Continuous Growth with Sustainable Superior Profits

Hirokazu Hashimoto
Representative Director, Group CEO
Anritsu Corporation

February/ March, 2019

TSE code : 6754
https://www.anritsu.com
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Agenda

I. Mid term Business Plan GLP2020 and Business Strategy
   1. Basic Policy of Management Strategy
   2. Outline of our business segments
   3. Basic Policy of medium and long term business strategy

II. T&M business segment
   1. T&M : GLP2020 Revenue and Operating profit plan
   2. T&M : Mobile market trends and Business opportunity
   3. Industrial Test Solutions
   4. Network Reshaping Test Solutions

III. PQA Business segment

IV-1. Financial Strategy
IV-2. Shareholder Return Policy
IV-3. Corporate Philosophy and Sustainability Policy
IV-4. Corporate Governance System

V. Financial Results for the 3rd quarter of the Fiscal Year ending March 31, 2019
I. Mid term Business Plan GLP2020 and Business Strategy
I -1. Basic Policy of Management Strategy

☑ Prosecute the policy “Continuous profitable growth”
☑ Make our best to accomplish 2020VISION/GLP2020

* GLP2020 Plan = FY2018~FY2020
I -2. Outline of our business segments

<table>
<thead>
<tr>
<th>T&amp;M</th>
<th>Mobile</th>
<th>Network Infrastructure</th>
<th>Electronics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolution and advances of networked society</td>
<td>5G, LTE</td>
<td>Wired, Wireless NW</td>
<td>Wireless Equipment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PQA</th>
<th>Food Safety and security</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X-ray inspection systems</td>
</tr>
<tr>
<td></td>
<td>Metal Detector</td>
</tr>
<tr>
<td></td>
<td>Checkweighers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP network equipment</td>
</tr>
<tr>
<td>Opt. devices</td>
</tr>
</tbody>
</table>

(Revenue by business segment)
86.0 Billion Yen consolidated revenue in FY2017

<table>
<thead>
<tr>
<th>T&amp;M</th>
<th>63%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile</td>
<td>45%</td>
</tr>
<tr>
<td>Network Infrastructure</td>
<td>32%</td>
</tr>
<tr>
<td>Electronics</td>
<td>23%</td>
</tr>
</tbody>
</table>

| PQA | 26% |

| Others | 11% |

(Sales of T&M business by region in FY2017)

<table>
<thead>
<tr>
<th>Japan</th>
<th>Asia &amp; Pacific</th>
<th>Americas</th>
<th>EMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>38%</td>
<td>23%</td>
<td>19%</td>
</tr>
</tbody>
</table>

T&M: Test & Measurement  PQA : Products Quality Assurance
I -2-1. Outline of our business segments <T&M>

<table>
<thead>
<tr>
<th></th>
<th>R&amp;D</th>
<th>Manufacturing</th>
<th>Installation/Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireline Communication</td>
<td></td>
<td></td>
<td>Network Infrastructure (32%)</td>
</tr>
<tr>
<td>Wireless Communication</td>
<td></td>
<td>Mobile (45%)</td>
<td></td>
</tr>
<tr>
<td>General Purpose</td>
<td></td>
<td>Electronics (23%)*</td>
<td>*Electronics components etc.</td>
</tr>
</tbody>
</table>
### I - 3. Basic Policy of medium and long term business strategy

**Capture growth drivers without fail, and realize “continuous profitable growth”**

<table>
<thead>
<tr>
<th></th>
<th>Market average annual growth rate (estimated by Anritsu)</th>
<th>Vision/growth driver</th>
<th>Medium &amp; long –term guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T&amp;M</strong></td>
<td>3-5%</td>
<td>Become a leading company supporting 5G/IoT society</td>
<td>Sales growth rate: ≥7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) 5G, LTE-Advanced</td>
<td>Operating margin: ≥20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) IoT/Automotive, Connectivity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) IP Data traffic/Cloud Services</td>
<td></td>
</tr>
<tr>
<td><strong>PQA</strong></td>
<td>3-5%</td>
<td>Become a world-class partner in quality assurance solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expansion from contaminant inspection into the quality assurance market</td>
<td></td>
</tr>
<tr>
<td><strong>Consolidated</strong></td>
<td></td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>ROE</strong></td>
<td></td>
<td>—</td>
<td>≥15%</td>
</tr>
</tbody>
</table>

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**Notes:**
- T&M: Test & Measurement
- PQA: Provider Quality Assurance
- ROE: Return on Equity
I - 3-1. GLP2020 : Revenue and Op. profit Plan (1/2)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>FY2018</th>
<th>FY2018</th>
<th>FY2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Revenue</td>
<td>OP. profit</td>
<td>Revenue</td>
</tr>
<tr>
<td>T&amp;M</td>
<td>98.0 B Yen</td>
<td>11.0 B Yen</td>
<td>105.0 B Yen</td>
</tr>
<tr>
<td></td>
<td>11%</td>
<td>7%</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>8.5 B Yen</td>
<td>5.0 B Yen</td>
<td>11.0 B Yen</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>PQA</td>
<td>66.0 B Yen</td>
<td>9.0 B Yen</td>
<td>70.0 B Yen</td>
</tr>
<tr>
<td></td>
<td>14%</td>
<td>6%</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>23.5 B Yen</td>
<td>2.0 B Yen</td>
<td>26.0 B Yen</td>
</tr>
<tr>
<td></td>
<td>9%</td>
<td>9%</td>
<td>12%</td>
</tr>
</tbody>
</table>

*Anritsu announced the change of FY2018 Forecast in January.

(Note) Exchange rate for GLP2020 : 1USD=105Yen, 1Euro=125Yen

Upward revision > Initial plan
I - 3-2. GLP2020 : Revenue and Op. profit Plan (2/2)

### Revenue and Op. profit trends

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Act</td>
<td>77.9</td>
<td>93.6</td>
<td>94.7</td>
<td>101.9</td>
<td>98.8</td>
<td>95.5</td>
<td>98.0</td>
<td>92.0</td>
<td>105.0</td>
<td></td>
</tr>
<tr>
<td>Plan</td>
<td>53.5</td>
<td>70.6</td>
<td>76.0</td>
<td>73.4</td>
<td>67.7</td>
<td>59.3</td>
<td>66.0</td>
<td>70.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Op. profit margin

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Act</td>
<td>9%</td>
<td>15%</td>
<td>17%</td>
<td>14%</td>
<td>11%</td>
<td>6%</td>
<td>5%</td>
<td>6%</td>
<td>11%</td>
<td>7%</td>
</tr>
<tr>
<td>Plan</td>
<td>14%</td>
<td>17%</td>
<td>12%</td>
<td>7%</td>
<td>4%</td>
<td>3%</td>
<td>14%</td>
<td>6%</td>
<td>14%</td>
<td></td>
</tr>
</tbody>
</table>

### GLP plan

- **GLP2012**
- **GLP2014**
- **GLP2017**
- **GLP2020**

**GLP20XX:** Name of business plan
Ⅱ. T&M business segment
II -1. T&M : GLP2020 Revenue and Operating profit plan

Establish next generation growing business centered on 5G

Legend

- 5G
- IP Data traffic
- Cloud Services
- IoT, Automotive
- New Biz
- New Business

GLP2020

100.0 B Yen
Advanced Target
FY202X
Op. Margin: 20%

Beyond2020

70.0 B Yen
FY2020
Op. Margin: 14%

60.0 B Yen
FY2018
Op. Margin: 6%
## 2-1-1. T&M : Profit structure improvement targets

<table>
<thead>
<tr>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18 (Initial Plan)</th>
<th>FY18 (Est.)</th>
<th>GLP2020</th>
<th>Operating Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Op. profit</td>
<td>21%</td>
<td>17%</td>
<td>12%</td>
<td>7%</td>
<td>4%</td>
<td>3%</td>
<td>6%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>SG&amp;A</td>
<td>30%</td>
<td>32%</td>
<td>35%</td>
<td>38%</td>
<td>39%</td>
<td>42%</td>
<td>38%</td>
<td>34%</td>
<td>34%</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
<td>14%</td>
<td>13%</td>
<td>13%</td>
<td>14%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>COGS</td>
<td>38%</td>
<td>38%</td>
<td>40%</td>
<td>41%</td>
<td>44%</td>
<td>42%</td>
<td>42%</td>
<td>39%</td>
<td>39%</td>
</tr>
</tbody>
</table>

### Cost structure improvement measures

- Introduction of high value added solutions (professional services, software)
- Thorough enforcement of development ROI & ROIC management (*1)
- SG&A expenses: Organizational structure and optimal allocation of human resources in response to changes in customer trends

*1:KPI target index for R&D investments is an R&D ROI\(\text{gross profit / R&D investment value}\) of 4.0 times or higher.
Mobile market trends and Business opportunity

**Manufacturing of 3G smartphone**

**Development of LTE**

**5G Development**
- Accelerated investment in 5G(NSA-NR) development
- Investment in 5G(SA-NR) development: China

**Mobile Market**

**Wireline Market**

**IP Data traffic/Cloud Services**
- High speed and increasing capacity of the data center
- Investment in small cell

**New market**
- IoT/Automotive
- Utilization of 5G in the new field

**5G Manufacturing**
- 5G(Sub6GHz) manufacturing market

**Business opportunity**
- Investment towards Gigabit LTE development

- 2019
## II -2-1. Roadmap of 5G

<table>
<thead>
<tr>
<th>CY2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="5G" /></td>
<td><img src="image" alt="5G" /></td>
<td><img src="image" alt="5G" /></td>
<td><img src="image" alt="5G" /></td>
</tr>
</tbody>
</table>

- **Rel.15 NSA specifications** (Phase1 Ultrahigh speed)
- **Rel.15 SA specifications**
- **Rel.16** (Phase2 Extended use cases such as ultra-low latency, super large number of connections)
- **Rel.16 Chip development**
- **Rel.16 Device development**
- **Launch of 5G services by major business operators in various countries**
- **Expand 5G services**
- **NSA + Millimeter wave (C)**
- **NSA + Sub6&Millimeter wave (C)**
- **SA & NSA + Sub6 (P)**
- **SA or NSA+ Sub6 (C)**
- **NSA + Sub6&Millimeter wave (P)**
- **NSA + Sub6&Millimeter wave (C)**

### 5G Test Solutions

- **Solutions for core development**
- **Conformance test**
- **Solutions for mass production**

*Created by Anritsu referring to publicly available information*
## 2-2. Current status and outlook for major 5G vendors and operators

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chipset</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualcomm (America)</td>
<td>MediaTek (Taiwan)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samsung (Korea)</td>
<td>Intel (America)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Device</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samsung (Korea)</td>
<td>LG (Korea)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorola (America)</td>
<td>Huawei (China)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sony (Japan)</td>
<td>Sharp (Japan)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verizon (America)</td>
<td>CMCC (China)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT&amp;T (America)</td>
<td>Docomo (Japan)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KT, SKT (Korea)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Next Chipset*

*Next Device*

*We expect full-scale commercial service to begin in 2020 or later.*

*Created by Anritsu, with reference to materials from “Public Meeting for Exchanging Opinions on Radio Policy (58th Meeting),” issued by the Ministry of Internal Affairs and Communications (September 21, 2018), as well as other publicly available information.*
Ⅱ -2-3. 5G terminal development/manufacturing process and test solutions

Verification of Core Technologies at Chipset Vendors

Evaluation of Functions & Performance at UE Vendors

Conformance Test at UE Vendors & Test Houses

Acceptance Test at Carriers & Test Houses

Mass Production Test at UE Vendors & EMS

Baseband Chipset / RF Front End

Protocol

Evaluation of Functions & Performance

Conformance Test (CT)

Carrier Acceptance Test (CAT)

RF Calibration & Inspection

(See Page34)

MT8000A Radio Communication Test Station

ME7834NR 5G NR Mobile Device Test Platform

MT8870A Universal Wireless Test Set

Anritsu envision: ensure

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### II -2-4. Mobile R&D business and solutions (The case of LTE)

<table>
<thead>
<tr>
<th>Platform(Core) Development</th>
<th>Conformance test</th>
<th>Operator Acceptance test</th>
<th>Smartphone Commercial test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chipset development</td>
<td>Conformance test</td>
<td>Comm. Carrier</td>
<td>Application development</td>
</tr>
<tr>
<td></td>
<td>Interoperability test</td>
<td>acceptance test</td>
<td>UE operation test</td>
</tr>
<tr>
<td><strong>Main customers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chipset vendor</td>
<td>Chipset vendor, UE vendor, Communication Carrier</td>
<td>Com Carrier, Test house, UE vendor</td>
<td></td>
</tr>
<tr>
<td>UE vendor</td>
<td></td>
<td></td>
<td>UE vendor Applications developer</td>
</tr>
<tr>
<td><strong>Main theme</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• FDD / TDD-LTE, LTE-Advanced, LTE-Advanced PRO</td>
<td></td>
<td></td>
<td>• Improve data throughput</td>
</tr>
<tr>
<td>• CA (Carrier aggregation), VoLTE (Voice over LTE)</td>
<td></td>
<td></td>
<td>• Battery consumption etc.</td>
</tr>
<tr>
<td>• MIMO (Multi Input Multi Output)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Chipset unification of 3G/LTE and SRW (Short Range Wireless)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Test solutions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anritsu : No.1 position</td>
<td>Rohde &amp; Schwarz, Keysight(Agilent, Anite), Spirent</td>
<td>Rohde &amp; Schwarz, Keysight</td>
<td></td>
</tr>
<tr>
<td>Rohde &amp; Schwarz</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ⅱ-2-5. Evolution of mobile communication

Supporting evolution of mobile communication system

Max. communication speed increased about 10 thousands times over the past 30 years

Max. communication speed

- 1Gbps
- 100Mbps
- 1Gbps
- 20Gbps

Evolution every 10 years

<table>
<thead>
<tr>
<th>Year</th>
<th>1G</th>
<th>10k</th>
<th>100k</th>
<th>1M</th>
<th>10M</th>
<th>1G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>2.4Kbps</td>
<td>28.8Kbps</td>
<td>384Kbps</td>
<td>100Mbps</td>
<td>1Gbps</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>28.8Kbps</td>
<td>1Gbps</td>
<td>10Gbps</td>
<td>20Gbps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>1Gbps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>20Gbps</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(from materials of the Ministry of Internal Affairs and Communications)
II -2-6. Contributing to the establishment of 5G network infrastructure

**Features of 5G:**
- 1/10×Latency
- 100×Peak Data Rate
- 100×Capacity

**Smart Devices**
- R&D and Manufacturing Solution for IoT Device/Module

**Mobile Networks**
- Support for Mobile Network by Widespread products ranging from RF to optical
- 5G New RAT
- C-RAN
- CPRI
- LTE-A
- NB-IoT
- Small Cell

**Fixed Networks**
- Support for high-speed 100G/400G communications
- 100G/400G
- SDH/WDM
- OTN
- Ethernet
- SDN/NFV

**Cloud**
- Continued world leader in bit error rate test
- 40G/100G
- Data Center
- Internet
- PCI-E
- AOC

**IoT Device/Module Measurement**
- Spectrum Analyzer
- Signal analyzer
- New HH SPA
- 40G/100G Analyzer
- BERTWave Series
- eoSight
- Big Data Analytics

**Anritsu**
- envision : ensure

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II -2-7. 5G will become the infrastructure of social innovation

From now on it is necessary to establish "business strategy", includes making business partners

(Ministry of Internal Affairs and Communication)
Millimeter waves are used in cities where small cells can be arranged in mesh networks.
Ⅱ-2-9. 5G and LTE coexist and interwork

5G = LTE Enhancements + Next-Generation Wireless Technologies

**5G Network**
- Data Signal
- Control Signal
- Small Cell

**LTE Network**
- Data Signal
- Control Signal
- Macro Cell

**Roadmap of LTE**
- 2015: LTE-Advanced Rel 12 & 13
- 2016: LTE Enhancement Rel 14 & 15
- 2016~2020: Year

**Frequency**
- 40GHz
- 30GHz
- 28GHz
- 20GHz
- 10GHz
- Sub-6GHz
- 6GHz
- 3GHz
- 1GHz
- 400MHz

**New RAT** (higher performance, wide-area)
- New RAT: New Radio Access Technology

**Anritsu** envision: ensure
II -2-10. 5G Band Allocations in the World

SubGHz 600/700 MHz

Sub6GHz 3.1～4.2 GHz 4.4～4.99 GHz

Millimeter Wave 26/28 GHz 38/42 GHz

* Created based on public disclosure information.
II -2-11. Solutions for 5G chipset/device development

We have begun shipments of the Radio Communication Test Station MT8000A for development of chipsets, devices, etc. for the 5G market.
II-2-12. Role of MT8000A

**Real-world environment**

- 5G base station
  - 5G smartphone
  - Mobile network

**Test environment**

- 5G smartphone under performance testing
  - MT8000A
  - Emulated

- Enables a variety of simulations, including handling of errors which cannot be checked with a base station connection, and handover from one base station to another
- Emulates a base station to connect to smartphone and conduct performance testing
Ⅱ-2-13. High-frequency (millimeter wave) measurement technology

For low-frequency

Accurate measurements are possible with a cable connection.

MT8000A

For high-frequency (millimeter wave)

Accurate measurements are possible with Over The Air (OTA) using chamber.
Ⅱ-2-14. Test solution for 5G NSA-NR terminal development

NSA-NR Network Configuration

Introducing 5G utilizing the LTE core network.

- LTE Macro Cell
- LTE Base Station (LTE Anchor)
- Data & Control
- 5G NR Small Cell
- NSA-NR Device

NSA-NR Test Environment

- LTE Base Station Simulation
- ME7834NR Test System
- MD8430A
- 5G NR Base Station Simulation
- MT8000A
- NSA-NR Device
Signal analyzer that realizes millimeter-wave measurement solutions required for R&D and manufacture of 5G base stations and terminals at unprecedented low prices

**Frequency range**: 9 kHz~32 GHz/44.5 GHz

**Analysis bandwidth**: 255 MHz (standard), 510 MHz (option), 1 GHz (option)

### Conventional Signal Analyzer for LTE
- Frequency is mainly 6GHz or less
- Analysis bandwidth is 20MHz to several hundred MHz

### Signal Analyzer for 5G
- Covers frequency up to 44.5GHz
- Coverage of analysis bandwidth is up to 1GHz
- Low price enables installation for commercial development and manufacture
II-2-16. Acquisition of Azimuth Systems, Inc.

- Company Name: Azimuth Systems, Inc.
- Headquarters: Boston, USA
- Business model: Development and sales of channel emulators, etc.
- Main customers: Operators, chipset vendors, network equipment vendors, UE vendors, etc. in the Americas, EMEA, Asia, and Japan

**Real-world environment**

- Base station
- Signal
- Reflection from obstacles
- Fading (Fluctuating signal strength)
- Communication device

**In the lab (e.g., communication device testing)**

- Base station simulator
- Channel Emulator
- Cable
- Communication device (device under test)
II -2-17. Food chain and players in mobile telecom market

For R&D

- **Operators**
  - AT&T
  - Verizon
  - T-Mobile
  - Orange
  - BT
  - Deutsche Telekom
  - China Mobile
  - China Unicom
  - China Telecom
  - NTT DoCoMo
  - KDDI
  - Softbank + Sprint
  - SK Telecom
  - KT
  - LG Uplus
  - etc.

- **Chipset vendors**
  - Qualcomm, Intel, Samsung, MediaTek, Hisilicon, Spreadtrum, Broadcom, Marvell, Realtek, Altair, Sequans, etc.

- **Test houses**
  - SGS, 7 layers, Cetecom, TMC, Canvas M, TechMahindra, etc.

- **Smartphone & Tablet vendors**
  - America: Apple, Amazon, Google, Microsoft + Nokia
  - Asia: Huawei, OPPO, VIVO, Xiaomi, enovo, TCL, ZTE, Coolpad, Samsung, LG, HTC, Micromax
  - Japan: Sony, Fujitsu, etc.

For production

- **Wireless modules /component vendors**

- **EMS**
  - Foxconn, Asus, BYD, Quanta, HEG, etc.

- **Own factories**

- **Application providers**

- **Base stations**
  - Ericsson, ZTE, Huawei, NOKIA, Samsung, Fujitsu, NEC, etc.
II -2-18. Roadmap of LTE service

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LTE</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTE-Advanced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTE-Advanced Pro</td>
<td>1.2Gbps</td>
<td>1Gbps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Service implementation trends of operators

- CA (Carrier Aggregation)
  - 2CA
  - 3CA
  - 4CA
  - 5CA
  - 6CA

- DL4 x4MIMO

- LAA* - Licensed-Assisted Access (using unlicensed band)

* LAA---Licensed-Assisted Access (using unlicensed band)
Expand Earnings Opportunities by Supporting the Creation of New Markets and Various Industrial Fields through the Utilization of 5G

**High Speed, Low Latency**

- Multiple concurrent connections
  - Connect all the terminals and sensors around us to the internet
- Ultra high speed
  - Download a movie of 2 hours in 3 seconds
- Ultra low latency
  - Operate a remote robot in real time precisely

**General Units**

- Smart meter
- home security
- Industrial Equipment

**LPWA**

- LTE Advanced Pro, 5G

**LTE Advanced**

- VR, AR

**5G**

- Advancement of automated driving
- Remote control operation
Ⅱ -3-1. Manufacturing solutions for Smart phone

Current features
1. Huawei, Vivo, Oppo
   The rise of China vendors and intensifying competition ( deallocating)
2. The growth of the manufacturing market in India

Solutions for 2G / 3G / LTE & Connectivity

MT8870A
Universal Wireless Test Set

Smartphone Shipment Market Share in China by Vendor *

*Source: Gartner "Market Share: PCs, Ultramobiles and Mobile Phones, All Countries, 2Q18 Update" 24 Aug. 2018
Smartphone = Basic Phone, Premium Phone, Utility Phone
OS = Excluding WindowsRT and Proprietary
Graph created by Anritsu based on Gartner research

Main Competitors
Rohde & Schwarz, Keysight
## II-3-2. R&D solutions for Smart Devices for IoT

### Wireless systems for achieving IoT

<table>
<thead>
<tr>
<th>Communication distance</th>
<th>LPWA</th>
<th>Cellular IoT</th>
<th>3G,LTE,5G</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;km</td>
<td>NB-IoT</td>
<td>Cat.M</td>
<td>Cat.1</td>
</tr>
<tr>
<td>100m</td>
<td>SIGFOX LoRaWAN</td>
<td>Wi-SUN LoRaWAN</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>10m</td>
<td>NFC</td>
<td>Zigbee Z-Wave</td>
<td>Bluetooth</td>
</tr>
<tr>
<td>1m</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Data Transmission rate

- 0.01 Mbps
- 1 Mbps
- 10 Mbps
- 100 Mbps

### R&D Solutions for Cellular IoT

- **MT8821C Radio Communication Analyzer**
- **Chipset**
- **SiP (System in Package)**
- **MD8430A Signalling Tester**

### Main Competitors

- Rohde & Schwarz, Keysight
II -3-3. Manufacturing solutions for Smart Devices for IoT

-2

Main Competitors
Teradyne, National Instruments, Rohde & Schwarz, Keysight

*The growth of Connectivity & Module markets for IoT

For WLAN / Bluetooth

MT8862C Wireless Connectivity Test Set

MT8870A Universal Wireless Test Set

*Source: World Economic Forum

**SiP (System in Package)
II -3-4. Adoption of new technologies in the automotive market and Anritsu’s initiatives

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advancement of automated driving</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 2</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Level 3</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Spread of 4G telematics
- Mandatory deployment of eCall
- Increasing use of 79GHz radar
- Active verification testing of V2X

**Telematics/eCall**
- Emergency calling system for vehicles

- Mobile network simulator
- Millimeter wave signal transmitter tester
- 79GHz high resolution automotive radar

---

**Mobile communication/connectivity**

- Wireless communication RF performance test
- V2X communication quality assessment
- V2X (802.11p) *vehicle-to-vehicle/road-to-vehicle communications*
### II -3-5. Food chain and players in Automotive market

#### Safety, Emergency, Comfort, Infotainment, Diagnostic

<table>
<thead>
<tr>
<th>Car Vendors</th>
<th>Dashboard Vendors</th>
<th>Module Vendors</th>
<th>Chipset Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autonomous car</strong></td>
<td><strong>Transceiver module</strong> (Cellular + V2X + Connectivity + Antenna + etc.)</td>
<td><strong>Cellular module, Connectivity module, V2X module, Rader, Antenna, Connector, Cable, etc.</strong></td>
<td><strong>Semi-conductors for communication</strong></td>
</tr>
<tr>
<td><strong>ADAS</strong> (Advanced Driver Assistance System)</td>
<td><strong>Rader module</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Telematics</strong> (Telecommunication + Informatics)</td>
<td><strong>Antenna</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ITS C-ITS</strong> (Intelligent Transport Systems)</td>
<td><strong>Satellite receiver</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Tuner</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Further evolution towards 5G/IoT

Current LTE Network + 5G Network

Reshaping the Future of Network Test Solution

Main Competitors
Viavi (formerly known as JDSU)

Mobile Fronthaul
RRH: Remote Radio Head
BBU: Base Band Unit

Network Master
MT8220T BTS Master

Integration
Optical
Transport (CPRI)
Wireless

Optimization

Cloud Solution
SkyBridge Tools

Current LTE Network: Macro Cell
5G Network: Small Cell

RRH: Remote Radio Head
BBU: Base Band Unit

Wireless Test Solution

MT8220T BTS Master

MT1000/1100 Network Master
Ⅱ -4-1. Test Solutions for support of Cloud Service expanding
Data traffic extending explosively

Global Data Center Traffic Growth
Source: Cisco Global Index 2015-2020

- Expansion of Data Center
- Higher-speed
- Larger-capacity
- Conversion to fiber optics

DCI
High speed communication
10G/40GbitE → 100G/200/400GbitE

Main Competitors
Keysight

Optical device vendors
Optical module vendors
Equipment (Router, Switch) vendors in Data Center

R&D
Manufacturing, I&M
Ⅲ. PQA Business segment
Ⅲ-1. Example of a Production line and Quality assurance

Materials

① Weighing
○○g~○○g

② Packaging

③ Inspection
Weight? Contaminants? etc.

④ Crating

⑤ Shipment

Ensure the safety and security of everyday food and medicine

Warn: Ensure the safety and security of everyday food and medicine
III - 2. PQA business segments (Products Quality Assurance)

General examples of food production process

- Snacks
- Sausage
- Meat

- Contamination
- Variation in the amount of contents
- Breaks and chips
- Defective packaging (sealing)
- Printing error/Print blur

Overall quality management and control system

Major customers

- Mondelez, Nestle, Kraft Heinz, Nippon Ham Group, Glico Group, Nissui Group, etc.
### Market Major initiatives

<table>
<thead>
<tr>
<th>Market</th>
<th>Major initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America, EMEA, Asia</td>
<td>Develop market with X-ray inspection systems as a key solution</td>
</tr>
<tr>
<td>Japan</td>
<td>Improve market share through quality assurance solutions with high added value in response to cutting-edge needs</td>
</tr>
</tbody>
</table>

### Main Competitors
- Mettler-Toledo, Ishida, Marel
Ⅲ-2-2. PQA Business: Current Status of the PQA Market and Outlook

- **EMEA**
  - More stringent quality assurance for the retail industry
  - 2017: 40%
  - 2020: 30%

- **Americas**
  - Penetration of the X-ray inspection market
  - 2017: 30%
  - 2020: 40%

- **Asia**
  - Expansion of demand for processed food
  - Rising personnel expenses
  - 2017: 15%
  - 2020: 15%

- **Japan**
  - Automation and labor saving for production lines in response to a manpower shortage
  - 2017: 15%
  - 2020: 15%

**Global market size of 200 billion yen** (estimated by Anritsu in 2017)
Average growth rate of 4% expected by 2020
Ⅲ-2-3. PQA Business: GLP2020 Revenue and operating profit plan

Strengthen global competitiveness with the aim of expanding global business

- **30.0 B Yen**
  - Advanced Target
  - FY202X
  - Operating margin: ≥12%

- **26.0 B Yen**
  - FY2020
  - Operating margin: 12%

- **23.5 B Yen**
  - FY2018
  - Operating margin: 9%

Legend:
- Japan
- EMEA
- Americas
- Asia
IV-1. Financial Strategy

<Target>

Ratio of net assets to total assets: ≥ 60%

D/E ratio: ≤ 30%

(Ratio of net assets to total assets, D/E ratio)
### IV-1-1. GLP2020: Financial strategy

**Basic policy**

Improve corporate value KPI (ACE & ROE) through growth investment (including M&As) with a return of more than 7% of equity cost and capital efficiency improvements.

* ACE (Anritsu Capital-cost Evaluation): Operating income after tax - Capital Cost (WACC, 5%)

**Goal:** ROE ≥ 15%

- **Goal:** ROE ≥ 15%
- **Basic policy**
  - ACE (Anritsu Capital-cost Evaluation): Operating income after tax - Capital Cost (WACC, 5%)

![Graph showing ACE (B Yen) and ROE (%) over fiscal years FY2010 to FY202X. The goal is to achieve ROE ≥ 15%.

Anritsu envisions and ensures successful financial strategies. Copyright © ANRITSU CORPORATION

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Ⅳ-2. Shareholder Return Policy

Dividend Policy

Distribute profits in accordance with its consolidated performance (Net profit) and by taking into account the total return

1. Take the basic approach of raising dividends on equity (DOE) in accordance with the increase in consolidated profits for the fiscal year

2. Aim at a consolidated dividend payout ratio of 30 percent or more
IV-2-1. Dividend forecast

Increase in dividend

17 yen → 22 yen
(Interim dividend 8.5 yen, Year-end dividend 13.5 yen)

Annual Dividend

<table>
<thead>
<tr>
<th>Dividend per share</th>
<th>Profit</th>
<th>Payout ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2018 (Forecast)</td>
<td>22 yen</td>
<td>8.5 B yen</td>
</tr>
</tbody>
</table>

Payout ratio (%)

Yen

20 yen  20 yen  24 yen  24 yen  15 yen  15 yen  22 yen

20.3%  30.8%  43.1%  87.7%  76.3%  71.5%  35.5%

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envision : ensure

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IV-3. Corporate Philosophy and Sustainability Policy

Company Philosophy
Contribute to the development of a safe, secure, and prosperous global society by offering Original & High Level products and services with sincerity, harmony, and enthusiasm.

Company Vision
Achieve continuous growth with sustainable superior profits through innovation, using all knowledge of all parties and contribute to the sustainability of society.

Sustainability Policy

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.
IV-3-1. Set sustainability management as our axis
IV-3-2. Sustainability Goals (SDGs)

Social Issues We Address through Our Business Activities

- **Maintaining Harmony with the Global Socio-Economy**
  - Together with diverse Human resources, we seek to contribute to the creation of workplaces where each individual can achieve personal growth and experience job satisfaction.
  - Respect for human rights and diversity / Human resource development / Occupational health and safety / SCM that give due regard to human rights

- **Promoting Global Environmental Protection**
  - Contributing to the creation of a society with sustainable consumption and sustainable corporate production practices.
  - Reduction in CO2 emissions volume (energy usage volume) and water usage volume / developing and manufacturing of high-quality and environmentally friendly products / Supply chain management that lowers environmental burden

- **The Creation of Shared Value through the Promotion of Communication**
  - Contributing to the creation of shared value with collaboration among all stakeholders.
  - Providing information to and communicating with stakeholders / Establishing compliance as a part of our mind-set / Promoting risk Management

Major Issues in ESG
IV-4. Corporate Governance System

For improving competitiveness and continuously enhancing corporate value
V. Financial Results for the 3rd quarter of
the Fiscal Year ending March 31, 2019
### V -1. Overview of operations by business segment

<table>
<thead>
<tr>
<th>Segment</th>
<th>FY2018 3Q (April to December, 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T&amp;M</strong></td>
<td>Concrete roadmap for 5G commercialization</td>
</tr>
<tr>
<td>Mobile</td>
<td><strong>LTE-Advanced</strong>&lt;br&gt; Trend toward focusing investments on LTE-Advanced Pro</td>
</tr>
<tr>
<td></td>
<td><strong>5G</strong>&lt;br&gt; Development demand materialized for chipsets and devices</td>
</tr>
<tr>
<td>Network Infrastructure</td>
<td>Capital investment within US market was strong</td>
</tr>
<tr>
<td>Asia</td>
<td>Commercialization testing seen in China 5G (Sub6GHz)</td>
</tr>
<tr>
<td>Americas</td>
<td>Initial 5G development demand grew steadily</td>
</tr>
<tr>
<td><strong>PQA</strong></td>
<td>Continued strong investment by food market for quality assurance, automation, and labor saving both in Japan and overseas</td>
</tr>
</tbody>
</table>

T&M: Test & Measurement  
PQA: Products Quality Assurance
V -2. Consolidated performance - Financial results -

Year-on-year growth in revenue and profit

<table>
<thead>
<tr>
<th>International Financial Reporting Standards (IFRS)</th>
<th>3Q FY2017 (Apr. to Dec.)</th>
<th>3Q FY2018 (Apr. to Dec)</th>
<th>YoY</th>
<th>YoY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Intake</td>
<td>64.2</td>
<td>73.9</td>
<td>9.7</td>
<td>15%</td>
</tr>
<tr>
<td>Revenue</td>
<td>62.3</td>
<td>71.1</td>
<td>8.8</td>
<td>14%</td>
</tr>
<tr>
<td>Operating profit (loss)</td>
<td>2.7</td>
<td>7.7</td>
<td>5.0</td>
<td>189%</td>
</tr>
<tr>
<td>Profit (loss) before tax</td>
<td>2.6</td>
<td>7.9</td>
<td>5.3</td>
<td>198%</td>
</tr>
<tr>
<td>Profit (loss)</td>
<td>1.5</td>
<td>6.3</td>
<td>4.8</td>
<td>326%</td>
</tr>
<tr>
<td>Comprehensive income</td>
<td>3.0</td>
<td>6.5</td>
<td>3.5</td>
<td>118%</td>
</tr>
</tbody>
</table>

Note: Numbers are rounded off to the first decimal place in each column.
### V-3. Consolidated performance - Results by business segment -

**T&M: Increase in revenue and profit through investment in initial development for 5G**

<table>
<thead>
<tr>
<th>International Financial Reporting Standards (IFRS)</th>
<th>3Q FY2017 (Apr. to Dec.)</th>
<th>3Q FY2018 (Apr. to Dec)</th>
<th>YoY</th>
<th>YoY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>T&amp;M</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>40.1</td>
<td>48.6</td>
<td>8.5</td>
<td>21%</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>0.9</td>
<td>6.5</td>
<td>5.6</td>
<td>631%</td>
</tr>
<tr>
<td>Adjusted operating profit (loss)</td>
<td>1.2</td>
<td>6.5</td>
<td>5.3</td>
<td>453%</td>
</tr>
<tr>
<td><strong>PQA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>16.1</td>
<td>16.6</td>
<td>0.5</td>
<td>3%</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>1.3</td>
<td>1.0</td>
<td>(0.3)</td>
<td>-23%</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>6.0</td>
<td>5.9</td>
<td>(0.1)</td>
<td>-2%</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>0.9</td>
<td>0.7</td>
<td>(0.2)</td>
<td>-19%</td>
</tr>
<tr>
<td><strong>Adjustment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>(0.4)</td>
<td>(0.6)</td>
<td>(0.2)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>62.3</td>
<td>71.1</td>
<td>8.8</td>
<td>14%</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>2.7</td>
<td>7.7</td>
<td>5.0</td>
<td>189%</td>
</tr>
</tbody>
</table>

**Note1:** Numbers are rounded off to the first decimal place in each column.

**Note2:** Adjustment includes elimination of inter-segment transactions and non-distributed company-wide expenses of each business segment.

**Note3:** Way to allot headquarter administrative expenses to each business segment changed from the year ending March 31, 2019 and figures of operating profit for the year ended March 31, 2018 are restated.

*Adjusted operating profit for T&M is the amount after deducting 0.3 billion yen in restructuring expenses in the U.S.

T&M: Test & Measurement  
PQA: Products Quality Assurance
V -4. Consolidated performance - Revenue and Op. profit by quarters -

3Q(Oct.-Dec.) Operating margin : Consolidated16%, T&M20%, PQA4%

Note1 : Numbers are rounded off to the first decimal place in each column.

Note2 : “Adjustment” is included in segment “Others” within the Op. profit(loss).
V - 5. Transition of Order intake

- T&M: 34% growth year on year
- PQA: Same level as the previous year

Note: Numbers are rounded off to the first decimal place in each column.
V-6. Transition of Revenue by region

Increased revenue from investment in initial development for 5G

Note: Numbers are rounded off to the first decimal place in each column.
V -7. Cash Flow

Operating cash flow margin ratio was 13.2%

FY2018 3Q (9 months)
- Operating CF: 9.4 Bn. Yen
- Investing CF: (1.1) Bn. Yen
- Financing CF: (1.7) Bn. Yen

Free Cash Flow
- Op. CF + Inv. CF: 8.3 Bn. Yen

Cash at the end of period
- 42.1 Bn. Yen

Interest-bearing debt.
- 16.6 Bn. Yen

Note: Numbers are rounded off to the first decimal place in each column.
V - 8. Forecast for full year of FY2018 (Consolidated)

Upward revision in revenue and profit forecast for T&M

<table>
<thead>
<tr>
<th>International Financial Reporting Standards (IFRS)</th>
<th>FY2017</th>
<th>FY2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>Full Year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Previous Forecast (as of Apr. 26 2018)</td>
</tr>
<tr>
<td>Revenue</td>
<td>86.0</td>
<td>92.0</td>
</tr>
<tr>
<td>Operating profit (loss)</td>
<td>4.9</td>
<td>6.6</td>
</tr>
<tr>
<td>Profit (loss) before tax</td>
<td>4.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Profit (loss)</td>
<td>2.9</td>
<td>5.0</td>
</tr>
<tr>
<td>T&amp;M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>54.4</td>
<td>60.0</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>2.1</td>
<td>3.5</td>
</tr>
<tr>
<td>PQA</td>
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<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>22.5</td>
<td>23.5</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Others</td>
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<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>9.0</td>
<td>8.5</td>
</tr>
<tr>
<td>Op. profit (loss)</td>
<td>1.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Adjustment</td>
<td>(0.7)</td>
<td>(0.7)</td>
</tr>
</tbody>
</table>

Note 1: Numbers are rounded off to the first decimal place in each column.

Note 2: "Others" and "Adjustments" in this segment information are displayed together as "Others" in the previous forecast (announced on April 26, 2018).

Reference: Exchange rate:
- FY2017 (Actual) 1USD=111 yen, 1EURO=130 yen
- FY2018 (Initially Forecast) 1USD=105 yen, 1EURO=125 yen
- FY2018 2H (Forecast) 1USD=105 yen, 1EURO=125 yen