**Mr. Toshisumi Taniai:** Roughly two-thirds of consolidated sales at Anritsu are overseas, and given an overseas group network that includes the measuring instrument and PQA businesses in North America, the EMEA (Europe, the Middle East, and Africa) region, and Asia, there is a pressing need to improve the internal control systems at our overseas locations. With this in mind, what are your thoughts on the Company's global auditing system?

**Mr. Norio Igarashi:** It's my understanding that the Global Audit Department enacts audits for the domestic and overseas subsidiaries, with an emphasis in the audits placed on risks to the operation of the business.

There are 32 overseas subsidiaries in 21 countries around the world, as well as 10 domestic subsidiaries, with the measuring instruments and PQA businesses each having business locations overseas. Of course, the size of each company varies, though it is clear to see that it is not easy for the Global Audit Department to visit each of these companies in the space of a single year. The duties of the Global Audit Department include conducting a general assessment of each company's business, the competitive environment, and applicable regulations, as well as each company's risk management, operation of the business, financial reporting system, organization, and employees. The Global Audit Department also assesses risk and constructs a risk map and heat map for each company while conducting the audit. The Audit & Supervisory Committee assesses whether the audits have been conducted effectively and efficiently, with ongoing cooperation and communication with the Global Audit Department.

**Ms. Keiko Shimizu:** Some of the recent inappropriate accounting activity at Japanese companies has involved overseas subsidiaries, making the auditing of these overseas business a key point upon which we should focus. I think it is important to keep an eye on actions at the Global Audit Department, including in regard to securing an adequate level of auditors.

#### (3) Direction of the Global Audit Department

**Mr. Toshisumi Taniai:** Anritsu's Global Audit Department conducts audits based on a particular theme each year, mainly statutory audits with an emphasis on J-SOX audits. What are your thoughts on the Global Audit Department?

**Mr. Norio Igarashi:** The Global Audit Department is essential to the Audit & Supervisory Committee fulfilling its role in the Company.

Internal controls in the Company are confirmed through cooperation between the Audit & Supervisory Committee, the Management Audit Department, and the Global Audit Department. Audits of subsidiaries to ensure the appropriateness of operations are also conducted in cooperation with the internal auditing departments of the subsidiaries, with the results regularly reported to the board of directors.

As evidenced by the measuring instruments business, Anritsu is operating in a particularly volatile industry. Amid such an environment, the Global Audit Department is expected to serve not only as a discoverer of issues for action, but also as a provider of audit themes and a mechanism for solutions. Looking at the maturation model for internal audits, it would appear there is still some room for improvement. For the Audit & Supervisory Committee, the focus is on whether the Global Audit Department has effectively utilized the auditing knowhow built up over many years and the measures effectively applied to date to further improve the quality and efficiency of audits. The Audit & Supervisory Committee also works with the Global Audit Department, providing a medium- to long-term perspective and offering advice when necessary so the latter can effectively serve as a risk management advisor that is trusted by the executive departments.

**Ms. Keiko Shimizu:** There have recently been reported cases of fraud related to internal controls. I believe it important to focus on the Global Audit Department's efforts in selecting themes and departments for attention based on assumed risk.

# (4) Communication (particularly on KAM) with the Audit Corporation in a trilateral audit

**Mr. Toshisumi Taniai:** With the goal of improving transparency in corporate audits, the audit report for the fiscal year ending in March 21, 2021 is expected to require the disclosure of key audit matters (KAM). With an eye toward disclosures of this type, Anritsu has entered into detailed discussions with KPMG AZSA, our Audit Corporation. What are your thoughts on working with an Audit Corporation?

**Mr. Norio Igarashi:** Anritsu holds regular meetings including the accounting auditor, the Global Audit Department, and the Audit & Supervisory Committee. Key Audit Matters are central to Audit Corporation when auditing financial statements, and can identify matters the company would consider important risks. Through KAM, the Audit & Supervisory Committee members can clearly grasp the audit risks upon which the Audit Corporation are focused in financial reporting, and they can accordingly assess whether the accounting auditor approach is appropriate as well as the overall quality of the audit. A key theme this year is preparations for the introduction of KAM, with the goal of improving the effectiveness of audits while at the same time deepening the exchange of opinions.

**Ms. Keiko Shimizu:** As with the dialogue being conducted with the Audit Corporation, I would like to see improved effectiveness based on the perspective of each participant in a trilateral audit. The theme of KAM is of course to improve the transparency of audits conducted by Audit Corporation, though how we disclose items related to KAM is also important. This is especially important to consider as a member of the Audit & Supervisory Committee.

# **Board of Directors and Auditors**



**Representative Director** 

#### Hirokazu Hamada

Apr. 1988 Apr. 2004	Joined the Company Senior Manager of 1st Development Dept. of IP Network Div., Measurement Business Group
Apr. 2011	Vice President of Anritsu Company (USA)
Apr. 2015	Vice President of the Company Chief R&D Officer of Measurement Business
	General Manager of R&D Div.
Apr. 2016	Senior Vice President
	Vice President of Measurement Business Group
	General Manager of Measurement Business Div.
Apr. 2017	Executive Vice President
	President of Measurement Business Group (Incumbent)
Jun. 2017	Director of the Company Executive Vice President
Apr. 2018	Representative Director, President President (Executive Officer) (Incumbent)
Jun. 2018	Representative Director (Incumbent)
Apr. 2019	Anritsu Group CEO (Incumbent)



#### Director A

Akifumi	Kubota
Apr. 1983	Joined the Company
Apr. 2007	Senior Manager of Accounting & Control Dept.
Apr. 2010	Vice President Chief Financial Officer (CFO) (Incumbent)
Jun. 2013	Director of the Company (Incumbent)
Apr. 2017	Senior Vice President
Oct. 2017	President of Anritsu U.S. Holding, Inc.
Apr. 2018	Chief Corporate Officer (Incumbent)
	General Manager of Global Corporate
	Headquarters
Apr. 2019	Executive Vice President (Incumbent)
Oct 2010	Dresident of Apritou LLC Holding Inc.





#### Director

Masumi	i Niimi
Apr. 1983	Joined the Company
Jun. 2006	Senior Manager of Manufacturing Dept., Manufacturing Div., Anritsu Industrial Solutions Co., Ltd. (Currently Anritsu Infivis Co., Ltd.)
Jun. 2008	President of Anritsu Industrial Solutions Thailand Co., Ltd. (Thailand)
Apr. 2011	Senior Manager of Planning Dept., Anritsu Industrial Solutions Co., Ltd. (Currently Anritsu Infivis Co., Ltd.)
Apr. 2012	Vice President of Anritsu Industrial Solutions Co., Ltd.
Apr. 2016	Vice President of the Company President of PQA Business Group (Incumbent) Representative Director, President of Anritsu Infivis Co., Ltd. (Incumbent)
Apr. 2018	Senior Vice President of the Company (Incumbent)
Jun. 2018	Director of the Company (Incumbent)



#### Director

Takeshi Shima		
Apr. 1988	Joined the Company	
Apr. 2009	Senior Manager of APAC Team Business Development Dept., Marketing Div.	
Apr. 2012	Senior Manager of Wireless Device Manufacturing Solution Dept., Marketing Div.	
Apr. 2014	Senior Manager of Project Team 3 Product Marketing Dept., Marketing Div.	
Apr. 2016	Director of Global Business Development Dept., Measurement Business Div. (Incumbent)	
Apr. 2017	Vice President (Incumbent) Chief Global Sales Officer (Incumbent) General Manager of Global Sales Center (Incumbent)	
Oct. 2017	General Manager of APAC Sales Center	
Apr. 2019	President of Anritsu Americas Sales Company (Incumbent)	
Jun. 2019	Director of the Company (Incumbent)	



#### Director\*

#### Takaya Seki

Apr. 1977	Joined Toyo Trust and Banking Co., Ltd.
	(Currently Mitsubishi UFJ Trust and
	Banking Corporation)

- Mar. 2001 Resigned from Toyo Trust and Banking Co., Ltd. Joined Mizuho Securities Co., Ltd.
- Oct. 2001 Senior Research Manager and Chief Researcher, Japan Investor Relations and Investor Support, Inc.
- Lecturer at Meiji University Graduate School of Global Business (Incumbent) Apr. 2006 Resigned from Mizuho Securities Co., Ltd. and Japan Investor Relations and Investor Support, Inc. Jun. 2008
- Managing Director of Corporate Practice Partners, Inc. Mar. 2009 PhD (Econ), Kyoto University
- Jun. 2011 Outside Director of the Company
- Jun. 2015 Outside Director of the Company (Audit
- & Supervisory Committee Member) Feb. 2017 Director of Corporate Practice Partners,
- Inc. (Incumbent) Professor, Rissho University Faculty of Business Administration (Incumbent) Apr. 2017
- Jun. 2019 Outside Director of the Company (Incumbent)



#### Director\*

Kazuyoshi Aoki		
Apr. 1979	Joined Kao Soap Co., Ltd. (Currently Kao Corporation)	
Feb. 1994	Manager of Finance and Accounting Div., Wakayama factory, Kao Corporation	
Jul. 2001	Senior Manager of IR Dept., Accounting and Finance Center, Kao Corporation	
Mar. 2003	Controller of International Household Div.	
Mar. 2005	Vice Chairman of the Board and Vice President,	
	Kao (China) Holding Co., Ltd.	
May. 2007	Senior Manager of Accounting and Finance Div.	
Jun. 2012	Executive Officer in charge of Accounting and Finance	
Jan. 2017	Resigned Kao Corporation	
Jun. 2019	Outside Director of the Company (Incumbent)	
**Business Review** 

ESG



#### Director\*

(	Audit	&	Supervisory	Committee	Member)

Norio Ig	Norio Igarashi						
Apr. 1977	Registration of CPA						
Jul. 1988	Representative Partner of Aoyama Audit Corporation						
Sep. 2006	Representative Partner of Aarata Audit Corporation						
	(Currently Pricewaterhouse Coopers Aarata LLC)						
Mar. 2007	Resigned from Aarata Audit Corporation						
Apr. 2007	Professor, Graduate School of						
	International Social Sciences,						
Mar. 2013	YOKOHAMA National University						
IVIdI. 2015	Outside Corporate Auditor of Kao Corporation						
Apr. 2014	Visiting Professor, Center for Economic Growth Strategy, YOKOHAMA National University (Incumbent)						
Jun. 2016	Outside Director (Audit & Supervisory Committee Member) of Mitsubishi UFJ Securities Holdings Co., Ltd. (Incumbent)						
Mar. 2017	Resigned as outside Corporate Auditor of Kao Corporation						
Jun. 2017	Outside Director of the Company (Audit & Supervisory Committee Member) (Incumbent)						



#### Director\* (Audit & Supervisory Committee Member)

#### Keiko Shimizu

iteine bi	
May 1979	Joined Price Waterhouse (Currently Pricewaterhouse Coopers Aarata LLC)
Feb. 1982	Resigned from Price Waterhouse
Apr. 1982	Joined Chuo Audit Corporation (Later renamed MISUZU Audit Corporation)
Sep. 1982	Registration of CPA
Apr. 2007	Resigned MISUZU Audit Corporation
May 2007	ShinNihon LLC Audit Corporation (Currently Ernst & Young ShinNihon LLC)
Oct. 2010	Resigned ShinNihon LLC Audit Corporation
Nov. 2010	Joined Consist Inc.
Oct. 2012	Resigned Consist Inc.
Nov. 2012	Established Shimizu CPA Office (Incumbent)
Apr. 2016	Professor, Department of Business Administration, Faculty of Economics, Teikyo University (Incumbent)
Jun. 2019	Outside Director of the Company (Audit & Supervisory Committee Member) (Incumbent)



#### Director (Audit & Supervisory Committee Member) Toshisumi Taniai Apr. 1981 Joined the Company Jul. 2004 Senior Manager of Sales Support Dept., Sales Div. Vice President Senior Manager of Human Resource Apr. 2009 and Administration Dept. Apr. 2011 Chief Corporate Officer . Jun. 2011 Director of the Company Apr. 2013 General Manager of Management Strategy Center Senior Vice President Apr. 2015 Executive Vice President Director of Appliance Business Dept. Apr. 2017 Apr. 2018 Senior Executive Officer Resigned as Senior Executive Officer Jun. 2019 Director of the Company (Audit & Supervisory Committee Member) (Incumbent)

\* Outside Directors as specified in Japan's Company Act, Article 2-15

#### **Exective Officers**

#### Hirokazu Hamada<sup>☆</sup>

President Group CEO Measurement Business Group President

Akifumi Kubota<sup>☆</sup> Executive Vice President CFO Chief Corporate Officer

Masumi Niimi\* Senior Vice President PQA Business Group President

**Takeshi Shima**<sup>☆</sup> Vice President Chief Global Sales Officer

#### **Yasunobu Hashimoto** Vice President Chief Device Business Officer

Ichiro Takeuchi Vice President Chief Human Resource and Administration Officer Hiroyuki Fujikake Vice President Chief SCM Officer

**Noboru Uchida** Vice President Vice Chief Corporate Officer

**Yoshiyuki Amano** Vice President Chief APAC Sales Officer

Masahiko Kadowaki Vice President Chief Corporate Strategy Officer

Tsutomu Tokuke Vice President Chief Measurement Business Officer

**Tetsuo Kawabe** Senior Executive Officer Management Audit Dept.

#### Yukihiro Takahashi

Senior Executive Officer Measurement Business Group Vice President Chief Network Monitoring Solution Business Officer

Akio Takagi Senior Executive Officer Chief Environment and Quality Officer

**Toru Wakinaga** Senior Executive Officer Management Audit Dept.

Olaf Sieler Executive Officer CBDO (Chief Business Development Officer)

Hanako Noda Executive Officer CTO

**Akihiro Harimoto** Executive Officer Chief Japan Sales Officer

☆ Concurrently serving as director

# Sustainability Management

Anritsu has aggressively pursued sustainability activities based on its Company Philosophy, Company Vision, Company Policies and Sustainability Policy that was created in April 2018.

The Company at the same time has established the Sustainability Promotion Center, with a Sustainability Promotion Committee comprising representatives of business divisions, operating companies, and members in the ESG domains. The center is in charge of the promotion of sustainability-related issues for the Anritsu Group. Sustainability promotion activity will follow the corporate value improvement policies as determined by the Board of Directors and at a Management Strategy Conference and fall under PDCA activity as part of the new GLP2020 Mid-Term Business Plan targets. In respect to key ESG issues and social issues the Company aims to alleviate through its business activities, we have sought to maintain objectivity and inclusiveness in addressing the concerns of each of our stakeholders and have accordingly identified and prioritized key issues for action after consulting and cooperating with all related departments.



#### System for Promoting Sustainability



# ESG Highlights

#### Maintaining Harmony with the Global Socio-Economy

Anritsu conducts its business activities taking into consideration sustainability across the entire value chain and recognizes the impact on society as consequence of the development of its business globally, and is cognizant of maintaining harmony with the range of cultures and characteristics in the regions in which it operates. This responsibility encompasses "respect for human rights and diversity", "human resource development", and "occupational health and safety". We seek to incorporate initiatives to build a workplace that provides individual growth and job satisfaction through the fostering of diverse human resource es, which are the source of corporate value. Moreover, we communicate the status of current initiatives in relation to such areas as human rights and the environment in supply chain management with our partner companies that support the manufacturing process at the Anritsu Group.

#### Respect for Human Rights and Diversity - Promoting Women's Empowerment in the Workplace

The Domestic Anritsu Group is gradually increasing its ratio of female workers by focusing on gender equality in the hiring of human resources, regardless of if the individual is working in the technical or clerical fields. In April 2019 a female employee became the company's first internally promoted executive officer, rising to the position of CTO. We also in the same year increased the number of women working in management positions by three.

In terms of career development, we have listened to the opinions and concerns of our female employees and managers and have worked to improve education and training programs as well as broaden the systems supporting the life-work balance of these women. We provide to all employees information on these programs, seeking to raise awareness so that all interested employees, male or female, can find support and peace of mind in balancing work with home responsibilities.

In fiscal 2018, the ratio of female workers was 15% in Japan, 31% in the Americas, 21% in the EMEA region, and

27% in Asia and other regions. The ratio of women workers on a global basis was 20%.

#### Ratio of Female Employees in Regular Full-Time Positions (Domestic Anritsu Group)



#### Human Resource Development - Global Training in the Measurement and PQA Businesses

Anritsu Corporation conducts a global training program in the measuring instruments business for about 100 participants invited from the Anritsu Group overseas businesses. The program involves sales engineers outside Japan measurement instruments businesses coming together to receive a broad range of training, including on new products, new features in existing products, market analysis, demonstration know-how, sales strategies, and product roadmaps.

In addition, Anritsu Infivis is inviting service engineers from regional distributors in Europe and Asia to the company headquarters for a new product service training course. Given that service engineers are in closest contact with the company's customers, they often receive requests from those customers and distributors regarding Anritsu products, so the program is particularly valuable as a forum

for the exchange of information that could be useful in the development of our products.



#### **Occupational Health and Safety - Initiative to Realize Work-Style Reform**

To prevent health problems from overwork, the Domestic Anritsu Group promotes measures based on the Groupwide management policy to ensure appropriate work hours. These measures include shortening overtime work, minimizing midnight shift work, and implementing "no overtime" days. In line with the Article 36 Agreement through March 2019 and the Labor Standards Act from April 1, 2019, the Company and the Anritsu Labor Union set and manage prescribed working hours for employees. We have abandoned the idea that the best performers work the longest hours, and are promoting measures aimed at shorter, more efficient meetings, and having employees start work at opening hours and leave by 7:00pm, including turning off the lights at that time. Anritsu is also advancing workstyle reforms with the goal of improving corporate value and bolstering the innovation that leaders to enhanced productivity.

We launched workstyle reforms in fiscal 2016 with the goal of correcting the trend toward long working hours as well as maintaining and improving the health of our employees, thereby improving productivity. Since then, there has been a steady decline in overtime hours per month compared to fiscal 2015. While overtime hours ticked higher in response to initial 5G development demand in fiscal 2018, the absolute number of overtime hours per month was still lower than in fiscal 2015.

The average number of vacation days taken has remained above 16 since fiscal 2016.





Average monthly overtime working hours (Left axis)
 Average annual paid holiday use (Right axis)

#### Supply Chain Management – Supply Chain Due Diligence

With the goal of confirming the quality of CSR activities at our suppliers, we created the CSR Questionnaire, which focuses on items such as human rights, labor and health, fair trade and ethics, quality and safety, information security, and the environment.

We received responses to this questionnaire from 95 of our leading suppliers in fiscal 2018 and can report favorable results. Moreover, in order to assess actual conditions, we visited several of our supplier in China and confirmed that there were no significant risks.

We have posted our statement in regard to compliance with the U.K. Modern Slavery Act, a global compact to eradicate forced labor and trafficking in supply chains, each year on the Anritsu Corporation and Anritsu EMEA Ltd. websites.



#### **Promoting Global Environmental Protection**

Protecting the global environment is an important theme in our efforts to solve the issue of climate change and realize sustainable production and consumption. In order to contribute to the sustainability of society and realize beneficial sustainable growth, Anritsu has been working to firmly instill environmental compliance related to our business activities and products, address climate change, create a recycling-oriented society, and prevent environmental pollution on a global basis and throughout our value chain.

#### **Climate Change Strategies - Formulation of SBT**

Thanks to an improvement in the electric power CO<sub>2</sub> conversion coefficient and a reduction in energy consumption, Scope 1 and 2 CO<sub>2</sub> emissions at the Anritsu Group in fiscal 2018 were down 15.7% compared to fiscal 2015.

The Company submitted a commitment letter to the Science Based Targets (SBT) Initiative in March 2019 and is currently formulating its SBT. Anritsu's efforts include plans for the utilization of renewable energy, with management focusing on the potential introduction of solar power generation equipment capable of producing total maximum output of several megawatts by fiscal 2030.



#### Development of Environmentally Friendly Products – Developing the MT8000A Radio Communication Test Station

The MT8000A Radio Communications Test Station is used to test 5G mobile terminals, chipsets, and other devices under development. One unit can effectively handle both RF measurement and protocol testing operations. Development was based on the concept of constructing a single unit with the processing capabilities equal to the multiple existing testers currently required for 5G NR (New Radio) measurements. The equipment was realized through the use of highly efficient power supply devices and low-power, highly integrated devices.

Field Programmable Gate Array (FPGA) devices consume more power the higher the temperature, even when

performing the same computation. The power consumption of FPGAs can therefore be controlled by efficiently dissipating heat by spreading out heat sources within the casing.

Compared to conventional products processing at the same levels, we decreased the model's volume by 80% and mass by 74%, with power consumption reduced by a substantial 75%.





#### Supporting the Kanagawa No Plastic Waste Declaration

Kanagawa Prefecture considers itself an "SDGs Future City" and in line with the SDG for creating a sustainable society, the prefectural government issued the Kanagawa No Plastic Waste Declaration, with the specific aim of working toward a solution for the issue of marine pollution, which is becoming increasingly severe, especially in regard to the problem of micro-plastics. Anritsu is not only a supporter of this activity, but also conducts clean-up activities in the areas around the Atsugi site, works to prevent plastic pollution in rivers and the ocean through participation in Sagami River clean-up activities, and works to educate its employees through general environmental programs and the publication of magazines focusing on the issue of the environment.



#### **Expanding and Strengthening Governance**

The Anritsu Group is deeply aware of its corporate social responsibility and conducts its business soundly and honestly in compliance with laws and corporate ethical standards in each of the countries in which it operates and in accordance with the expectations of society. Moreover, we aim to contribute to the creation of a sustainable society and the improvement of our corporate value by conducting our business in a fair and transparent manner, backed by rapid and decisive decision making and a focus on risk management.

**Corporate Governance** 

Please see our corporate governance section on pages 30–35 of this report.

#### **Establishment of Compliance - Initiatives Related to Anti-Bribery and Corporation**

Developing its business on a global basis, the Anritsu Group is keenly aware that preventing bribery and other forms of corruption is the most important compliance issue. We have implemented a number of initiatives in this area in the past, but moved in fiscal 2012 to establish the Anritsu Group Anti-Bribery Policy and entrench awareness of it throughout the Anritsu Group, including at overseas locations. Key initiatives undertaken by the company are as follows.

Fiscal 2012	Established the "Anritsu Group Anti-Bribery Policy" and gave full notice to Anritsu companies in Japan and overseas of the prohibition of bribery
Fiscal 2013	Prepared and gave educational support for global "Case Studies," including anti-bribery
Fiscal 2014	Implemented global web-based training (WBT) on prohibition of bribery
Fiscal 2015	Continued WBT on anti-bribery. Prepared the "Anritsu Group Anti-Bribery and Corruption Rules"
Fiscal 2016	Launched implementation of "Anritsu Group Anti-Bribery and Corruption Rules"
Fiscal 2017	Launched efforts to address questions from various regions regarding the "Anritsu Group Anti-Bribery and Corruption Rules"
Fiscal 2018	Self-assessment in preventing bribery and corruption by country managers at overseas locations.

#### The Creation of Shared Value through the Promotion of Communication

Anritsu actively engages in the disclosure of information and active dialogue with all of its stakeholders throughout the entirety of its business activities as it strives to build shared value and strengthen its partnerships.

#### Providing information to and communicating with stakeholders

Anritsu seeks to obtain an appropriate assessment of its corporate value through communication with shareholders and investors while striving to achieve higher shareholder satisfaction by enhancing corporate value and delivering returns to shareholders. Comments by shareholders and investors are shared with our Management Strategic Conference and the Information Disclosure Committee. which includes members of management, and this is linked to improving information disclosure and business activities through feedback to the IR Promotion Committee; in which the departments for management planning, accounting, and legal affairs participate. We conducted 269 interviews in fiscal 2018 with domestic investors and 166 interviews with overseas investors.

#### **ESG Index Inclusion**

Information disclosure and activities related to ESG are evaluated, with the company thereafter included in domestic and overseas ESG indexes.









For details, please visit the following page on our website: https://www.anritsu.com/en-US/aboutanritsu/sustainability/evaluation 

## **11-Year Summary of Selected Financial/Nonfinan**

ANRITSU CORPORATION AND CONSOLIDATED SUBSIDIARIES Years ended March 31, 2009-2019.

Japanese Generally Accepted Accounting Principles ("J-GAAP")  $\rightarrow$ 

Financial information				
	FY2008	FY2009	FY2010	FY2011
For the year:				
Revenue	83,940	73,548	77,853	93,586
Cost of sales	52,005	42,707	43,033	49,384
Gross profit	31,934	30,840	34,819	44,202
Selling, general and administrative expenses	31,029	26,257	27,825	29,787
Operating Profit	905	4,583	6,994	14,414
Net income (loss)	(3,540)	385	3,069	10,180
Net cash provided by (used in) operating activities	6,916	7,970	9,229	15,871
Net cash provided by (used in) investing activities	(1,326)	(498)	(1,432)	(1,963)
Net cash provided by (used in) financing activities	(3,847)	386	(6,049)	(2,204)
Free cash flow	5,589	7,471	7,797	13,908
Depreciation and amortization	3,099	2,979	2,589	2,555
Capital expenditures	2,236	1,134	1,549	3,165
R&D expense*1	11,704	9,387	9,380	10,012
At year-end:				
Total assets	100,983	101,188	99,249	113,069
Net assets	37,524	37,674	39,906	54,863
Cash and cash equivalents	18,538	26,269	27,993	39,596
Interest-bearing debt	43,605	42,274	36,839	30,336
Per share:				Yen
Net income (loss)				
Basic	(27.78)	3.02	24.09	79.39
Diluted		2.77	22.08	71.01
Cash dividends	3.50	_	7.00	15.00
Total net assets	294.29	295.49	313.09	399.56
Key financial indicators:				
Operating income margin (%)	1.1	6.2	9.0	15.4
Return on equity (%)* <sup>2</sup>	_	1.0	7.9	21.5
Anritsu Capital-cost Evaluation (millions of yen)*3	(4,936)	(2,971)	1,908	9,194
Return on assets (%)*4	_	0.4	3.1	9.6
Ratio of net assets to total assets (%)	37.1	37.2	40.2	48.5
Net debt-to-equity ratio (times)*5	0.67	0.43	0.22	_
Interest coverage ratio (times)*6	9.8	12.7	13.2	30.7
Dividend payout ratio (%)	_	_	29.1	18.9
Dividends on equity (%)*8	1.0	_	2.3	4.2

Notes: 1. The Anritsu Group has adopted IFRS since FY2012 and prepared consolidated financial statements in conformity with IFRS.

With amendment of IAS 19, FY2012 actual figures have been restated based on the revised accounting policies retrospectively.
 Amounts less than ¥1 million are rounded down.

Non-financial inf	Ion-financial information         FY2008         FY2009         FY2010								
Social: Human resources Number of employees (figures in parentheses are the number of employees at overse				verseas Group companies)	3,697 (1,391)	3,589 (1,315)	3,614 (1,374)		
		Ratio of females in r	atio of females in managerial positions globally*		9%	19%	12%		
				Americas	68%	64%	64%		
				EMEA	97%	74%	64%		
	<u>Asia, othe</u>				37%	33%	44%		
				Global total	52%	50%	48%		
		Anritsu Corporation	. , ,	Male	0	0	0		
			childcare leave	Female	14	11	6		
		Anritsu Corporation	1,5,5,5	J Male	0	0	0		
			to work after childcare leave	Female	12	10	11		
	Occupational health and safety		lents (per one million hours)		0.00	0.00	0.00		
Environmental:	CO <sub>2</sub> emissions (Scop	oe1, 2) (t-CO <sub>2</sub> )**		Global total		_	_		
	Energy usage (crude	le oil conversion basi	is) (kL)	Global total	9,113	8,543	9,013		
Water usage (m <sup>3</sup> )				Global total	145,083	124,243	128,204		
	Excellent eco-produ	ucts Number of reg	gistered equipment (cumulativ	ve)	22	25	27		

\* The ratio of females in managerial positions, with the number of males in managerial positions as 100 = (Females in managerial positions / total number of female employees) / (Men in managerial positions / Total male employees) \*\* Scope 2 Guidance uses the market-based method.

**Business Review** 

### cial Data

#### **Mid-term Business Plan**

		(	GLP2014		(	GLP2017		GLP2	020
International Financial Reporting Standa	ırds (IFRS) –	<b>→</b>							
Financial information							N	Aillions of yen	Thousands o U.S. dollars
-	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY <b>2017</b>	FY2018	0.5. 001101
For the year:									
Revenue	93,622	94,685	101,853	98,839	95,532	87,638	85,967	99,659	897,829
Cost of sales	44,397	43,715	46,897	46,147	46,557	45,168	44,023	48,807	439,703
Gross profit	49,225	50,969	54,955	52,692	48,974	42,469	41,943	50,852	458,126
Selling, general and administrative expenses	23,065	24,346	28,621	29,605	29,621	27,198	26,563	27,944	251,748
Operating profit	14,000	15,714	14,123	10,882	5,897	4,234	4,912	11,246	101,315
Profit (loss) before tax	13,094	16,139	14,239	11,591	5,434	3,628	4,602	11,362	102,360
Profit from continuing operations	7,972	13,888	9,318	7,874	3,767	2,734	2,898	8,991	81,000
Net cash flows from (used in)									
operating activities	16,143	11,771	13,792	7,582	10,195	9,246	7.946	12,247	110,333
Net cash flows from (used in)	10,115	,,,,	13,752	7,502	10,155	5,210	7,510	,,,	110,555
investing activities	(2,174)	(5,030)	(5,312)	(6,049)	(9,042)	(3,665)	(3,932)	(616)	(5,550
Net cash flows from (used in)	(2,17-1)	(3,030)	(3,312)	(0,015)	(3,012)	(3,003)	(3,332)	(010)	(5,550
financing activities	(2,264)	(10,035)	(4,359)	(11,234)	2,450	(2,758)	(8,201)	(2,052)	(18,486
Free cash flow	13,968	6,740	8,480	1,533	1,153	5,581	4,014	11,631	104,784
									-
Depreciation and amortization	2,469	2,562	2,863	3,186	3,736	3,935	3,964	4,031	36,315
Capital expenditures	3,200	4,562	5,355	9,612	5,399	2,588	3,430	2,436	21,946
R&D expense*1	9,842	10,323	12,488	13,366	13,089	11,212	10,556	12,008	108,180
At year-end:									
Total assets	111,287	115,095	127,149	126,893	124,624	125,054	121,190	130,467	1,175,378
Total equity	46,818	64,539	74,896	78,665	75,862	76,485	78,313	85,678	771,874
Cash and cash equivalents	39,596	37,690	43,215	34,916	37,391	39,682	35,452	45,097	406,279
Interest-bearing debt	30,113	19,417	18,858	16,065	22,024	22,026	15,944	16,248	146,378
=								Yen	U.S. dollar
Earnings per share: Basic earnings per share	62.17	98.41	64.93	55.72	27.38	19.65	20.97	65.20	0.59
Diluted earnings per share		98.41 97.03	64.93 64.89	55.72	27.38	19.65	20.97		0.59
Cash dividends	56.33 15.00					19.65		65.16 22.00	0.55
Equity attributable to owners of parent	341.43	20.00 450.36	20.00 522.54	24.00 572.04	24.00 552.26	556.40	15.00 569.54	622.87	5.61
Key financial indicators:	15.0	16.6	10.0	11.0	6.2	10	E 7	11.2	
Operating profit margin (%)	15.0	16.6	13.9	11.0	6.2	4.8 2 F	5.7	11.3	
Return on equity (%)* <sup>2</sup>	19.5	25.0	13.3	10.2	4.9	3.5	3.7	10.9	25 70
Anritsu Capital-cost Evaluation (millions of yen)*3	5,163	9,440	4,759	2,453	(584)	(1,569)	(1,610)	3,970	35,766
Return on assets (%)*4	7.5	12.3	7.7	6.2	3.0	2.2	2.4	7.1	
Equity attributable to owners of parent	47 4	FC 1	F0 0	62.0	<b>CO 0</b>	61.1	CAC	65.6	
to total assets ratio (%)	42.1	56.1	58.9		60.8		64.6		
Net debt-to-equity ratio (times)*5			(0.33)	(0.24)	(0.20)	(0.23)	(0.25)	(0.34)	
Interest coverage ratio (times)*6	20.8	24.9	54.2	41.7	52.0	68.4	72.6	124.2	
Dividend payout ratio (%)	24.1	20.3	30.8	43.1	87.7	76.3	71.5	33.7	
Ratio of total amount of dividends to equity									
attributable to owners of parent (%)*7	4.9	5.1	4.1	4.4	4.3	2.7	2.7	3.7	

\*1 R&D expense for FY2011 (IFRS) to FY2018 lists the amount invested in research and development, including partially capitalized development expenses. Accordingly, it is not the same as

R&D expense listed on the Consolidated Statement of Profit or Loss and Other Comprehensive Income.

\*2 Return on equity: Profit attributable to owners of parent / Equity attributable to owners of parent (IFRS); Net income / Shareholders' equity (J-GAAP)

\*3 Anritsu Capital-cost Evaluation: Net operating Profit after tax - Invested capital cost (IFRS: Net operating profit after tax - Invested capital cost)

\*4 Return on assets: Profit from continuing operations / Total assets (IFRS); Net income / Total assets (J-GAAP)

\*5 Net debt-to-equity ratio: (Interest-bearing debt – Cash and cash equivalents) / Equity attributable to owners of parent (IFRS); (Interest-bearing debt – Cash and cash equivalents) / Shareholders' equity (J-GAAP) \*6 Interest coverage ratio: Cash flows from operating activities / Interest expense \*7 Ratio of total amount of dividends to equity attributable to owners of parent: Total cash dividends / Net assets (IFRS: Total cash dividends / Total equity)

\*8 Dividend on equity ratio (DOE): Total cash dividends / Total Equity

\* The U.S. dollar amounts in this report represent translations of Japanese yen, for convenience only, at the rate of ¥111.00 to U.S. \$1.00, the approximate exchange rate on March 31, 2019.

FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
3,681 (1,475)	3,771 (1,577)	3,880 (1,674)	3,926 (1,714)	3,846 (1,602)	3,788 (1,539)	3,717 (1,466)	3,778(1,530)
14%	8%	9%	9%	8%	8%	6%	6%
59%	59%	59%	56%	64%	72%	66%	58%
60%	82%	74%	72%	83%	105%	118%	112%
54%	57%	78%	66%	63%	73%	73%	86%
48%	45%	47%	44%	44%	47%	47%	48%
0	1	1	1	2	0	3	2
9	7	8	8	3	5	8	4
0	1	0	2	2	0	2	2
4	9	5	8	7	4	2	12
0.00	0.00	0.00	0.76	0.64	0.21	0.00	0.00
—	15,383	13,421	15,065	15,109	14,279	12,797	12,736
8,345	8,064	7,987	7,962	8,265	7,983	7,698	7,774
127,713	112,800	104,426	94,931	82,794	80,352	70,837	72,777
 28	29	30	32	39	44	49	49

## Management's Discussion and Analysis

The Anritsu Group has adopted IFRS since the fiscal year ended March 31, 2013 and prepared consolidated financial statements in conformity with IFRS in fiscal 2015, 2016, 2017, 2018 and 2019.

#### The Scope of Consolidation

The Anritsu Group comprised 43 consolidated subsidiaries and one affiliate at the end of the fiscal year.

#### **Overview**

During the fiscal year ended March 31, 2019, the global economy showed continued gradual expansion, primarily in the advanced countries. The Japanese economy continued to recover, driven by strong corporate profits and improvement in the employment environment. However, uncertainties increased due to confrontations of US-China trade friction and trade protectionism.

In the field of information and communication, mobile broadband services are growing both in terms of quality and quantity, and the volume of mobile data transmission is increasing rapidly, which is compelling the network infrastructure. In order to solve these issues, 4G mobile communications systems are evolving continually to become LTE (Long-Term Evolution) and LTE-Advanced, and then LTE-Advanced Pro (Gigabit LTE). In addition, specification development of the next-generation 5G communications system is proceeding in 3GPP. The standardization of 5G NSA-NR (Non-Standalone New Radio) finished in December 2017 and the one of 5G SA-NR (Standalone New Radio) finished in June 2018. All specifications have been set for the 5G main functions that are related to ultrahigh speed communication. Furthermore, in 3GPP, specification development of ultralow latency communications and multiple simultaneous connections for expansion of use case is under consideration and the standardization will be expected to be finished in early 2020. As a result, major carriers worldwide have created a concrete roadmap for 5G commercialization and the commercialization schedule is progressing steadily. Precursory 5G services using mobile routers were launched in North America and South Korea in December 2018. Furthermore, 5G smartphone services were launched from April 2019. Major device vendors in America and Asia developed devices that are used in 5G smartphone services and announced them at MWC (Mobile World Congress) 2019.

Amid such environment, the Measurement Business Group has focused on solution development for the 5G investment demand as well as organizational infrastructure. Consequently, this group acquired initial development demand for 5G chipsets and devices.

In the field of PQA (Product Quality Assurance), automation investment for processed food production lines is underway, and demand is growing steadily for contaminant inspection using X-rays and quality guarantee for packaging. Amid this environment, the PQA Group has worked to reinforce the competitiveness of its solutions focused on X-rays, as well as enhance and expand its global sales structure.

#### Revenue

During the fiscal year ended March 31, 2019, in the Test and Measurement segment, initial development demand for 5G chipsets and mobile devices exceeded expectations, primarily in the mobile market in North America and Asia. Furthermore, internal demand in the U.S. was strong in the network and infrastructure market. Consequently, revenue and profit in the Test and Measurement segment increased compared with the previous fiscal year. In the Products Quality Assurance segment, during the fiscal year ended March 31, 2019, led by the heightened focus on food and pharmaceutical product safety and security, as well as against a backdrop of accelerating trends for automation due to the labor shortage, we have been steadily continuing capital investment with the aim of automating and strengthening quality assurance processes in the food product market both in Japan and overseas. Also, investment was made to strengthen sales capabilities in overseas markets. As a result, revenue and profit in the Products Quality Assurance (PQA) segment increased.

As a result, orders increased 13.9% compared with the previous fiscal year to ¥100,819 million, and revenue increased 15.9% compared with the previous fiscal year to ¥99,659 million. Operating profit increased 128.9% compared with the previous fiscal year to ¥11,246 million, profit before tax increased 146.9% compared with the previous fiscal year to ¥11,362 million. Profit increased 210.2%

compared with the previous fiscal year to ¥8,991 million, and profit attributable to owners of parent increased 210.9% compared with the previous fiscal year to ¥8,956 million.



#### **Cost of Sales and Gross Profit**

Cost of sales increased ¥4.783 million, or 10.9%, to ¥48,807 million. Cost of sales as a percentage of total revenue was 49.0%, down 2.2 percentage point compared with the previous fiscal year. Gross profit increased ¥8.908 million, or 21.2%, to ¥50,852 million. The gross margin amounted to 51.0%.

#### Selling, General and Administrative (SG&A) Expenses and Operating Profit

SG&A expenses increased 5.2% over the previous fiscal year, to ¥27,944 million. Research and development (R&D) expenses increased 15.4%, to ¥11,715 million and amounted to 11.8% of consolidated total revenue. As a result of the above factors, operating profit increased 128.9%, or ¥6,334 million, to ¥11,246 million. The operating profit ratio was 11.3%.

#### SG&A Expenses

	Mil	YoY	
Year ended March 31	FY2018	FY2017	(%)
Personnel expenses	¥18,266	¥17,423	4.8
Travel and transportation expenses	1,563	1,599	(2.3)
Advertising expenses	1,305	1,211	7.8
Depreciation and amortization expenses	1,403	1,276	9.9
Others	5,406	5,053	7.0



#### **Profit before Tax and Profit**

Operating profit increased 128.9% compared with the previous fiscal year, to ¥11,246 million, and profit before tax increased 146.9% compared with the previous fiscal year, to ¥11,362 million. Profit increased 210.2% compared with the previous fiscal year, to ¥8,991 million, and profit attributable to owners of the parent rose ¥6.075 billion, to ¥8,956 million. Comprehensive income for the period rose ¥5,527 million, to ¥9,381 million.

Also, due to revision of income tax payables related to the uncertainty of income taxes, income tax expense of our US subsidiaries decreased by approximately ¥500 million. As a result, income tax expense for the fiscal year ended March 31, 2019 increased 39.2% compared with the same period of the previous fiscal year to ¥2,371 million.

#### Cost of Sales, Expenses, and Profit as a Percentage of Revenue

			%
Year ended March 31	FY2018	FY2017	FY2016
Revenue	100.0	100.0	100.0
Cost of sales	49.0	51.2	51.5
Gross profit	51.0	48.8	51.3
SG&A expenses	28.0	30.9	31.0
R&D expenses	11.8	11.8	12.4
Profit	9.0	3.4	3.1

#### **Shareholder Return Policies**

#### **Dividend Policy**

The Company's basic policy for returning profits to its shareholders is to distribute profits in accordance with its consolidated performance and take into account the total return ratio. With regard to dividends, while taking the basic approach of raising dividends on equity in accordance with the increase in consolidated profits for the fiscal year, the Company aims at a consolidated dividend payout ratio of 30% or more. The Company's basic policy is to make distributions of dividends, twice a year, consisting of a fiscal year-end dividend and an interim dividend by resolution of the General Meeting of Shareholders and by approval of the Board of Directors. The Company intends to appropriately carry out the purchase of treasury stock as necessary, by taking into account its financial situation, the trends in stock prices, and other factors, in an effort to execute capital policies that respond flexibly to changes in the corporate environment. The Company's basic policy is to apply retained earnings to research and development and capital investment in order to respond to rapid technological advances and changes in the market structure.

#### **Cash Dividends per Share**

Anritsu plans to pay a year-end dividend of ¥13.5 per share as initially scheduled, and total dividends for the fiscal year will be ¥22.0 per share for the fiscal year ended March 31, 2019.

For the fiscal year ending March 31, 2020, Anritsu plans to pay dividends of ¥22 per share, including an interim dividend of ¥11 per share.

#### **Business Segments**

The Anritsu Group classifies operations into the segments of Test and Measurement, Products Quality Assurance, and Others. In order to evaluate each business segment more appropriately, the headquarter administrative expenses portion of general and administrative expenses for each business segment has been shifted to be included in company-wide expenses starting from the fiscal year ended March 31, 2019. These expenses from the previous fiscal year have been restated.

#### **Test and Measurement**

This segment develops, manufactures and sells measuring instruments and systems for a variety of communications applications, and service assurance, to telecom operators, manufacturers of related equipment, and maintenance and installation companies around the world.

During the fiscal year ended March 31, 2019, initial development demand for 5G chipsets and mobile devices exceeded expectations, primarily in the mobile market in North America and Asia. Furthermore, internal demand in the U.S. was strong in the network and infrastructure market. Consequently, segment revenue increased 25.2% compared with the previous fiscal year to ¥68,168 million, operating profit increased 338.3% to ¥9,413 million and adjusted operating profit\* increased 274.5% to ¥9,413 million.

\* Adjusted operating profit is Anritsu's original profit indicator to measure results of its recurring business by excluding profit and loss items with a transient nature from operating profit.

The Test and Measurement business, which accounts for 68% of the Anritsu Group's revenue, is divided into the following 3 sub-segments.

#### 1. Mobile

The Mobile sub-segment includes measuring instruments for mobile phone acceptance testing by mobile phone service operators, and for design, production, function and performance verification, and maintenance of mobile phone handsets by manufacturers of mobile phones including smartphones, IC chipsets and relevant components.

Demand in this sub-segment tends to be influenced by factors including the technological innovations in mobile phone services, market penetration, number of new subscribers as well as new entries in and withdrawals from the market by mobile phone and chipset manufacturers, and the number of model changes and shipments of mobile phones and chipsets. Currently, a variety of mobile broadband services offered through mobile phones that support LTE are deployed in various countries around the world. Leading mobile phone and chipset manufacturers and telecom operators have continued to develop their services from LTE-Advanced to LTE-Advanced Pro with the aim of providing more sophisticated high-quality services. However, the growth rate of the total shipment of smartphones has reached a saturated level in the market, and as a result, investment continued to be restrained in the mobile phone-related market.

On the other hand, for next-generation 5G communications systems that continue with LTE, in December 2017, the specifications for NSA-NR were formulated and this was followed by specifications for SA-NR in June 2018, which concluded the first phase of standardization. In line with this, the development roadmap outlining full-fledged introduction of 5G in 2020 is now underway, and there is now real demand for 5G measurement. In addition, in the IoT field, which has high potential for 5G use cases, and the automated driving and in-vehicle telecom field in the automobile industry, the development of mobile communications technology to realize new services is also actualizing as a business opportunity.

Anritsu will continue to develop and launch competitive leading-edge measuring solutions, as well as accurately conduct development portfolio management, to strengthen the revenue base.

#### 2. Network Infrastructure

The Network Infrastructure sub-segment includes network construction maintenance, monitoring and service quality assurance solutions for wireline and wireless service providers, and solutions for communications equipment manufacturers in areas including design, production, and testing.

In this sub-segment, data traffic is expanding rapidly due to sophisticated cloud computing services and the spread of mobile broadband services. Therefore, telecom operators and equipment manufacturers that are pursuing higherspeed networks are concentrating on the promotion of 100Gbps services and research and development in 400Gbps network equipment. Moreover, in order to improve mobile phone connectivity, progress is being made towards the efficient densification of base station networks by integrating wired and wireless network technologies. Along with the change in market trends, demand is growing for measuring solutions that optimize wireline and wireless technology depending on the intended use. Furthermore, mainly owing to the increase in data centers supporting cloud services, the market for high-speed data communications equipment is expanding. Along with this, research and development and the manufacturing markets for highspeed optical communications modules are growing, and their competition has become intense.

Anritsu is working to expand business by providing comprehensive solutions from constructing and monitoring communications infrastructure to ensuring service quality in addition to research and development solutions for telecommunications equipment.

#### 3. Electronics

The Electronics sub-segment includes measuring instruments widely used in the electronics industry, particularly for design, production and evaluation of electronic devices used in telecommunications network-related communications equipment and other electronic equipment.

Demand in this sub-segment tends to be impacted by the scale of production of electronic components and products used in telecommunications equipment, intelligent home appliances and automobiles.

The expansion of IoT service using mobile broadband services and LPWA (Low Power Wide Area) devices is driving growth in demand for measuring solutions for development and manufacturing of wireless modules for a broad array of applications. Furthermore, various wireless systems have been digitalized for effective use of frequency resources. Demand for measuring solutions for manufacturing and maintenance of new systems is also steadily growing. Anritsu will work to further expand the business in this sub-segment by offering a wider range of solutions for the electronics market.

#### **Products Quality Assurance**

The Products Quality Assurance business accounts for 23% of Anritsu Group's revenue. Since more than 80% of segment revenue comes from food manufacturers, this segment is substantially influenced by a heightened consciousness on food safety and security and changes in consumer spending which extend to the results for food manufacturers' business.

Core products include highly precise checkweighers for high-speed food processing lines, as well as X -ray and other inspection systems that detect and remove metal fragments, stones, and other alien materials in the food processing process with high precision. In the Japanese market, capital investment for automation to reduce labor in food production lines has steadily increased, against a backdrop of the customer concerns regarding contamination and rising needs for automation due to the labor shortage. In particular, there is a strong demand for general quality control software solutions for food and pharmaceutical product manufacturing lines that can be used to monitor operating conditions, collect and analyze information in relation to quality, improve yield, and enhance quality management.

In the overseas markets, progress was made toward cultivating loyal customers' needs, and customers that are operating their businesses globally in regions such as the Americas, Europe, and China. The overseas sales ratio of this business is roughly 44%. Demand for quality control inspection solutions is expected to remain firm in every region of the world, as interest among food manufacturers remains high. To meet this demand, Anritsu will develop and deliver new products and quality assurance solutions, and will optimize its supply chain including overseas production in order to expand the business and increase profitability.

As a result, segment revenue increased 2.3% compared with the previous fiscal year to ¥23,074 million and operating profit decreased 18.3% compared with the previous fiscal year to ¥1,609 million.

#### Others

This segment comprises Information and Communications, Devices, Logistics, Welfare services, Real estate leasing, and other businesses.

During the fiscal year ended March 31, 2019, the Device business performance was sluggish due to intense price competition. As a result, segment revenue decreased 6.3% compared with the previous fiscal year to ¥8,416 million, and operating profit decreased 21.5% compared with the previous fiscal year to ¥1,145 million.





#### **Liquidity and Financial Condition**

**Fund Procurement and Liquidity Management** The Anritsu Group's funding requirements are mainly for working capital to purchase materials and cover expenses incurred in the manufacturing, sales, and marketing of products; for capital investments; and for research and development expenses. The Group secures sufficient funding to cover these requirements from retained earnings, bank borrowings, and capital market funding. To ensure stability in funding, the Anritsu Group arranged for a commitment line of ¥7.5 billion in March 2017, which is effective through March 2020. Looking forward, while preparing for unforeseen financial risks, both domestic and overseas, in a dramatically changing market environment, the Anritsu Group will swiftly and flexibly meet its capital requirements for working capital, regular repayment of long-term borrowings, and business growth.

As of March 31, 2019, the balance of interest-bearing debt (excluding lease payables) was ¥16,248 million (compared with ¥15,944 million at the end of the previous fiscal year), and the debt-to-equity ratio was 0.19 (compared with 0.20 at the end of the previous fiscal year). And the net debt-to-equity ratio was a negative 0.34 (compared with a negative 0.25 at the end of the previous fiscal year). In addition, the average turnover ratio on the end-of-period balance of inventories to revenue was 5.4 times.

The Company will utilize increased cash flow generated by improvements in ACE (achievement of net operating profit after tax less an adjustment for the cost of capital) and CCC as well as enhanced capital efficiency resulting from measures including an internal group cash management system to make further reductions in interest-bearing debt, improve the debt-to-equity ratio, enhancing shareholders' equity, and fortify its financial structure. At the end of March 2019, Rating and Investment Information, Inc. (R&I) rated Anritsu's short-term debt a-1 and its long-term debt A-. Anritsu will continue working to enhance its financial stability in order to improve its debt rating.

Notes: 1. ACE (Anritsu Capital-cost Evaluation): Net operating profit after tax – Cost of capital (5%)

2. Debt-to-equity ratio: Interest-bearing debt / Equity attributable to owners of

parent 3. Net debt-to-equity ratio: (Interest-bearing debt – Cash and cash equivalents) / Equity attributable to owners of parent

4. CCC: Cash Conversion Cycle

#### **Cash Flow**

In the fiscal year ended March 31, 2019, cash and cash equivalents (hereafter, "net cash") increased ¥9,644 million compared with the end of the previous fiscal year, to ¥45,097 million.

Free cash flow, the sum of cash flows from operating activities and cash flows from investing activities, was a positive ¥11,631 million (compared with a positive ¥4,014 million in the previous fiscal year).

Conditions and factors for each category of cash flow for the fiscal year were as follows.

#### Cash Flows from Operating Activities

Net cash provided by operating activities was ¥12,247 million (in the previous fiscal year, operating activities provided net cash of ¥7,946 million). The cash increase was due to reporting of profit before tax and recording depreciation and amortization expense; on the other hand, the cash decrease was mainly due to an increase in trade and other receivables. Depreciation and amortization expense was ¥4,386 million, an increase of ¥101 million compared with the previous fiscal year.

## Management's Discussion and Analysis

#### • Cash Flows from Investing Activities

Net cash used in investing activities was ¥616 million (in the previous fiscal year, investing activities used net cash of ¥3,932 million). The cash decrease was mainly due to acquisition of property, plant and equipment, and on the other hand, the cash increase was due to proceeds from sale of other financial assets.

#### • Cash Flows from Financing Activities

Net cash used in financing activities was ¥2,052 million (in the previous fiscal year, financing activities used net cash of ¥8,201 million). The primary reason was payment of cash dividends totaling ¥2,198 million (in the previous fiscal year, payment of cash dividends was ¥2,059 million).

#### Assets, Liabilities, and Equity

Assets, liabilities, and equity as of March 31, 2019 were as follows. Assets increased ¥9,277 million compared with the end of the previous fiscal year to ¥130,467 million. This was mainly due to an increase of cash and cash equivalents, as well as trade and other receivables, while property, plant and equipment, as well as other financial assets decreased. Total liabilities increased ¥1,912 million compared with the end of the previous fiscal year to ¥44,789 million. This was mainly due to an increase of employee benefits, while trade and other payables decreased. Equity increased ¥7,364 million compared with the end of the previous fiscal year to ¥85,678 million. This was mainly due to increase of retained earnings. As a result, the equity attributable to owners of parent to total assets ratio was 65.6%, compared with 64.6% at the end of the previous fiscal year.







**Business Review** 

ESG

#### **Capital Expenditures**

To achieve sustainable growth and profit increases in the future, the Anritsu Group is making strategic investments, such as new-product development focused on product areas where long-term growth is expected and systems-related investments are aimed at labor saving and streamlining of operations.

In the Test and Measurement business, we invested in new product development in order to handle rapid technological innovation and sales competition and also conducted investments to reduce costs.

In the Products Quality Assurance business, we primarily invested with the aim of enhancing appropriate global information systems and developing, manufacturing and maintaining processes.

In other business, we made capital investments, mainly in the device business, aimed at increasing production capacity and improving product quality.

The breakdown of investments is shown in the following table. (Figures for tangible fixed assets and intangible assets are on a received basis. Figures exclude development costs of intangible assets. Figures do not include consumption taxes, etc.).

#### **Overview of Capital Expenditures**

١	YoY	
FY2018	FY2017	(%)
¥1,591	¥2,724	58.4
505	382	132.4
2,097	3,107	67.5
339	323	104.9
2,436	¥3,430	71.0
	FY2018 ¥1,591 505 2,097 339	¥1,591         ¥2,724           505         382           2,097         3,107           339         323



#### **Research and Development**

The Anritsu Group conducts R&D related to the development of "Original & High Level" products and services in its R&D centers in Japan, the Americas, and Europe, with the aim of contributing to the realization of global societies that are "safe, secure, and prosperous."

In the Test and Measurement segment, Anritsu Corporation, Anritsu Company (United States), Azimuth Systems, Inc. (United States), Anritsu Ltd. (United Kingdom), and Anritsu A/S (Denmark) are working together to further realize synergies among their technologies through supplementing and complementing each other's technological strengths.

The Products Quality Assurance segment is conducting R&D within Anritsu Infivis Co., Ltd.

## Management's Discussion and Analysis

Accompanying the application of the International Financial Reporting Standards (IFRS), the Anritsu Group capitalized certain of its development investments and presented these amounts among intangible assets. The breakdown of R&D investments during the fiscal year, including those presented in intangible assets, is shown below.

#### **Research and Development**

	Millions of yen	% of	Millions of yen	% of
Year ended March 31	FY2018	revenue	FY2017	revenue
Test and Measurement	¥ 9,086	13.3	¥ 7,609	14.0
PQA	2,174	9.4	2,283	10.1
Others	526	6.3	471	5.2
Basic Research	220	—	191	_
Total	¥12,008	12.0	¥10,556	12.3

Principal results of R&D programs in each business segment are as follows.

Business Segment	Model	Product	Application	Contribution
Test and Measurement	MT8000A	Radio Communication Test Station	With a 5G base station emulation function, a single MT8000A test platform supports both the sub-6 GHz, including band n41, and the millimeter wave bands used by 5G. Combining it with the OTA Chamber enables both millimeter wave band RF measurements and beamforming tests using call connections specified by 3GPP.	<ul> <li>All-in-One Support for RF Measurements and Protocol Tests in Sub-6 GHz and Millimeter Wave Bands</li> <li>Supports mm-wave band RF measure- ments and beam forming tests com- bined use with the RF chamber.</li> <li>Is a Flexible Platform using Modular Architecture</li> <li>Supports Existing LTE Test Environment</li> </ul>
	5G NR Mobile based Protocol C Device Test Carrier Acceptar Platform devices incorpor Technologies (RA 5G New Radio (f Standalone and		The ME7834NR is the test platform for 3GPP based Protocol Conformance Tests (PCT) and Carrier Acceptance Testing (CAT) of mobile devices incorporating Multiple Radio Access Technologies (RAT). The ME7834NR supports 5G New Radio (NR) Technology in both Standalone and Non-Standalone mode, in addi- tion to LTE, LTE-Advanced (LTE-A), LTE-A Pro, and W-CDMA.	<ul> <li>All-in-One 5G NR Support for Protocol Conformance Tests and Carrier Acceptance Test</li> <li>Supports 3GPP defined bands from Sub-6GHz to mm-Wave</li> <li>Upgrades your current ME7834 system for 5G</li> </ul>
ME7873N	ME7873NR	New products New Radio RF Conformance Test System	The New Radio RF Conformance Test System ME7873NR is an automated system for 3GPP TS38.521/TS38.533-defined 5G NR RF/RM tests. It supports both planned 5G NR Standalone (SA) and Non-Standalone (NSA) modes, while combination with Anritsu's 5G over-the-air (OTA) chamber (CATR) covers all 5G frequency bands, including not only Sub-6 GHz but also mmWave.	<ul> <li>GCF/PTCRB-approved 5G NR test cases</li> <li>Meets 3GPP standards</li> <li>Is an upgrade from ME7873LA for LTE systems (sub-6 GHz)</li> <li>Covers different regional frequency bands</li> <li>Provides easy sequence creation and editing</li> <li>Emphasizes test system measurement stability</li> </ul>
	MS2090A	New products Field Master Pro	Anritsu's Field Master Pro MS2090A real time spectrum analyzer delivers performance never previously available in a compact, handheld instrument. With continuous frequency cover- age from 9 kHz to 54 GHz, the Field Master Pro MS2090A is specifically designed to meet the test challenges of a full range of other wireless technologies in use today, including: 5G, wire- less backhaul, aerospace/defense, satellite sys- tems, and radar.	<ul> <li>9 kHz to 9/14/20/26.5/32/43.5/54 GHz</li> <li>DANL: -164 dBm (with preamp)</li> <li>TOI: +20 dBm (typical)</li> <li>Analysis bandwidth: 100 MHz</li> <li>Amp range: DANL to +30 dBm</li> <li>Phase noise at 1 GHz: -110 dBc/Hz @ 100 kHz offset (typical)</li> <li>Demodulation: 5GNR, RF, and modulation quality plus SSB signal analysis</li> </ul>

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#### **Management Objectives and Indicators**

To attain its management vision of "continuous growth with sustainable superior profits," the Anritsu Group had prepared its 2020 VISION, which has a time horizon of 10 years, and established a medium-term milestone plan entitled the Mid-term Business Plan GLP2020 (a three-year plan that ended in FY2020), which is based on the 2020 VISION.

In order to implement GLP2020 without fail, the Anritsu Group is working to (1) reliably acquire growth drivers, (2) create a strong profit-generating platform, and (3) build pillars to support the next-generation business.

		Bil	lions of yen
Year ended March 31	FY2017 (Actual)	FY2018 (Actual)	FY2019 (Forecast)
Revenue	86.0	99.7	102.0
Operating profit	4.9	11.2	10.0
Profit	2.9	9.0	7.5
ACE	(1.6)	4.0	2.5
ROE (%)	3.7	10.9	8

#### Outlook and Management Issues for the Year Ending March 31, 2020

Although the global economy has been on a recovery trend, there is emerging uncertainty regarding factors such as the U.K.'s withdrawal from the EU, increased trade friction between the U.S. and China, and the rise of trade protectionism.

In the field of information and communication, precursory 5G services have been launched in North America and South Korea in December 2018, and 5G smartphones would be launched in 2019. Going forward, preparations for the full-fledged commercialization of 5G are expected to accelerate around the world, including Japan.

In the Test and Measurement segment, while device development demand for the full-fledged commercialization of 5G grew, LTE-Advanced demand will continue to fall. As a result revenue is expected to increase slightly compared with the previous fiscal year. With regard to operating profits, decreased profit is expected due to aggressive investment in strategic R&D to strengthen 5G competitiveness. In the network infrastructure market, in order to acquire the network reshaping market which is expanding due to the explosive increase in demand for data traffic and data centers as a result of the expansion of services, we will reinforce our competitiveness.

For the Products Quality Assurance segment, revenue is expected to increase both in the Japanese and overseas markets. Operating profit is also expected to increase compared with the previous fiscal year.

The Anritsu Group aims to establish a position as a leading company in the 5G development market through the timely provision of solutions that accurately match the commercialization plans of operators in various countries.

#### **Risk Information**

#### 1. Inherent Risks in the Anritsu Group's Technology and Marketing Strategies

The Anritsu Group works to deploy its well-developed technological capabilities to promptly provide cutting-edge products and services that offer value to customers. However, the rapid pace of technological innovation in the Anritsu Group's core information and communication markets and the Anritsu Group's ability to deliver products and services in a timely manner to meet the needs and wants of customers are factors that have the potential to exert a material impact on the Anritsu Group's financial condition and operating results.

#### 2. Market Fluctuation Risk

External factors including changes in the economy or market conditions and technological innovation affect the profitability of product lines the Group develops and have the potential to exert a significant material impact on the Anritsu Group's financial condition and operating results.

Because a high percentage of the Test and Measurement segment revenue comes from the telecommunications market, capital investment trends among telecom operators, telecommunications equipment manufacturers and electronic component manufacturers have the potential to exert an effect on business results. Telecom operators make a cost-effective capital investment in order to adopt technologies to handle rapid increases in data traffic, and to build networks that meets the various needs of IoT service and cloud service. Moreover, business results for the mobile communications measuring instrument field, the cornerstone of earnings for the Anritsu Group, are affected by changes in technological innovation in mobile phone services, the number of subscribers, and the replacement ratio for smartphones.

In the Products Quality Assurance business, sales to food manufacturers constitute more than 80% of revenue. Operating results and capital investment of food manufacturers may influence the performance of Products Quality Assurance business potentially.

#### 3. Global Business Development Risks

The Anritsu Group markets its products globally, and conducts business in the Americas, Europe, Asia, and elsewhere. In particular, the overseas sales ratio including both the Test and Measurement business and the Products Quality Assurance business is 68%, and many customers likewise operate on a global scale. As a result, economic trends in countries worldwide, changes in international conditions, compliance with required laws and regulations, and progress in the Anritsu Group's global strategy have a potential to exert a material impact on the Group's financial position and results of operations. In addition, global-scale mergers, acquisitions, and realignments in the telecommunications industry are changing the competitive landscape. Significant changes in capital investment trends that result have the potential to exert a material impact on the Anritsu Group's financial condition and operating results.

#### 4. Foreign Exchange Risk

The Anritsu Group's sales outside Japan account for 68% of consolidated revenue. The Anritsu Group hedges foreign exchange risk using instruments including forward foreign exchange contracts for foreign exchange transactions that occur upon collection of accounts receivable and other events. However, rapid changes in foreign exchange rates have the potential to exert a material impact on the Anritsu Group's financial condition and operating results.

#### 5. Long-Term Inventory Obsolescence Risk

The Anritsu Group works to provide products and services that precisely meet customer needs and wants. However, particularly in the test and measuring instruments market, product lines are subject to rapid change in technology, which can easily result in obsolescence of products and parts, and cause inventory held for long periods to lose its value. These factors have the potential to exert a material impact on the Anritsu Group's financial condition and operating results.

#### 6. Risk Related to Deferred Tax Assets

The Anritsu Group applies deferred tax accounting and recognizes deferred tax assets. Calculation of deferred tax assets is based on projections that include estimates of future taxable profit, and the actual benefit may differ from the projection. If the tax benefits based on the estimate of future taxable profit are judged to be unavailable, these deferred tax assets are written down, which has the potential to exert a material impact on the Anritsu Group's financial condition and operating results.

#### 7. Risk related to Defined-Benefit Pension Plan

The amounts of retirement benefit payments and obligations incurred in connection with employee defined-benefit pension plans of the parent company and certain of its subsidiaries are calculated based on assumptions, including discount rates, made for actuarial calculations. If the discount rates and other assumptions, which were made for the actuarial calculations of the expected amount of obligations under these defined-benefit pension plans undergo change, this has the potential to exert a material impact on the Anritsu Group's financial condition and operating results.

#### 8. Risk of Natural Disasters and Other Unexpected Events

The Anritsu Group operates production and sales activities globally. Consequently, the occurrence of major earthquakes or other natural disasters, fires, wars, acts of terrorism or violence could exert a material impact on the Anritsu Group's financial condition and operating results by disrupting the business activities of the Anritsu Group or its suppliers and customers due to damage to key facilities, or by causing political or economic instability.

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## **Consolidated Statement of Financial Position**

March 31, 2018 and 2019

		Millions of yen	Thousands of U.S. dollars*
	End of FY2017	End of FY2018	End of FY2018
	as of March 31, 2018	as of March 31, 2019	as of March 31, 2019
Assets			
Current assets:			
Cash and cash equivalents (Notes 8 and 36)	¥ 35,452	¥ 45,097	\$ 406,279
Trade and other receivables (Notes 9 and 36)	21,474	25,055	225,721
Other financial assets (Notes 11 and 36)	1,164	537	4,838
Inventories (Note 10)	18,236	18,585	167,432
Income tax receivables	128	343	3,090
Other assets	3,120	3,375	30,405
Total current assets	79,576	92,994	837,784
Non-current assets:			
Property, plant and equipment (Note 12)	25,947	24,221	218,207
Goodwill and intangible assets (Note 13)	3,993	3,586	32,306
Investment property (Note 14)	1,463	830	7,477
Trade and other receivables (Notes 9 and 36)	326	305	2,748
Other financial assets (Notes 11 and 36)	2,747	1,670	15,045
Deferred tax assets (Note 16)	7,125	6,814	61,387
Other assets	9	45	405
Total non-current assets	41,613	37,473	337,595
Total assets	121,190	130,467	1,175,378
Liabilities and Equity			
Liabilities			
Current liabilities:			
Trade and other payables (Notes 17 and 36)	7,998	7,599	68,459
Bonds and borrowings (Notes 18 and 36)	4,467	5,270	47,477
Other financial liabilities (Notes 19, 20, and 36)	73	70	631
Income tax payables	2,352	3,053	27,505
Employee benefits (Note 21)	5,254	6,829	61,523
Provisions (Note 22)	323	424	3,820
Other liabilities (Note 23 and 26)	6,333	7,003	63,090
Total current liabilities	26,803	30,251	272,532
Non-current liabilities:			
Trade and other payables (Notes 17 and 36)	500	435	3,919
Bonds and borrowings (Notes 18 and 36)	11,477	10,978	98,901
Other financial liabilities (Notes 19, 20, and 36)	153	124	1,117
Employee benefits (Note 21)	2,247	1,100	9,910
Provisions (Note 22)	108	111	1,000
Deferred tax liabilities (Note 16)	185	197	1,775
Other liabilities (Note 23 and 26)	1,400	1,590	14,324
Total non-current liabilities	16,073	14,538	130,973
Total liabilities	42,876	44,789	403,505
Equity:			
Common stock (Note 24)	19,064	19,113	172,189
Additional paid-in capital (Note 24)	28,137	28,207	254,117
Retained earnings (Note 24)	26,254	33,442	301,279
Treasury stock (Note 24)	(987)	(1,133)	(10,207)
Other components of equity (Note 24)	5,761	5,930	53,423
Total equity attributable to owners of parent	78,230	85,560	770,811
Non-controlling interests	83	117	1,054
Total equity	78,313	85,678	771,874
Total liabilities and equity	¥121,190	¥130,467	\$1,175,378

\* The U.S. dollar amounts in this report represent translations of Japanese yen, for convenience only, at the rate of ¥111.00 to U.S. \$1.00, the approximate exchange rate on March 31, 2019.

# Consolidated Statement of Profit or Loss and Other Comprehensive Income

		Millions of yen	Thousands of U.S. dollars*
	End of FY2017	End of FY2018	End of FY2018
	as of March 31, 2018	as of March 31, 2019	as of March 31, 2019
Continuing operations	Water 51, 2010		March 91, 2019
Revenue (Notes 6 and 26)	¥85,967	¥99,659	\$897,829
Cost of sales (Note 29)	44,023	48,807	439,703
Gross profit	41,943	50,852	458,126
Other revenue and expenses		,	,
Selling, general and administrative expenses (Notes 27 and 29)	26,563	27,944	251,748
Research and development expense (Notes 28 and 29)	10,156	11,715	105,541
Other income (Note 30)	224	428	3,856
Other expenses (Note 30)	535	374	3,369
Operating profit (loss) (Note 6)	4,912	11,246	101,315
Finance income (Note 31)	332	387	3,486
Finance costs (Note 31)	642	271	2,441
Profit (loss) before tax	4,602	11,362	102,360
Income tax expense (Note 16)	1,703	2,371	21,360
Profit (loss) from continuing operations	2,898	8,991	81,000
Profit (loss)	2,898	8,991	81,000
Other comprehensive income			
Items that will not be reclassified to profit or loss			
Change of financial assets measured at fair value (Note 32)	181	69	622
Remeasurements of defined benefit plans (Note 32)	988	96	865
Total	1,169	165	1,486
Items that may be reclassified subsequently to profit or loss			
Exchange differences on translation (Note 32)	(213)	225	2,027
Total	(213)	225	2,027
Total of other comprehensive income	955	390	3,514
Comprehensive income (loss)	¥ 3,854	¥ 9,381	\$ 84,514
Profit (loss), attributable to:			
Owners of parent	¥ 2,880	¥ 8,956	\$ 80,685
Non-controlling interests	18	34	306
Total	¥ 2,898	¥ 8,991	\$ 81,000
Comprehensive income (loss) attributable to:			
Owners of parent	¥ 3,836	¥ 9,346	\$ 84,198
Non-controlling interests	18	34	306
Total	¥ 3,854	¥ 9,381	\$ 84,514
		Yen	U.S. dollars*
Earnings per share			
Basic earnings per share (Note 33)	¥20.97	¥65.20	\$0.59
Diluted earnings per share (Note 33)	20.97	65.16	0.59

\* The U.S. dollar amounts in this report represent translations of Japanese yen, for convenience only, at the rate of ¥111.00 to U.S. \$1.00, the approximate exchange rate on March 31, 2019.

# Consolidated Statement of Changes in Equity

Years ended March 31, 2018 and 2019

	FY2017 (From	April 1, 2017 to	March 31, 20	18)				Millions of yen
		Additional			Other	Total equity attributable	Non-	
	Common stock	paid-in capital	Retained earnings	Treasury stock	components of equity	to owners of parent	controlling interests	Total equity
Balance at April 1, 2017	¥19,052	¥28,169	¥24,394	¥(1,012)	¥5,794	¥76,398	¥87	¥76,485
Profit (loss)	_	_	2,880	_	_	2,880	18	2,898
Other comprehensive income (Note 32)	_	_	988	_	(32)	955	_	955
Total comprehensive income (loss)	_	_	3,868		(32)	3,836	18	3,854
Share-based payments (Note 35)	11	(32)	51	25		56	—	56
Dividends paid (Note 25)	_	_	(2,059)	_	_	(2,059)	_	(2,059)
Purchase of treasury stock (Note 24)	_	_		(0)		(0)	_	(0)
Disposal of treasury stock (Note 24)	_	0		0		0	_	0
Dividends to non-controlling interests	_	_		_		_	(0)	(0)
Changes in ownership interests in subsidiaries that result in a loss of control	_	_	_	_	_	_	(21)	(21)
Total transactions with owners and other transactions	11	(32)	(2,008)	25	_	(2,003)	(22)	(2,026)
Balance at March 31, 2018	¥19,064	¥28,137	¥26,254	¥ (987)	¥5,761	¥78,230	¥83	¥78,313

	FY2018 (From April 1, 2018 to March 31, 2019) Millions of yen							
Balance at April 1, 2018	¥19,064	¥28,137	¥26,254	¥ (987)	¥5,761	¥78,230	¥ 83	¥78,313
Cumulative effect by change in accounting policy (Note 2)	_	_	183	_	_	183	_	183
Balance at April 1, 2018 after change in accounting policy	19,064	28,137	26,438	(987)	5,761	78,414	83	78,497
Profit (loss)	_	_	8,956	_	_	8,956	34	8,991
Other comprehensive income (Note 32)	_	_	96	_	294	390	_	390
Total comprehensive income (loss)	_	_	9,052	_	294	9,346	34	9,381
Share-based payments (Note 35)	49	69	24	23	_	166	_	166
Dividends paid (Note 25)	—	—	(2,198)	—	—	(2,198)	—	(2,198)
Purchase of treasury stock (Note 24)	—	—	—	(168)	_	(168)	—	(168)
Dividends to non-controlling interests	_	_	_	_	_	_	(0)	(0)
Transfer from "other components of equity" to retained earnings	_	_	125	_	(125)	_	_	_
Total transactions with owners and other transactions	49	69	(2,047)	(145)	(125)	(2,200)	(0)	(2,201)
Balance at March 31, 2019	¥19,113	¥28,207	¥33,442	¥(1,133)	¥5,930	¥85,560	¥117	¥85,678

	FY2018 (From April 1, 2018 to March 31, 2019) Thousands of U.S. dollars*					of U.S. dollars*		
Balance at April 1, 2018	\$171,748	\$253,486	\$236,523	\$ (8,892)	\$51,901	\$704,775	\$ 748	\$705,523
Cumulative effect by change								
in accounting policy (Note 2)	—		1,649			1,649	_	1,649
Balance at April 1, 2018 after								
change in accounting policy	171,748	253,486	238,180	(8,892)	51,901	706,432	748	707,180
Profit (loss)	—	—	80,685	—		80,685	306	81,000
Other comprehensive income								
(Note 32)	—	—	865	—	2,649	3,514	—	3,514
Total comprehensive income (loss)	—	—	81,550	—	2,649	84,198	306	84,514
Share-based payments (Note 35)	441	622	216	207	_	1,495	_	1,495
Dividends paid (Note 25)	—	—	(19,802)	—	—	(19,802)	—	(19,802)
Purchase of treasury stock (Note 24)	—	_	—	(1,514)		(1,514)	_	(1,514)
Dividends to non-controlling interests	_	—	_	—	_	—	(1)	(1)
Transfer from "other components								
of equity" to retained earnings	—	_	1,126	—	(1,126)	_	—	
Total transactions with owners and								
other transactions	441	622	(18,441)	(1,306)	(1,126)	(19,820)	(1)	(19,829)
Balance at March 31, 2019	\$172,189	\$254,117	\$301,279	\$(10,207)	\$53,423	\$770,811	\$1,054	\$771,874

\* The U.S. dollar amounts in this report represent translations of Japanese yen, for convenience only, at the rate of ¥111.00 to U.S. \$1.00, the approximate exchange rate on March 31, 2019. Note: Details of Common stock, Additional paid-in capital, Retained earnings, Treasury stock and Other components of equity are described in Note 24, "Total Equity and Other Capital Items." 

## **Consolidated Statement of Cash Flows**

March 31, 2018 and 2019

		Millions of yen	Thousands of U.S. dollars*
	FY2017 (12 months) From April 1, 2017 to March 31, 2018	FY2018 (12 months) From April 1, 2018 to March 31, 2019	FY2018 (12 months) From April 1, 2018 to March 31, 2019
Cash flows from (used in) operating activities			
Profit (loss) before tax	¥ 4,602	¥11,362	\$102,360
Depreciation and amortization expense	4,285	4,386	39,514
Interest and dividends income	(238)	(335)	(3,018)
Interest expenses	128	103	928
Loss (gain) on disposal of property, plant and equipment	9	(241)	(2,171)
Decrease (increase) in trade and other receivables	(11)	(3,395)	(30,586)
Decrease (increase) in inventories	(1,973)	(64)	(577)
Increase (decrease) in trade and other payables	882	(452)	(4,072)
Increase (decrease) in employee benefits	376	536	4,829
Other, net	(47)	1,761	15,865
Subtotal	8,014	13,661	123,072
Interest received	179	272	2,450
Dividends received	58	62	559
Interest paid	(109)	(98)	(883)
Income taxes paid	(484)	(1,960)	(17,658)
Income taxes refund	287	309	2,784
Net cash flows from (used in) operating activities	7,946	12,247	110,333
Cash flows from (used in) investing activities (Note 34)			
Payments into time deposits	(1,215)	(545)	(4,910)
Proceeds from withdrawal of time deposits	1,200	1,135	10,225
Purchase of property, plant and equipment	(2,444)	(2,114)	(19,045)
Proceeds from sale of property, plant and equipment	2	714	6,432
Purchase of other financial assets	(2)	(3)	(27)
Proceeds from sale of other financial assets	0	1,177	10,604
Other, net	(1,473)	(980)	(8,829)
Net cash flows from (used in) investing activities	(3,932)	(616)	(5,550)
Cash flows from (used in) financing activities (Note 34)			
Net increase (decrease) in short-term borrowings	(100)	300	2,703
Redemption of bonds	(6,000)	—	—
Dividends paid	(2,059)	(2,198)	(19,802)
Other, net	(42)	(154)	(1,387)
Net cash flows from (used in) financing activities	(8,201)	(2,052)	(18,486)
Effect of exchange rate change on cash and cash equivalents	(41)	65	586
Net increase (decrease) in cash and cash equivalents	(4,229)	9,644	86,883
Cash and cash equivalents at beginning of period	39,682	35,452	319,387
Cash and cash equivalents at end of period (Note 8)	¥35,452	¥45,097	\$406,279

\* The U.S. dollar amounts in this report represent translations of Japanese yen, for convenience only, at the rate of ¥111.00 to U.S. \$1.00, the approximate exchange rate on March 31, 2019.

# Glossary

Term	Description
3GPP (3rd Generation	A project for developing third-generation (3G) mobile phone system standards that is currently developing interna-
Partnership Project)	tional standards for LTE, LTE-Advanced, and next-generation 5G.
5G New RAT (5G New Radio Access Technology)	New wireless communications technology for realizing 5G, the next-generation mobile phone system.
AOC (Active Optical Cable)	Cable that combines optical fiber and an electrical signal connector with an embedded optical-electric converter.
Connectivity	A general term signifying connections between and among mobile devices, etc. and other equipment and devices. This term is used to distinguish such modes as Wi-Fi, Bluetooth, NFC (Near Field Communication), and other com- munications modes, from cellular communications. Recently, connectivity has been extended to include automo- biles, digital cameras, home appliances, game devices, and healthcare devices.
CPRI (Common Public Radio Interface)	The publicly available specification for the key internal interface of radio base stations between the Radio Equipment Control (REC) and the Radio Equipment (RE). CPRI is the name of the industry cooperation defining the specification.
C-RAN (Cloud Radio Access Network)	C-RAN is one of the radio access network architectures. Each base station is equipped only with a Remote Radio Head. Base-Band Units for many cells are centralized as "Central Station" and it processes signals.
eCPRI/RoE	eCPRI refers to CPRI specifications from CPRI Corporation (the Industry Initiative for a Common Public Radio Interface). RoE (Radio over Ethernet) is a mobile front haul specification currently being studied by the Institute of Electrical and Electronic Engineers (IEEE). Both are focused on the Ethernet accommodation of radio signals.
Ethernet	World's most-widespread LAN (Local Area Network) standard.
IoT (Internet of Things)	IoT will not only allow computers and other communications devices to interact but also will give communications functions to manufacturing equipment in factories, appliances, and virtually all other things in the world around us. This will give these "things" interactive communications functions when connected with the Internet and will facilitate automatic control and remote measurement.
LTE (Long-Term Evolution)	High-speed mobile service that enables data communication at 5 to 10 times the speed of 3G mobile phone and telecommunications services.
LTE-Advanced	Fourth-generation (4G) mobile communications standard approved by the International Telecommunication Union (ITU). The goal is to run faster than LTE, which is becoming popular globally, using new technology such as carrier aggregation. The 3rd Generation Partnership Project (3GPP), which aims for greater functionality via high speeds, is currently setting the international standard.
MIMO (Multiple-Input and Multiple-Output)	A wireless communications technology that uses multiple antennas at the transmitter and receiver to transmit and receive data at the same frequency axis. Capable of increasing communications speeds, a key technology of LTE Advanced.
NB-IoT (Narrow Band-IoT)	IoT communications system that uses mobile phone networks and being standardized by 3GPP.
NFV (Network Functions Virtualization)	NFV offers a new way to design, deploy, and manage networking services by decoupling.
NSA-NR/SA-NR (Non- Standalone New Radio / Standalone New Radio)	5G standardization specification being developed by 3GPP. NSA-NR: Operating format through interworking of existing LTE and 5G. SA-NR: Operating format with 5G on a standalone basis.
OSS (Operation Support System)	Systems necessary for operating the businesses of telecommunications operators that offer mobile phone and other communications services
OTA (Over The Air)	Methods for testing wireless systems without the use of radio frequency (RF) cables
OTN (Optical Transport Network)	Transfer technology compatible with WDM transmission networks that houses various client signals like SHD and Ethernet and transmits data with a high degree of reliability.
PAM4: Pulse Amplitude Modulation 4)	A method to improve transmission capacity through four value amplitude modulation.
PCI-E (Peripheral Component Interconnect Express)	PCI is an expansion bus interface protocol used to insert an expansion card into a computer. PCI-E is a higher order protocol of PCI with a data rate up to 30 times faster than PCI.
Radio Frequency (RF) Measurement	Measurement of frequencies (among electromagnetic and electrical signals) that can use wireless signal trans- mission
SDH (Synchronous Digital Hierarchy)	International standards for synchronous digital hierarchy multiplex transmitter and demultilplexing method.
SDN (Software-Defined Network)	SDN is a way to manage networks that separates the control plane from the forwarding plane. SDN is a comple- mentary approach to network functions virtualization (NFV) for network management. While they both manage networks, both rely on different methods.
WDM (Wavelength Division Multiplexing)	Optical communications technology called Wavelength Division Multiplexing for large capacity signals.
Small Cells	A type of station for mobile communications, used typically to supplement the coverage of regular ground stations. Small cell stations have lower output power and are used to cover smaller areas. Small cells supplement macro cells with high output power, and are used to provide coverage to areas such as mountainous regions and buildings that macro cell signals cannot reach. Installations include the interiors of buildings that signals cannot penetrate.
Beam Forming	Technology that uses antennas that have multiple elements for controlling dynamically the strength of waves in certain locations.
Mobile edge computing	Used to reduce delay by bringing previously distant (cloud) application servers closer to the edge of the mobile network and end user.

## Investor Information (As of March 31, 2019)

Head Office:	ANRITSU CORPORATION 5-1-1 Onna, Atsugi-shi, Kanagawa 243-8555, Japan Tel: +81-46-223-1111 URL: https://www.anritsu.com
Established:	March 1931
Paid-in Capital:	¥19.1 billion
Number of Employees:	3,778 (Consolidated) 836 (Stand alone)
Stock Listing:	Tokyo (Ticker Symbol No: 6754)
Transfer Agent:	Sumitomo Mitsui Trust Bank, Limited 1-4-1, Marunouchi, Chiyoda-ku, Tokyo 100-8233, Japan
Number of	
Shareholders:	39,112
Rating:	Rating and Investment Information, Inc. Long-Term: A- Short-Term: a-1
Authorized Shares:	400,000,000
Issued Shares:	138,206,794

#### Major Subsidiaries

Japan	Principal Businesses
Anritsu Infivis Co., Ltd.	R&D, manufacture, sales, repair, and maintenance of PQA equipment
Tohoku Anritsu Co., Ltd.	Manufacture of Test & Measurement instru- ments and information and communications equipment
Anritsu Customer Support Co., Ltd.	Calibration, repair, and maintenance of Test & Measurement instruments
Anritsu Engineering Co., Ltd.	R&D of software
Anritsu Networks Co., Ltd.	R&D, sales, and maintenance of information and communications equipment
Anritsu Devices Co., Ltd.	R&D, manufacture, and sales of optical devices
Anritsu Kousan Co., Ltd.	Management of facilities, welfare services, and production of catalogs and other materials
Anritsu Real Estate Co., Ltd.	Real estate leasing
Anritsu Pro Associe Co., Ltd.	Operation of shared services center
AT Techmac Co., Ltd.	Manufacture and sales of processed products and unit assembly articles

Americas	Principal Businesses
Anritsu U.S. Holding, Inc. (U.S.A.)	Holding company for American subsidiaries
Anritsu Americas Sales Company (U.S.A.)	Sales and maintenance of measuring and other instruments
Anritsu Company (U.S.A.)	R&D, manufacture, sales and maintenance of measuring and other instruments
Azimuth Systems, Inc. (U.S.A.)	R&D, manufacture, and maintenance of measuring and other instruments
Anritsu Electronics, Ltd. (Canada)	Sales and maintenance of measuring and other instruments
Anritsu Eletrônica Ltda. (Brazil)	Sales and maintenance of measuring and other instruments
Anritsu Company S.A. de C.V. (Mexico)	Sales and maintenance of measuring and other instruments
Anritsu Infivis Inc. (U.S.A.)	Sales and maintenance of PQA equipment

Breakdown of Shareholders:

Foreign Investors 33.9%	Finance Institutio 38.7	ons
Oti	Securit Compan 4.2	nies
	Corporatio	her ons 9%

Major Shareholders		1.9%
Shareholder Name	Number of Shares (in Thousands)	Percentage of Total Shares Issued
Japan Trustee Services Bank, Ltd. (Trust Account)	20,574	14.96
The Master Trust Bank of Japan, Ltd. (Trust Account)	11,463	8.33
BBH FOR MATTHEWS ASIA DIVIDEND FUND	8,806	6.40
J.P. MORGAN BANK LUXEMBOURG S.A. 1300000	3,338	2.43
SSBTC CLIENT OMNIBUS ACCOUNT	2,846	2.07
Japan Trustee Services Bank, Ltd. (Trust Account 5)	2,528	1.84
Sumitomo Life Insurance Company	2,314	1.68
Trust & Custody Services Bank, Ltd. (Securities Investment Trust Account)	2,128	1.55
JP MORGAN CHASE BANK 385151	2,094	1.52
Japan Trustee Services Bank, Ltd. Sumitomo Mitsui Trust Bank, Limited. Retirement Benefit Trust Account	2,000	1.45

Note: The shareholding ratio is calculated by excluding the number of treasury stock (646,335 shares).

EMEA	Principal Businesses
Anritsu EMEA Ltd. (U.K.)	Sales and maintenance of measuring and other instruments
Anritsu Ltd. (U.K.)	R&D and manufacture of measuring and other instruments
Anritsu GmbH (Germany)	Sales and maintenance of measuring and other instruments
Anritsu S.A. (France)	Sales and maintenance of measuring and other instruments
Anritsu S.r.l. (Italy)	Sales and maintenance of measuring and other instruments
Anritsu AB (Sweden)	Sales and maintenance of measuring and other instruments
Anritsu A/S (Denmark)	R&D, manufacture, sales, and maintenance of T&M instruments
Anritsu Solutions S.r.l. (Italy)	R&D of measuring and other instruments
Anritsu Solutions S.R.L. (Romania)	R&D of measuring and other instruments
Anritsu Solutions SK, s.r.o. (Slovakia)	R&D of measuring and other instruments
Anritsu Infivis Ltd. (U.K.)	Sales and maintenance of PQA equipment

Asia & Others	Principal Businesses
Anritsu Company Ltd. (Hong Kong)	Sales and maintenance of measuring and other instruments
Anritsu Electronics (Shanghai) Co., Ltd. (China)	Maintenance of measuring and other instru- ments
Anritsu (China) Co., Ltd. (China)	Sales and maintenance of measuring and other instruments
Anritsu Company, Inc. (Taiwan)	Sales and maintenance of measuring and other instruments
Anritsu Corporation, Ltd. (Korea)	Sales and maintenance of measuring and other instruments
Anritsu Pte. Ltd. (Singapore)	Sales and maintenance of measuring and other instruments
Anritsu India Private Ltd. (India)	Sales and maintenance of measuring and other instruments
Anritsu Pty. Ltd. (Australia)	Sales and maintenance of measuring and other instruments
Anritsu Philippines, Inc. (Philippines)	R&D of measuring and other instruments
Anritsu Industrial Solutions (Shanghai) Co., Ltd. (China)	Sales and maintenance of PQA equipment
Anritsu Industrial Systems (Shanghai) Co., Ltd. (China)	Manufacture of PQA equipment
Anritsu Infivis (THAILAND) Co., Ltd. (Thailand)	Manufacture and maintenance of PQA equip- ment



#### Anritsu Company (US) and El Toro

Anritsu Company is located in Morgan Hill, CA, about thirty minutes by car from the center of Silicon Valley. El Toro (lower right photo), which takes its name in English from "the bull" in Spanish, is a nearby hill surrounded by nature. The hill is also a symbol for Morgan Hill and on the city' s emblem. Diverse cultures, majestic nature, and the forefront of science and technology are there.



#### ANRITSU CORPORATION

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