JET

Introduction to JET Business

JAPAN ELECTRICAL SAFETY & ENVIRONMENT TECHNOLOGY LABORATORIES

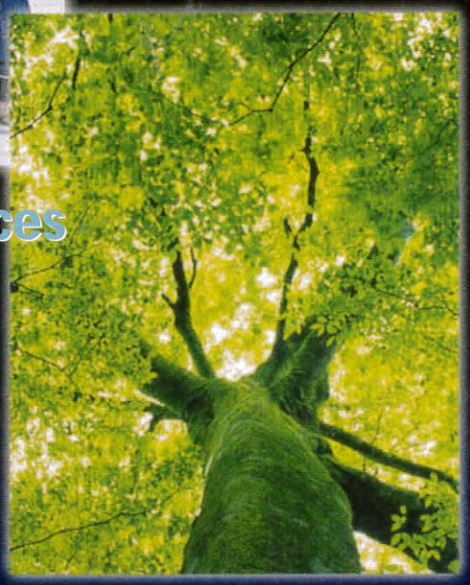
JET Supports "Safety," "Quality," and "En

JET (Japan Electrical Safety & Environment Technology Laboratories) was founded in 1963 as an authorized testing body designated by the government of Japan based on the Electrical Appliance and Material Control Law, taking over the testing services that the government had conducted. Since then, JET has supported establishment of and advancement in the safety of electrical equipment and facilities in Japan in cooperation with manufacturers, importers, distributors and consumers. Based on that achievement, JET is actively promoting its business in product testing and inspection services, certification services, cooperation with overseas authorities, and the quality management system (ISO9001)registration services, and also contributes to environment conservation through the environmental management system (ISO14001)registration services. JET will continuously offer excellent services that support your business, featuring the concept "JET, the Leader in Safety and Environment in the 21st Century".

Testing Inspection and Certification Services

Oversea Services

vironment Conservation"



Researches Services

Customer Assistance Services

Assessment and Registration Services of Management System

Head Office, Tokyo Laboratory

Yokohama Laboratory

Kansai Laboratory

Power Technology Testing Laboratory

History

1963
Founded as Japan Electrical Testing Laboratories of Japan Electric Association, taking over the testing service from national electrical testing laboratories. Designated by the government as an authorized testing body based on the then Electrical Appliance and Material Control Law.

1964
Kansai branch (currently, Kansai Laboratory) and Nagoya branch(closed down in December,2016) were established.

1965
The name was changed to Japan Electrical Testing Laboratories.

1987
Yokohama Laboratory was established.

1995
Accredited by Japan Accreditation Board for Conformity Assessment(JAB) as a QMS registration body according to the ISO9000s. -- Quality Management Division

1997
Accredited by JAB as an EMS registration body according to the ISO14001. -- Environment Certification Division.
The name was changed to Japan Electrical Safety & Environment Technology Laboratories.

1999
Accepted by the IECEE as an NCB (National Certification Body) of Japan based on the IECEE-CB Scheme.

2001
Accredited by the government of Japan as a designated inspection body based on the Electrical Appliances and Materials Safety Act.

2003
Accredited by the government of Japan as a designated inspection body based on the Consumer Product Safety Act.

2005
Accredited by the government of Japan as a Third Party Certification body under The Pharmaceutical Affairs Law.

2006
Designated by the government of Japan as a Registered Certification body (under the New JIS Mark scheme) based on the Industrial Standardization Act.

JET's laboratories at TOKYO, YOKOHAMA and KANSAI have been designated as Accredited Testing Laboratories under JNLA (Japan National Laboratory Accreditation System), with MRA (Mutual Recognition Arrangement), by NITE (National Institute of Technology and Evaluation) based on the Industrial Standardization Law.

2010
Open up Kyusyu Office.(closed down in December,2017)

2011
Established Power Technology Testing Laboratory.

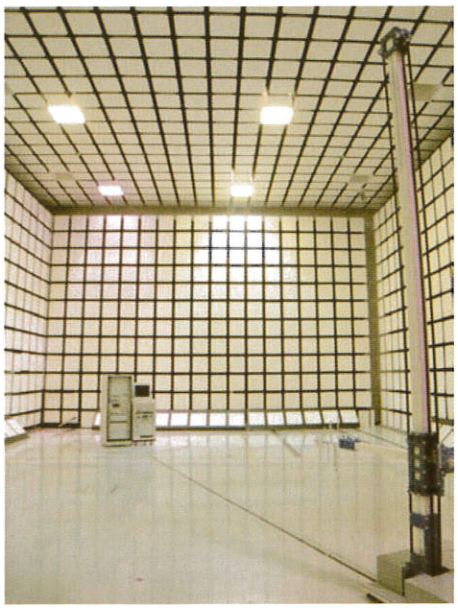
2012
Established Testing Center for wireless devices within Yokohama Laboratory.

2013
Started ECHONET Standard Conformity Certification Scheme.

2014
Kansai Laboratory moved to Kobe-Shi (Rokko Island) in Hyogo prefecture.

2016
Established Power Conditioner Testing Center.

Testing Inspection and Certification Services



JET evaluates various products including electrical products, components and materials for the conformity to relevant standards. JET also provides product certification services through verification of the quality management system of the factories that manufacture the evaluated products. The certification marks, which demonstrate the conformity, are widely trusted in the Japanese market.

Assessment services for the conformity to requirements based on Japanese laws.

JET performs tests and inspections based on laws to help safe products to be offered to the market.

Conformity assessment of the "specified electrical appliances" based on the Electrical Appliances and Materials Safety Act

JET is a registered conformity assessment body based on the Electrical Appliances and Materials Safety Act and the sole organization in Japan that can perform conformity assessments for all the specified electrical appliances.

Conformity assessments of the "designated specified products" based on the Consumer Products Safety Act

As a registered assessment body based on the Consumer Products Safety Act, JET performs the conformity assessments for electric hot water circulators for bathtubs.

Certification based on the Industrial Standardization Act

JET performs assessment and certification for conformity to JIS product standards as a Registered Certification body based on Industrial Standardization Act in the following fields: B; Mechanical Engineering, C; Electronic and Electrical Engineering, G; Ferrous Materials and Metallurgy, K; Chemical Engineering, T; Medical Equipment and Safety Appliances.

Certification for controlled medical devices based on The Phamaceutical and Medical Devices Act

As a registered third party certification body under the revised Japanese Phamaceutical and Medical Devices Act from April 2005, JET performs the certification service for controlled medical devices such as anesthesia and respiratory equipment, dental equipment, medical electrical equipment, clinical equipment, ophthalmic and visual equipment, reusable equipment, single use equipment, medical apparatus for home use and related products, hearing aid, and diagnostic imaging equipment.

Technology Regulation Certification and Certification Service based on the Radio Act

JET provides Technology Regulation Certification and certification service for Design Appraisal for Specified Radio Equipment as Registered Certification Body based on the Radio Act, in addition, and also conducts requested testing based on the other laws at home and abroad.

Fairly and Neutrally, JET Tests and Certifies Various Products for Quality and Reliability

Certification services for components and products

To meet further needs for safety, JET provides third-party certification services.

S-JET Certification

This is a service for testing, inspection and certification based on a contract between a manufacturer and JET. In this service, electrical products are tested for their safety and factories are inspected for their management systems, and also follow-up inspections are regularly conducted. A certified product is allowed to bear the certification mark to demonstrate the third- party certification. The mark helps distributors and consumers select and purchase safe products.

Certification of circuit breakers for use in residences

This is a service for testing, inspection and certifica-tion based on a contract between a manufacturer and JET. Because earth leakage breakers and cir-cuit protectors are critical components to ensure safety, JET performs not only the tests required by the Electrical Appliance and Material Safety Law but also stricter tests to verify their safety, quality and performance. A certified product is allowed to bear the certification mark to demonstrate the third-party certification. The mark helps users rely on the prod-ucts.

Registration of Components and Materials

JET's Registration Mark

CMJ Registration Mark

Some components and materials are required to undergo bur-densome testing-burning, destructive, long-term and so on-according to the "Interpretation" (specification-based descriptions) of Technical requirements for the regulated electrical products by Ministerial ordinance for the Electrical Appliances and Materials Safety Act. Manufacturers of such components and/or materials can have JET test their products and register them with the results. Their test results can be utilized to the maximum degree for JET's test-ing of the final products. Accordingly, by selecting the registered components/materials, assembling manufacturers can save testing time and costs, while manufacturers of components/materials can emphasize the bene-fits when marketing their products to assembling manufacturers. The test results of the registered components/materials are utilized for both the conformity assessment by JET and S-JET certification. The components/materials registered by JET can be registered by Council for Electrical & Electronic Components and Materials of Japan (hereinafter referred to as CMJ) according to prescribed conditions. The test results of the components/materials regis-tered by CMJ can be utilized by some Japanese testing institu-tions other than JET as well: thus the benefit can be enhanced by broader applications. (JET coordinates activity with other testing institutions upon applicants' request.)

Certification for water supply utensils

水道法基準適合

Water supply utensils that connect to municipal water supply systems are regulated by the Water Supply Law. JET tests those water supply utensils for the conformity to the performance standards and verifies the management system of the factories that manufacture those utensils. Certified products are allowed to bear the certification marks.

JET Robot Certification

Robot

Certification for safety of Personal Care Robots as specified in JIS B 8445 (IDT to ISO 13482) and JIS B 8446 series. Its scheme is similar to the scheme of S-JET Certification.

Testing and Certification of ECHONET Lite / AIF Specification

As a testing and certification body approved by ECHONET CONSORTIUM, JET provides one stop service for Testing and Certification of ECHONET Lite / AIF (Application communication InterFace) Specification to ECHONET CONSORTIUM members.

Testing and certification services for the use of new energy and others

JET carries out certification services, which support the use of new energy, such as "solar power generation" and " fuel cell generation", in an advanced manner.

JET certification for system interconnection equipment for small distributed generating systems

The label for photovoltaic power generation systems

This is a third-party certification system for the safety and performance of inverters (power conditioners) for grid-connection of solar power generation systems, gas engine cogeneration, fuel cell generation systems and battery systems (including EV), which contributes to facilitation of connections to the grid.

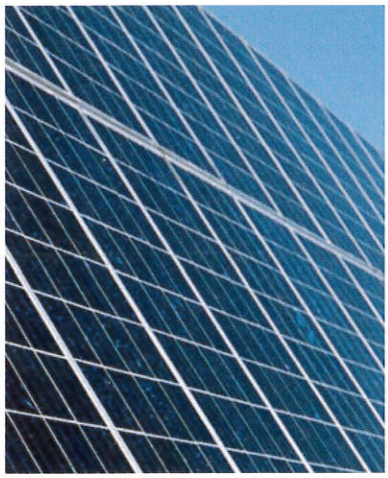
Testing of inverters (power conditioners) for grid-connection of large-scale distributed generating systems

JET carries out testing of inverters (power conditioners) for grid-connection of megawatt-class solar power generation systems based on the standards, such as IEC, UL and IEEE.

Certification for photovoltaic modules (JET PVm Certification)

JET

This is the sole third-party certification scheme in Japan in which photovoltaic modules can be certified based on the international standards (IEC 61215/61646/61730).



JET PV System Operation & Maintenance certification (JET PV O&M certification)

JET
PV O&M

In accordance with the "Report on Guidelines for Periodic Inspection and Failure Examination of PV Power Systems", it is a scheme to register O&M companies and engineers of PV system and to certify the report from the standpoint of a third party.

JIS Q 8901 Terrestrial photovoltaic (PV) modules-Requirement for reliability assurance system (design, production and product warranty)

Based on the Japanese Industrial Standard "JIS Q 8901", it is a system to certify the system to assure reliability (design, manufacture and performance guarantee) of solar cell (PV) module from the standpoint of a third party.

Calibration of secondary reference devices

This is the calibration scheme operated commercially in Japan in which secondary reference devices, the reference for the evaluation of solar device performance, can be calibrated with the calibration systems that are traceable to the international standards.

Characterization of solar devices

This is a measurement work to characterize the efficiency of developing solar devices for research laboratories.

Testing on long-term reliability of solar cell modules

Regarding the long-term reliability of the solar cell modules, we conduct high temperature high humidity tests with prolonged test time, temperature cycle tests with increased test cycles, salt mist tests etc, according to IEC 61215/61646 etc.

Test report issuing services that meet customers' needs

JET provides services to issue test reports that are useful for in-house verification, business transactions, technical proof, and other purposes across the processes of product designing, development and manufacturing.

Testing based on the Electrical Appliances and Materials Safety Act

PS E

JET performs compulsory tests, for example, tests to verify the conformity to the technical requirements and inspections that should be performed on specimens, required for products covered by the Electrical Appliances and Materials Safety Act.

Testing for the CE Marking

JET performs tests required for the CE marking to the products intended to be offered to the European market, based on the Low Voltage Directive and the EMC Directive.

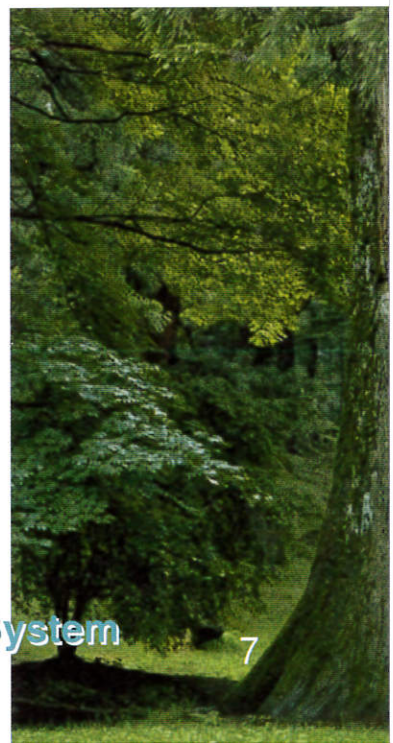
Contract Testing

- Measurements of electromagnetic compatibility (EMC)
- Measurement of electromagnetic fields (EMF)
- Measurement of air conditioner capacity
- Testing of medical equipment for electrical safety based on the Pharmaceutical and Medical Device Actof Japan
- Testing of dustproof and waterproof qualities
- Measurement of the total luminous flux of lamps
- Testing based on standards including IEC, JIS
- Inspections based on the SG Mark Scheme
- Other testing services that meet various needs

JET performs assessment and registration services based on the fair and reliable ISO standards.

Assessment and Registration of ISO and other Management Systems

- ISO9001 Quality management system
- ISO14001 Environment management system
- OHSAS18001 Occupational health and safety management system
- ISO27001 Information security management system
- ISO50001 Energy management system



Support to your globalization through the "one-stop-testing"

JET provides worldwide customers with various services to help them obtain certifications for Japan and other countries. Participating in the IECEE-CB scheme, JET issues and recognizes CB certificates. Global certifications, including certifications for Japan, can be obtained through the services JET offers.

Certification Service for Japanese market

For customers outside Japan who hope to obtain certification based on the Electrical Appliances and Materials Safety Act of Japan, such as PSE conformity assessment certificates and S-JET certificate, JET uses CB certificates issued by testing bodies outside Japan. With this scheme, JET supports quick certification. JET accepts the results of factory inspection conducted by those testing bodies according to JET's request. Those procedures allow you to handle your certification processes efficiently.

Agency services

JET makes applications on your behalf for the certification in the countries other than Japan, such as China and Korea, using test reports and CB certificates JET issues. These services enable you to obtain desired certification quickly.

Comprehensive support services

Based on our extensive experiences, JET offers you advice on the Electrical Appliances and Materials Safety Act of Japan, including procedures associated with the law, interpretation of technical requirements, and statutory product categories. In addition, by taking advantage of the network of partner certification bodies in various countries, JET helps you have information, such as regulations of each country, procedures for certification, and applicable standards.

Oversea Services
Customer Assistance Services

JET Supports Testing and Certification under Safety Standards of Various Countries

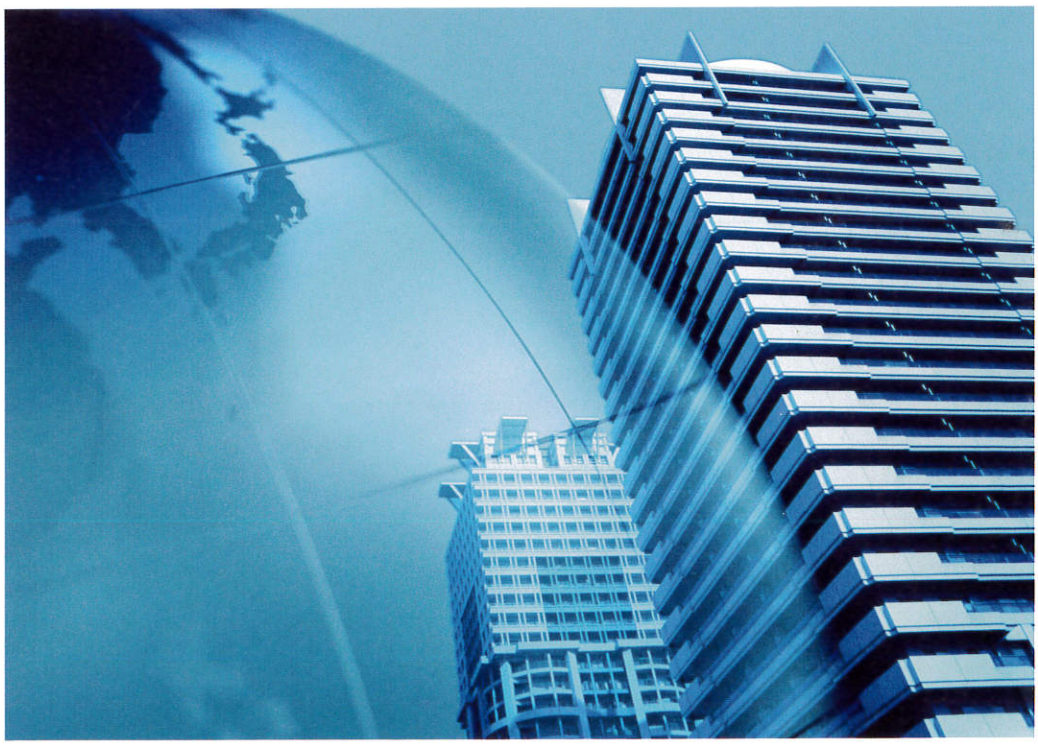
Issue and recognition of CB certificates with CB test reports

JET issues CB certificates with CB test reports based on the IECEE-CB scheme. Also, JET recognizes CB certificates with CB test reports issued by other NCBs and uses them for PSE conformity assessment and S-JET certification to accelerate certification in Japan.

Product categories for which JET can issue or recognize CB certificates under the IECEE-CB scheme are household appliances, audio-video equipment, IT equipment, photovoltaic (PV) products, luminaire, cables and cords, power tools, isolating transformers and others

Factory inspection

According to JET's request, partner certification bodies in various countries conduct factory inspection for PSE conformity assessment and S-JET certification. Also,JET conducts factory inspection for certification for countries other than Japan,such as for CQC and KTL.



Long Experience Enables JET to Provide Extensive Services.

At the request of the government and various bodies, JET researches electrical safety, technologies related to new energy, energy-saving and environmental issues, and others.

Research on technologies related to new energy

At the request of government agencies, JET carries out the research and development on the technologies for conformity evaluation and complex deterioration tests of solar cell modules. JET also researches the evaluation of photovoltaic power generation systems with the similar request. Those research and development are carried out in cooperation with national laboratories.

Testing of electrical products purchased from retailers

At the request of the government agencies, JET conducts testing of electrical products purchased from retailers for market surveillance.

Investigation about the establishment of internationally harmonized standards

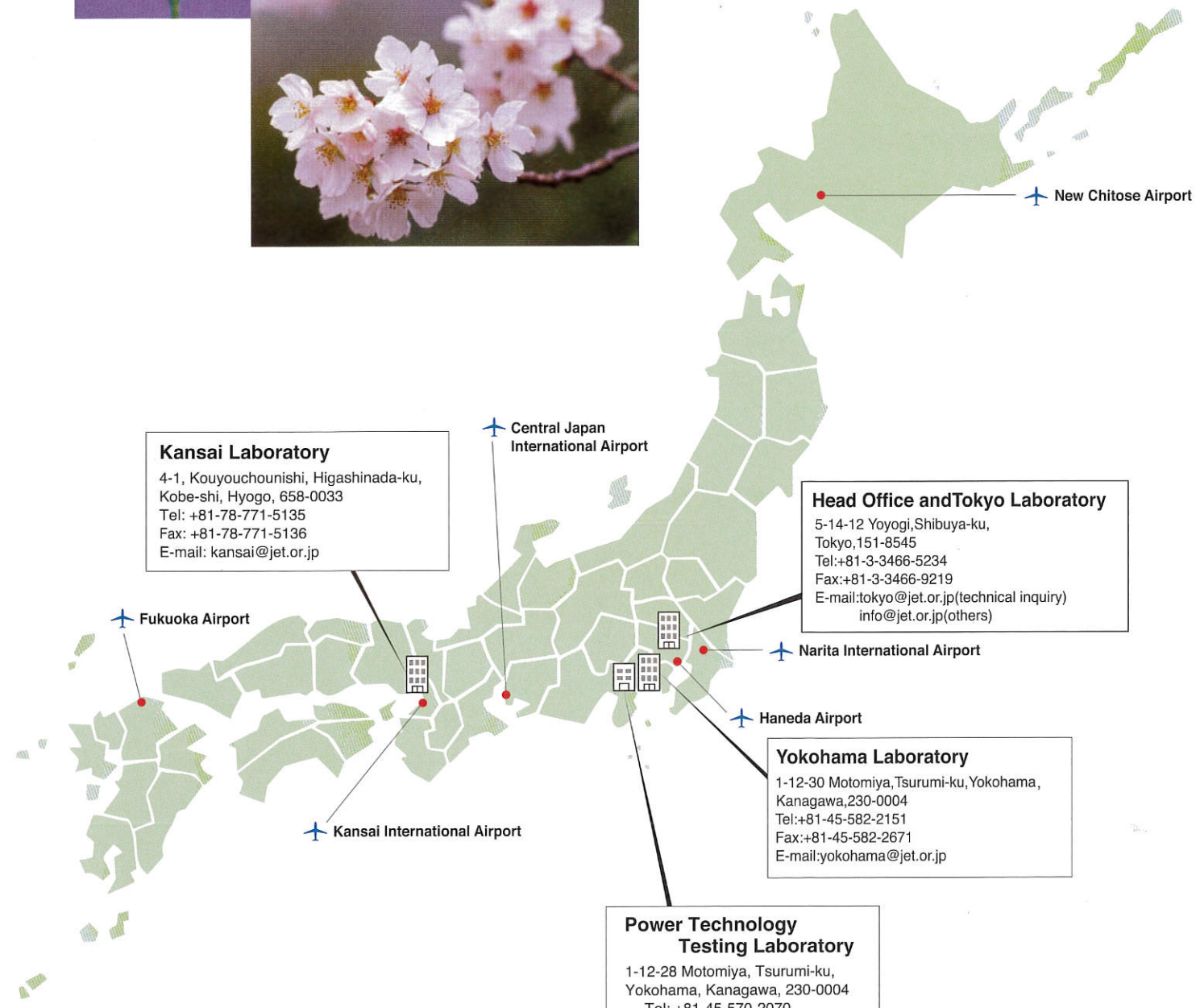
JET carries out the investigation for the establishment of national safety standards that are harmonized with international standards.

Activities to promote understanding of electrical safety

From the view of proper manufacturing, import/export, distribution and use of electrical products, JET publishes brochures to promote electrical safety and holds seminars to provide valuable information for domestic and overseas business entities (manufacturers, importers/exporters, and distributors), users (consumers) and municipal authorities.

Researches Services

Offices and Laboratories



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An introduction to **ClassNK**

[English]

The ClassNK Mission

Overview

As a classification society, Nippon Kaiji Kyokai, better known as ClassNK or simply NK, develops rules for safeguarding vessels, their crews, and the marine environment.

In order to help ensure the safety of the ships on our register, ClassNK provides a full range of survey, auditing, and services, including classification and statutory surveys, material and equipment approvals, auditing and registration of ship safety management systems and security systems, as well as certification of quality, environmental and occupational health and safety management systems in accordance with international standards. As a certified international third party organization, ClassNK has in recent years expanded its certification services to wind power and marine energy equipment, and is working to develop solutions to diverse safety and environmental issues, as well as broaden its range of maritime business services to include the logistics sector. The Society is constantly working to meet new client needs in response to new regulations and changes in the industry. In addition to its main classification services, ClassNK will continue to promote and enhance new business through the latest technology such as IoT and Big Data.

ClassNK is dedicated to ensuring the safety of life and property as well as environmental protection and other related matters through various businesses related to classification, the establishment of various standards, inspection, registration, certification, and research and development, etc. To achieve this mission ClassNK will:

- Deliver the highest quality services, by the highest quality personnel, while maintaining our totally independent third party, non-profit status.
- Develop relevant rules, guidances, and procedures, and conduct technical research and development to positively contribute to the maritime industry.
- Maintain and develop our global operations in line with the needs of our clients.

Contents

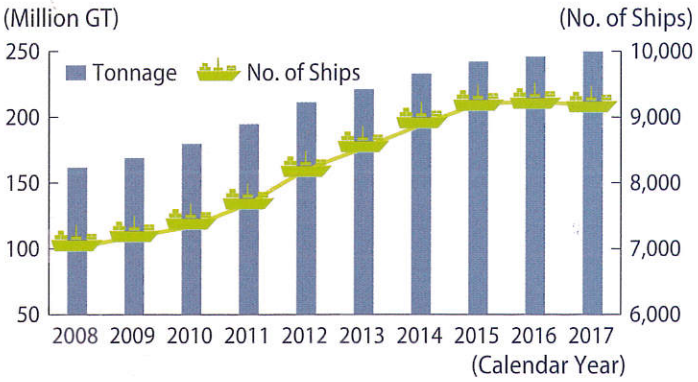
ClassNK Global Service Network

ClassNK maintains an ever expanding global service network. As of December of 2017, this network is comprised of 132 survey offices and six plan approval centers in Tokyo (Head Office), Busan, Shanghai, Singapore, Istanbul and Mumbai.

ClassNK Achievements

As of the end of December 2017, ClassNK provides classification and registration services to 9,172 vessels totaling more than 249.8 million gross tons, or roughly 20% of the world's commercial fleet.

■ Growth in amount of vessels and gross tonnage



Classification and Statutory Services

As a leading ship classification society, ClassNK is recognized as a highly reliable, impartial, third party assessment organization by shipowners, shipyards, maritime insurers, and port state control agencies around the world.

Our broad range of services encompass every aspect of ship assessment from the approval of vessel and machinery plans to the surveys and registration of ship installations, approval of materials, equipment and outfitting gear, as well as the assessment and registration of ship safety management systems and security systems.

The Foundation of Ship Safety

Classification Rules

Ships and offshore structures must be built and operated in accordance with a wide range of rules and regulations. As one of the world's leading classification societies, ClassNK develops technical rules and guidelines which are designed to help ensure ship safety. The ClassNK Rules are an essential element to the Society's continuing efforts to provide high quality classification services. Moreover, ClassNK verifies whether ships are correctly built and properly maintained in accordance with classification society rules, international conventions and flag state regulations through various surveys.

The ClassNK Rules

In addition to its Rules for the Survey and Construction of Steel Ships, ClassNK has established numerous other technical rules and guidelines. The ClassNK Rules embody the experience and technical knowledge the Society has gained over more than a century of ship classification activities. These rules not only cover a ship's hull structure at the design stage, but also apply to materials used during construction, onboard machinery and equipment, and surveys and maintenance after the ship enters into service.

In addition, the rules also apply to the shipyards and service companies responsible for the ship's construction, repair, and maintenance.

Rule Development

Just as international regulations are updated to address the latest research and technological developments, so too are the ClassNK Rules. The Society's Development Operations Headquarters is dedicated to constantly updating, revising, and creating new rules based upon the Society's own R&D projects and the activities of the IMO, IACS, and flag administrations. Once new rules are developed or existing rules are amended, the Society works to ensure that the details of such rules are widely disseminated through the regular updating of its website as well as various technical seminars, press releases, and other publications.

Manufacturer / Service Supplier Approvals

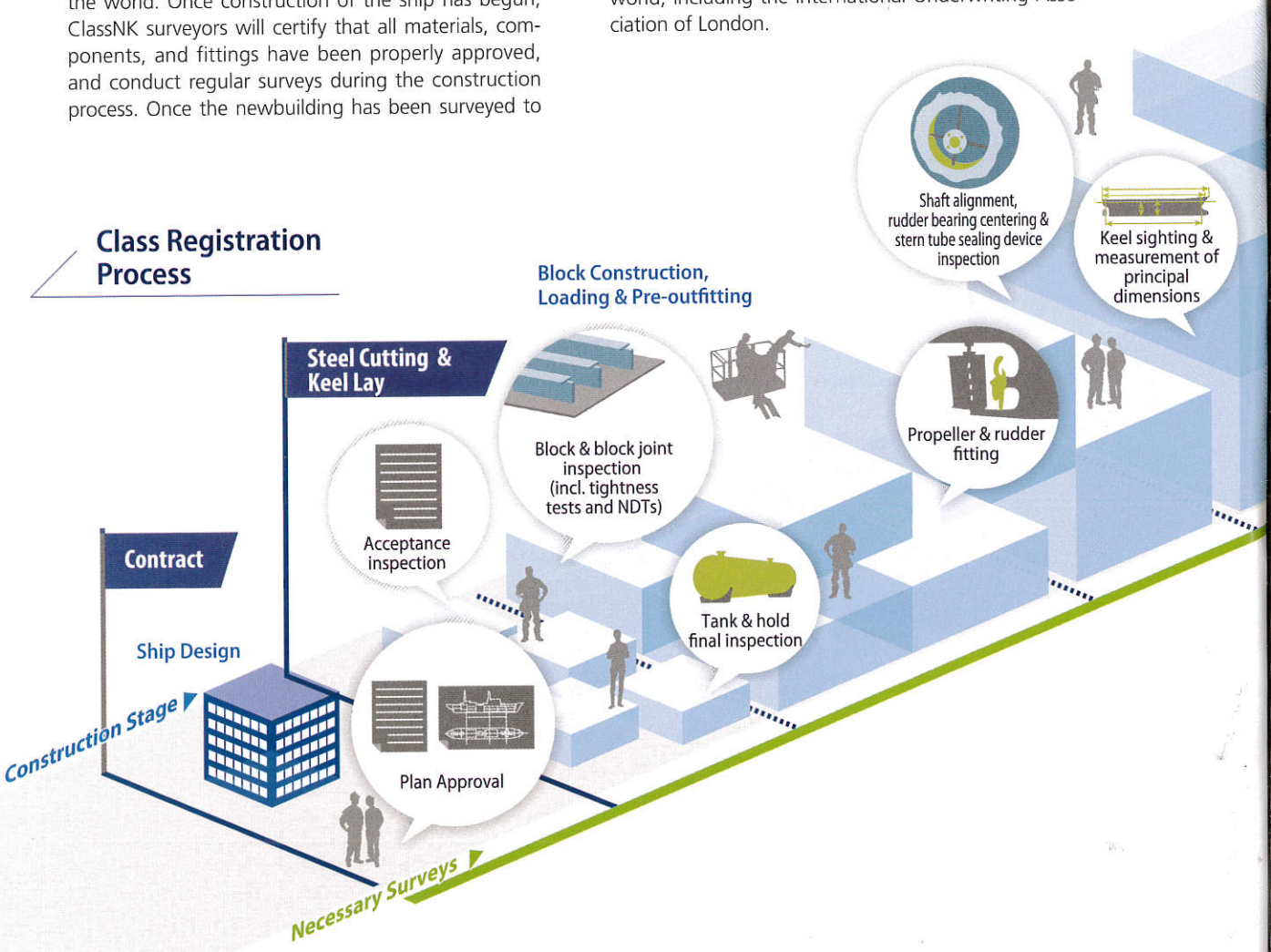
To assure and enhance the quality of the ships on its register, ClassNK conducts assessments of the quality systems, production processes and facilities of manufacturers involved in the production of materials, equipment and that of service suppliers engaged in the maintenance for equipment onboard.

Class Registration Surveys (Newbuildings)

Classification Surveys during Construction

As can be seen in the chart shown below, newbuilding classification is an extensive process with surveys that cover every stage of the ship's construction. The ship's plans, for example, must be approved by the technical staff at one of ClassNK's six Plan Approval Centers located in the major shipbuilding regions of the world. Once construction of the ship has begun, ClassNK surveyors will certify that all materials, components, and fittings have been properly approved, and conduct regular surveys during the construction process. Once the newbuilding has been surveyed to the satisfaction of the surveyor, a certificate of classification or installation registration, as appropriate, is issued and the ship is entered into ClassNK's Register of Ships. Such registration by the Society ensures the ship is recognized by port and flag administrations around the world, as well as underwriters all over the world, including the International Underwriting Association of London.

Class Registration Process



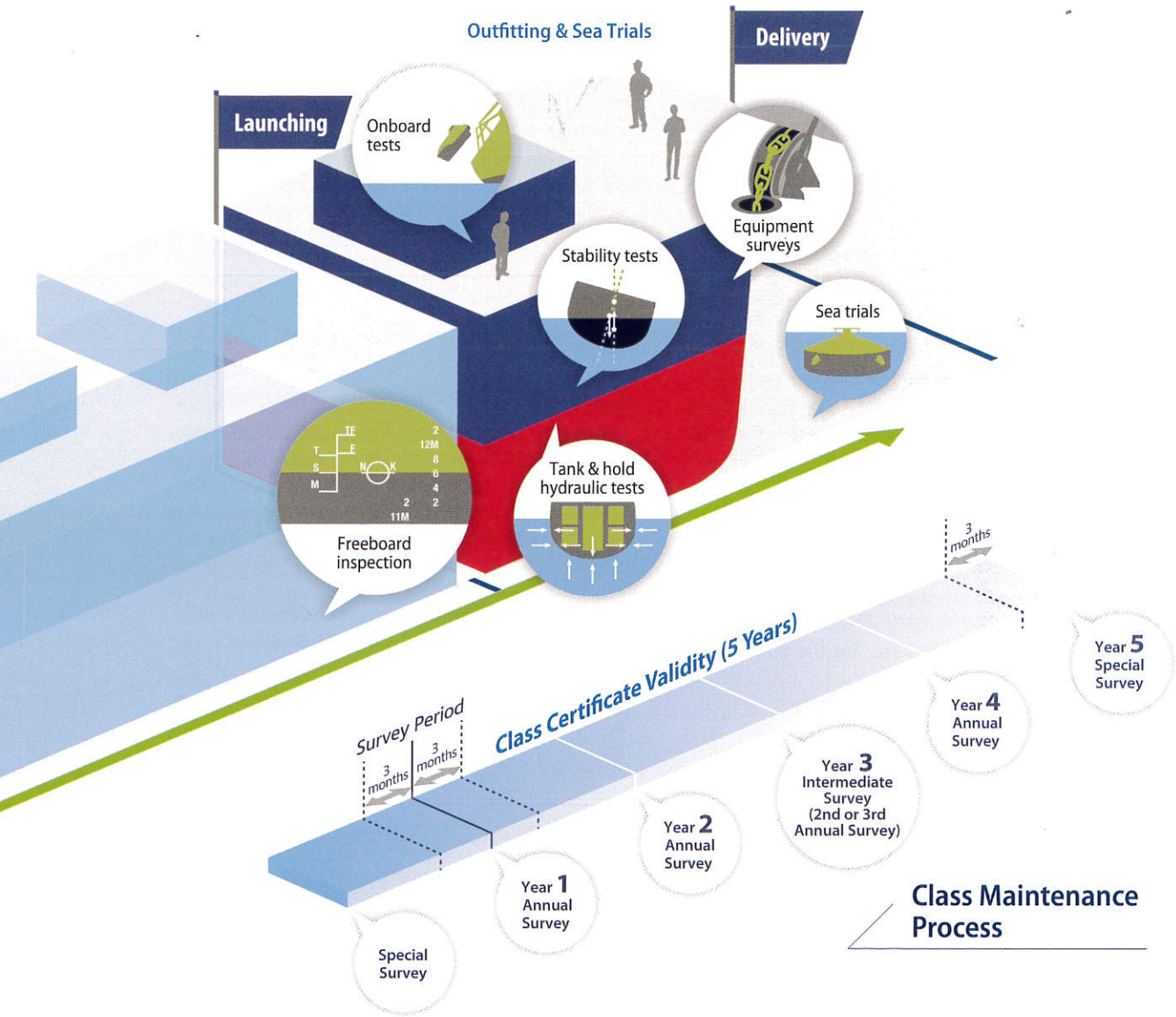
Material, Machinery, and Equipment Approvals (Type Approval)

In addition to the ship itself, certification is also required for the materials used in the construction of NK classed ships, as well as the machinery and equipment to be installed on such vessels.

This approval process includes examination and approval of equipment and machinery plans, as well as approvals of manufacturing processes, followed by surveys to confirm that the actual materials, machinery, and equipment meet NK standards.

ClassNK offers approval services for the following materials, machinery and equipment.

- Steel materials such as steel plates and pipes, as well as other non-ferrous materials
- Welding consumables
- PSPC coating systems
- Fire protection materials, airborne sound insulation, insulation for refrigerated chambers, and oil-impervious materials
- Engine room machinery and equipment, electrical and automatic machinery
- Anchors, chains, ropes, and other marine equipment
- Life saving appliances, fire extinguishing systems, ventilating fittings
- Equipment for marine pollution prevention and other related systems



Class Maintenance Process

Class Maintenance Surveys (Ships in Service)

Class Maintenance Surveys (Ships in Service)

Once registered and classified with the Society, ships are provided with a classification certificate valid for 5 years. These vessels must undergo both periodic and occasional surveys as a condition of maintaining their certification.

ClassNK provides these services through its worldwide service network in order to ensure that surveys are completed anywhere in the world and with minimum disruption to the ship's schedule.

ClassNK provides the following surveys as part of the class maintenance process:

- Annual surveys
- Special surveys
- Occasional surveys
- Intermediate surveys
- Docking surveys

Transfers of Class

Ships which have been constructed and registered in compliance with the rules of other IACS class societies may register with ClassNK by completing a transfer of class agreement (TOCA) and undergoing a survey by a ClassNK surveyor.

Statutory Services

More than 100 flag administrations around the world recognize and authorize ClassNK to act on their behalf to conduct statutory surveys and audits and issue certificates in accordance with international conventions and codes, as well as national requirements pertaining to safety at sea and the prevention of marine pollution.

Major international conventions and codes directly relevant to the surveying, auditing and certification activities of the Society include the following.

International Convention on Load Lines (ICLL)

This Convention defines the limits of load lines (i.e. legal limit of loaded cargo weight) and tightness in order to ensure the safety and watertight integrity of the vessel.

International Convention for the Safety of Life at Sea (SOLAS)

The SOLAS Convention sets out safety standards for ship construction, fire integrity, life-saving equipment, and radio communications etc. for the purpose of safety of life at sea.

International Convention for the Prevention of Pollution from Ships (MARPOL)

This Convention sets out the requirements for preventing and minimizing pollution from ships including pollution by oil, noxious liquid substances in bulk, sewage from ships and air pollution from ships etc. in order to preserve the marine environment.

Convention on the International Regulations for Preventing Collisions at Sea (COLREG)

The COLREG Convention defines navigational rules and requirements regarding signal display and shapes according to vessel type and voyage conditions in order to prevent vessel collisions at sea.

International Convention on Tonnage Measurement of Ships (TONNAGE)

The TONNAGE Convention i.e. TM69, which was introduced in 1969, sets out a universal system for the measurement of the gross and net tonnages of a ship.

International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management Code) (ISM Code)

The ISM Code sets out requirements for ship management companies to implement and maintain Safety Management System (SMS) by the company and on board in order to ensure the safe management and operation of vessels.

International Ship and Port Facility Security Code (ISPS Code)

The ISPS Code stipulates requirements for ship management companies to implement and maintain Ship Security Plan (SSP) on board in order to ensure the safety and security of vessels and port facilities.

Maritime Labour Convention 2006 (MLC, 2006)

The MLC stipulates requirements for shipowners to implement and maintain measures to comply with provisions for seafarers' living and working conditions etc. on board ships in order to improve their occupational health and safety with the aim of fair competition within the shipping industry.

International Convention on the Control of Harmful Anti-Fouling System on Ships, 2001 (AFS)

In order to protect the marine environment and human health, regulations have been put in place for the use of anti-fouling hull paint containing tributyltin (TBT) and other organic tin compounds, used to prevent shells and other marine organisms from attaching to the hull.

International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004 (BWM)

Regulations for appropriate ballast water management on vessels were established in order to protect the marine environment from potentially harmful organisms contained in ballast water discharge.

Offshore Services

In addition to its ship classification services, ClassNK also offers a wide range of classification and technical services for the offshore sector, including classification and plan approvals for the following offshore structures:

- FSRU
- FLNG
- FPSO
- FSO
- Drilling rigs, Mega-Floats and OSVs etc.

ClassNK specialists can also provide comprehensive technical services to suit a wide variety of customer demands related to offshore projects, including rule development, plan approval, and site surveys.

The scope of class registration in these cases depends on the characteristics of each individual offshore unit. For an FPSO for example, the hull and mooring systems are generally registered in accordance with classification society rules, while for the topside facilities, classification is used only to certify the minimum safety standards for key equipment.

Although class registration is not required for many offshore facilities, classification societies are often requested to examine designs in accordance with other safety standards such as specific industry standards and oil company specifications which differ from standard classification requirements.

ClassNK carries out such examination/certification work as an independent third party upon the request of our customers.

Ongoing Activities in the Offshore Sector

ClassNK strives to be actively involved in a number of offshore development projects in order to establish design guidelines for new technologies in a timely manner.

The following are just some examples of the results that have been achieved through joint offshore R&D projects:

- Development of H_2/CO_2 FPSO design
- Development of FPSO/FSO mooring analysis Tool
- Development of a small scale FLNG
- Development of Micro-GTL (Gas to Liquid) plant on FPSO
- Risk assessment for FLNG Cryogenic Fluid Leakage
- Development of semi-submersible drilling rig for deep water
- Rigid Riser VIV (Voltex Induced Vibration) assessment

ClassNK continues to incorporate the outcomes of these projects into the latest ClassNK rules and guidance.

Certification Services

ClassNK offers a wide range of certification and auditing services for renewable energy technologies and management systems based on national and international standards in addition to a number of ISO standards.
ClassNK's certification services are accredited by leading bodies both in Japan and internationally, and ClassNK certification is recognized as a mark of quality throughout the world.

Certification Services (PrimeManagement)

Industries across the full spectrum of the maritime community, from shipping and shipbuilding to seafarer training, are looking for ways in which to thrive in today's globalized world. Management systems certified to international standards have come to be seen as a key tool in boosting competitiveness and ensuring sustainable growth.

As a result, demand for services supporting the development of such systems is on the increase.

Through its PrimeManagement service ClassNK provides the below certification for a range of management systems such as quality, energy, environmental, occupational health and safety, road traffic safety management systems, in addition to certifications for seafarer education and training:

Certification Services for Management Systems

- ISO9001 (Quality Management Systems)
- ISO14001 (Environmental Management Systems)
- ISO39001 (Road Traffic Safety Management Systems)
- ISO50001 (Energy Management Systems)
- OHSAS18001 (Occupational Health and Safety Management Systems)
- HSE (Health, Safety & Environment) Management Systems
- PAS1018(Indirect, temperature-controlled refrigerated delivery service Management System)

Validation and Verification of Greenhouse Gas Assertions

- Verification according to Clean Shipping Index
- ASSET Scheme in Japan (advanced technologies promotion subsidy scheme with emission reduction targets)
- J-Credit Scheme in Japan
- Verification for CSR reports
- Verification for CDP (Carbon Disclosure Project)
- Verification following the requirements of ISO14064-1
- Validation and Verification following the requirement of ISO14064-2
- Assessment and Verification based on EU MRV
- Verification according to Clean Cargo Working Group

Certification Services for Seafarer Training

- Certification of Maritime Education & Training
- Training Course for Maritime Instructors

Certification Services for Renewable Energy Technologies

In order to support the industry's growing needs for renewable energy technologies, ClassNK provides and compiles guidelines for certification of diverse renewable energy facilities. ClassNK is contributing towards the creation of low carbon societies both in Japan and abroad through the below renewable energy certification services.

Large and Small Wind Turbines Certification Services

- Design certification, Type certification, Prototype certification
- Windfarm certification
- Project certification
- Classification survey for floating offshore wind turbines and their supporting structures

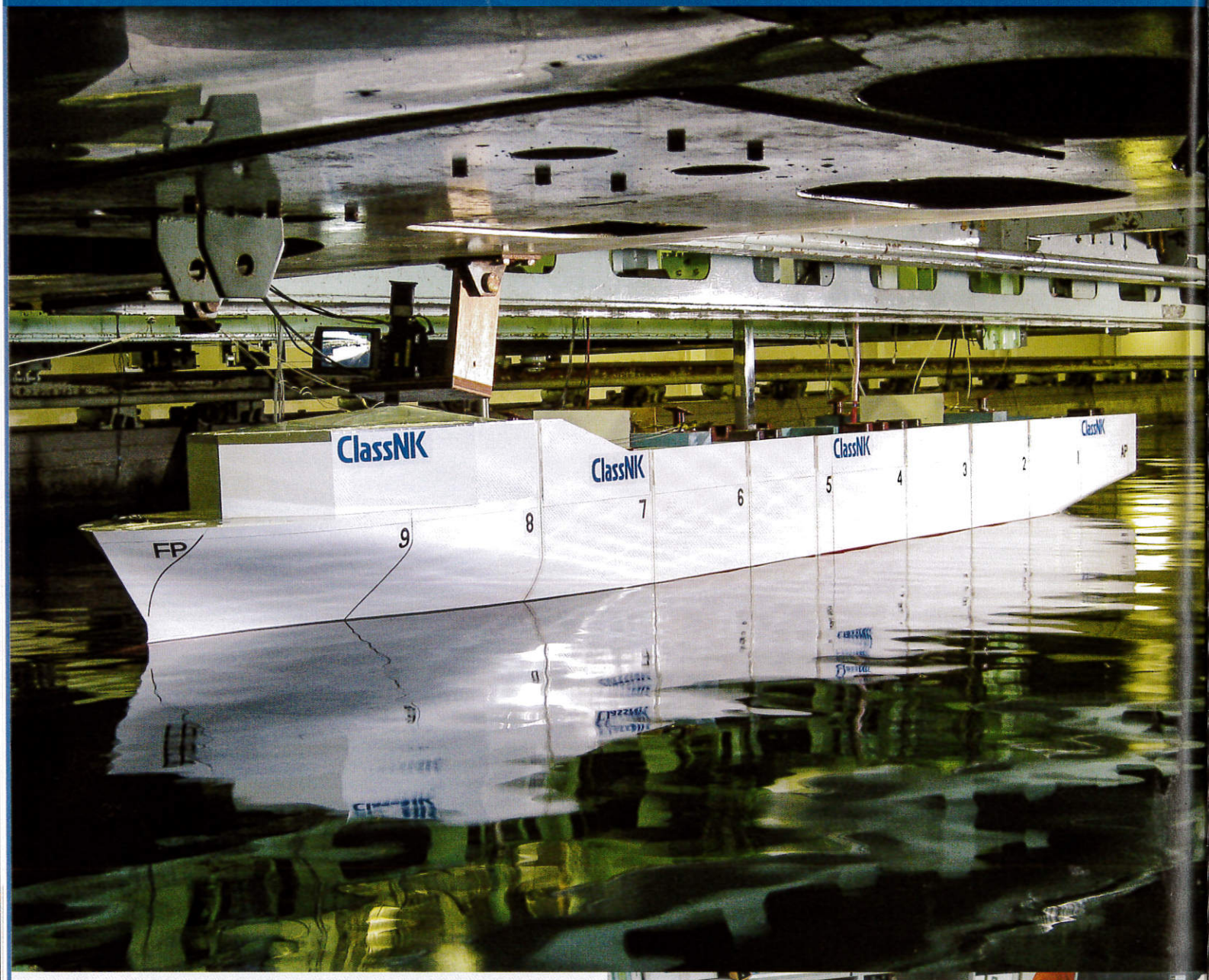
Marine Renewable Energy Convertors Certification Services

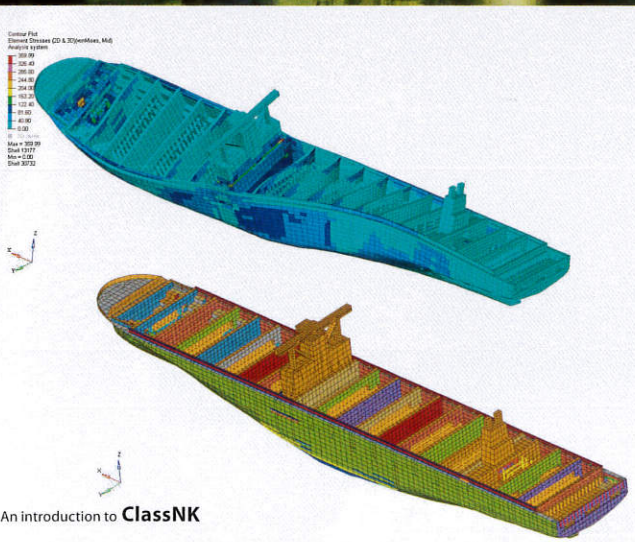
- Certification of marine renewable energy convertors (wave energy, tidal and marine energy, ocean thermal energy)

Marine Warranty Survey Services

Photos by ClassNK FUKUSHIMA HAMAKAZE

Research and Development





In addition to its surveying services, ClassNK contributes to the maritime industry through research & development.
This R&D not only relates to ship safety and protection of the marine environment, but also emphasizes collaboration with universities, research institutions, and the industry to promote joint research on common issues and to develop human resources while fulfilling ClassNK's role as a classification society.

R&D Roadmap Schedule

The "ClassNK R&D Roadmap 2017", which was established in July 2017, aims to bring about the innovation of maritime technology using the latest IT as well as help ensure the safety of life and property at sea, with specific focus on development in the following four areas:

- Rule Development (rationalization of existing rules, increased transparency/rationalization of new rule development)
- Survey Technology Innovation (revolutionizing surveys through high level ICT technologies, development of remote survey technologies and survey robots)
- Marine Environmental Protection (investigation trends in environmental regulations, developing evaluation and verification techniques for environmental protection technology)
- Revolutionary Technology Development (innovation of marine technology through digitalization, developing evaluation and verification techniques for revolutionary technologies)

The R&D activities of the above are based on the following two major elements:

- Foundational R&D geared towards Core Technologies* and Integrated HR Development through R&D
- Utilization of Damage Information for Major Damage Prevention

ClassNK will collaborate with universities, research institutions, and the industry to execute the R&D Roadmap together with contributions from the further development of human resources. Through this R&D, ClassNK aims to bring about the innovation of maritime technology using the latest IT based on its mission to help ensure the safety of life and property at sea.

*Core Technologies are:

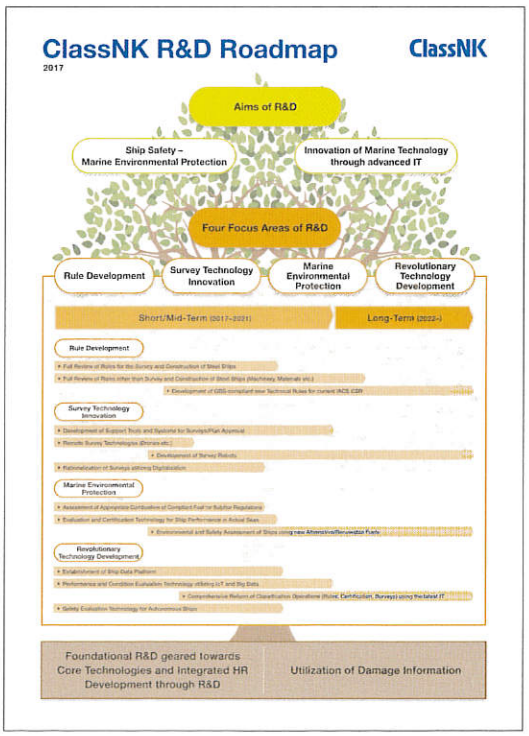
- Structure (non-linear, use active response analysis, implement load structure consistency analysis etc.)
- Motion, load (elastic response, load structure coupling, CFD, etc.)
- Material, welding (streamline fracture assessments, fatigue strength assessments, corrosion prediction etc.)
- Information, control, communications, electronics (AI, image processing, data analysis, etc.)
- Energy, environment (renewable energy, environmental impact, etc.)

Classification Related R&D

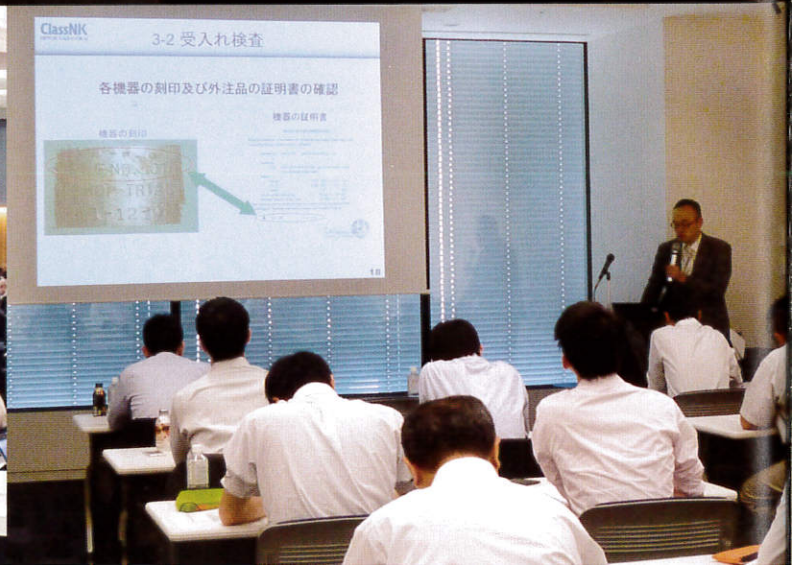
ClassNK has carried out R&D directly related to classification according to the research & development plans that reflect the opinions of the industry.

In 2015 research and investigations were carried out into the structural strength of large container ships, liquefied gas carriers and pure car carriers respectively.

The rules for the hull girder ultimate strength and direct strength analysis of large container ships were amended in 2016 and 2017 with consideration of the results from relevant research and investigations.



Technical Services and International Activities



ClassNK offers a comprehensive range of services to meet the specific needs of the maritime industry including a range of technical services for vessels throughout their lifetime in addition to a variety of technical seminars and ClassNK Academy courses which are provided to contribute toward the development of the international maritime community.

ClassNK is an active member and participant in both the International Maritime Organization (IMO) and the International Association of Classification Societies (IACS). ClassNK has established international committees throughout the world to allow for the open exchange of information between the Society and local maritime leaders in order to contribute toward the greater good of the global maritime industry.

Technical Services

In addition to the PrimeShip suite of services, ClassNK offers a complete range of technical services and inspection services for the maritime industry and related industrial sectors as follows:

Maritime Appraisal and Certification Services

ClassNK's technical services also encompass a broad spectrum of appraisal and certification services, including:

- Hull underwriter surveys
- Condition surveys
- Damage surveys and inspections
- Appraisal surveys for navigation
- Design and strength evaluations
- Ship Condition Assessment Program (CAP)
- Fuel and lubricating oil analysis
- Conformance certification for ship installations
- Tonnage certification for passage through the Suez and Panama canals
- Certification in accordance with special regional and national administration regulations
- Issuance of Statement of Compliance for IHM (Inventory of Hazardous Materials) under the Ship Recycling Convention
- Ship Energy Efficiency Management Plan (SEEMP)

Industrial Inspection Services

ClassNK also conducts industrial surveys and inspections of machinery, materials and systems for shore-based plants, and similar industrial structures as shown below.

1. Inspections during the construction of boilers, pressure vessels, pressure piping, and other industrial machinery to be imported into the several countries on behalf of the local administration.
2. Inspections of purchase contracts as a designated third party.
3. Inspections as agents on behalf of the purchaser.

Testing and Inspection of Material Testing Machines

ClassNK also provides testing and inspection services for tensile testing machines, compression testing machines, impact testing machines, hardness testing machines, as well as force proving instruments in accordance with the ClassNK Rules for Testing Machines and JIS.

ClassNK Academy and Technical Seminars

ClassNK makes its extensive experience, expertise, and technical knowledge available to the entire maritime community via ClassNK Academy courses and technical seminars to expand the knowledge of clients who range from beginners to experts and contribute to the growth and development of the maritime community.

ClassNK regularly provides a variety of ClassNK Academy courses with a focus on surveys and other inspections on-demand in countries around the world, and all courses are taught by not only ClassNK staff, but also experienced shipping and shipbuilding professionals.

ClassNK also holds regular technical seminars for its clients and maritime stakeholders around the world, providing in-depth analysis on a wide number of technical and statutory issues.

International Activities

As a global organization, ClassNK maintains membership in a number of international decision and rule making bodies, and contributes to numerous maritime bodies around the globe.

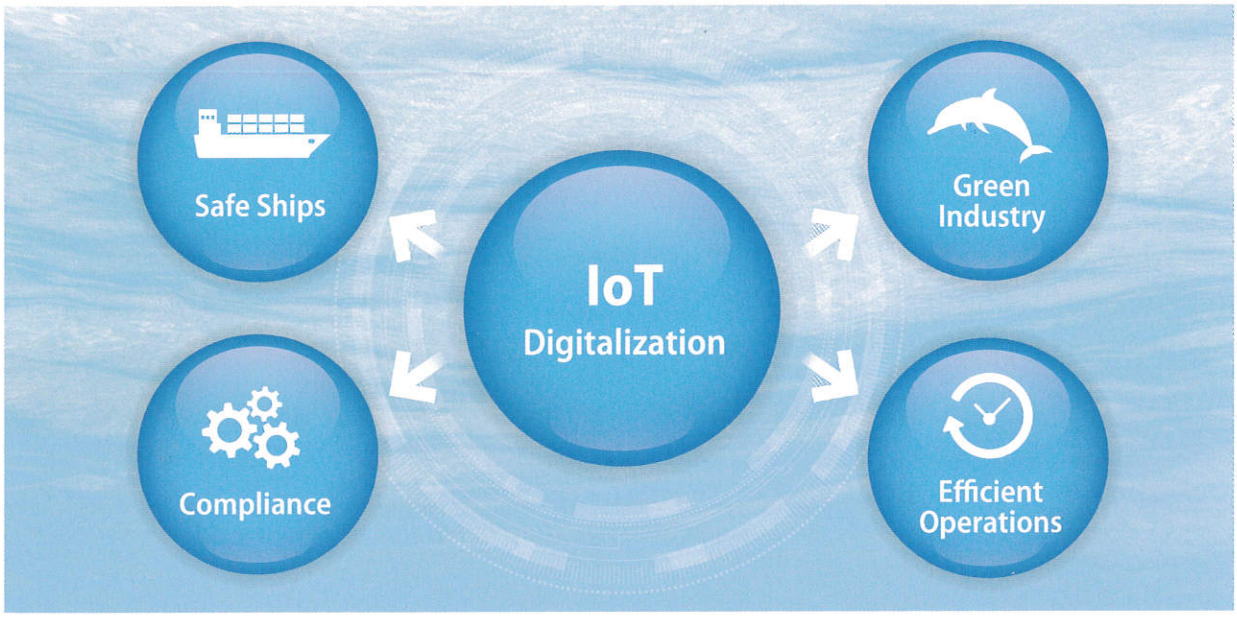
ClassNK is an active participant in the International Association of Classification Societies (IACS), and greatly contributes to the development of rules and regulations, such as the IACS Unified Requirements (UR) and Unified Interpretations (UI). ClassNK also dispatches experts and researchers to meetings of the International Maritime Organization (IMO), both as representatives of IACS and the Japanese government, among other international activities conducted by the Society.

In order to contribute to the greater good of the entire global maritime community, ClassNK has established international committees throughout the world to allow for the open exchange of information between the Society and local maritime leaders.

About Digitalization Services

We live in a society in which IoT, Big Data analysis, and AI are being used for improvement in productivity and sophistication of industrial infrastructure, and ultimately, added value and competitiveness.

ClassNK provides advanced software and services that take advantage of digitalization for the safety and productivity of our clients. This section introduces those main digitalization services.



Safe Ships

H-CSR software

PrimeShip-HULL for Harmonised CSR

The world's first essential support tool for H-CSR "IACS Common Structural Rules for Bulk Carriers and Oil Tankers" designs

This software for hull designers has been completely upgraded through the introduction of the latest IT based on knowledge accumulated through the development of our array of software solutions and on CSR-OT and CSR-BC user demands. It supports the efficiency of basic hull designs in line with H-CSR with its newly developed features and enhanced existing features.

Hull Maintenance

PrimeShip-HULLCare

Supports ship-specific maintenance with databases of maintenance information collected from vast amounts of surveys

Compiles and categorizes survey data collected from across ClassNK's global service network to provide hull maintenance information for each vessel registered for the Enhanced Survey Program (ESP) scheme. Using colorful and intuitive displays, users can verify the history of the hull condition for each of its vessels, and create an appropriate maintenance management plan.

Condition Based Maintenance

ClassNK CMAXS

Software which uses highly advanced IBM algorithms to detect abnormalities

Enabling safe vessel operation and life cycle cost reduction through the use of Big Data, this software can unitarily manage system state diagnostics of various threats.

ClassNK-CMAXS consists of two systems: ClassNK CMAXS LC-A which carries out abnormality/status diagnostics of machinery using advanced data analysis technology, and ClassNKCMAX e-GICS which carries out diagnostics of the main engine.

Compliance

GBS-SCF Onshore Archive Center

ClassNK Archive Center Service

The world's first cloud-based Archive Center service compliant with the IMO GBS "Ship Construction File" requirements

ClassNK Archive Center (NKAC) was established as the world's first archive center compliant with the IMO GBS (Goal-based Standards) and industry requirements. NKAC has been certified in accordance with Information Security Management System (ISO-27001) , and from its position as a third party, provides an environment in which the entire industry can safely store and operate SCF (Ship Construction File) electronic data onboard and onshore with peace of mind. NKAC can also be used for the storage and management of documents other than GBS-SCF.

Green Industry

IHM development and maintenance

PrimeShip-GREEN/SRM

Widely adopted as a de-facto standard software that significantly reduces the burden for the IHM

The software supports the development and maintenance of "Inventory of Hazardous Materials (IHM)" required by regulations for safe and environmentally sound ship recycling. It realizes the efficient information exchange between shipping companies, shipbuilders, and suppliers, and generates the IHM automatically with minimum input, resulting in great reduction of the burden associated with IHM.

Efficient Operations

Electronic Certificate

ClassNK e-Certificate

The comprehensive electronic class and statutory certificate system which reduces administrative burdens and costs associated with the shipping/ preservation of documents

The service issues class and statutory certificates in electronic format (PDF) to vessels to reduce administrative burdens and costs associated with the shipping/ preservation of documents. It is in compliance with the IMO "Guidelines for the use of electronic certificates"(FAL.5/ Circ.39/Rev.2).

Voyage Optimization

ClassNK-NAPA GREEN

Comprehensive tools that provide optimal fleet maintenance and operation with ship performance monitoring and analysis based on ship-specific Big Data

This system (of software and service) carries out ship operation/performance monitoring and offers an optimal weather route, speed profile and trim to reduce fuel consumption/emissions, thus providing tangible and proven savings.

This system is equipped with a self-learning performance model that provides optimal voyage plans and maintenance with high accuracy.

Big Data Platform

Ship Data Center (ShipDC)

Ship Data Center Inc. was established for the wide adoption and promotion of IoS (IoT for ships) data

Going beyond individual shipowners, shipyards, and so on, ShipDC collects and provides vessel data to the various players of the maritime industry and promotes an open platform structure. While various players concentrate on their area of specialty in data circulation like the collection, storage, analysis, and use of data, Ship DC fulfills its role as an independent data center and contributes to the wide use and promotion of maritime IoS data.

Organization

As of 1 April 2018

Board of Directors

The Board of Directors consists of Directors appointed by the Administrative Council. Amongst other things, the Board of Directors determines the work to be carried out by the Society, oversees the activities of the Directors, and performs other duties as prescribed under applicable laws and regulations of the Society.

Technical Committee

The Technical Committee consists of Officers of the Society as well as representatives appointed from among shipowners, shipbuilders and manufacturers, producers of ship-use materials, as well as other persons of relevant learning and experience. It deliberates on various matters related to the establishment, revision, and abolition of rules regarding the classification and survey of ships.

Marine Committee

The Marine Committee consists of Officers of the Society as well as representatives appointed from among shipowners, various organizations, as well as other persons of relevant learning and experience. It deliberates on various matters related to the establishment, revision, and abolition of rules regarding the operation of ships.

Administrative Council

The Council consists of representatives appointed from among shipowners, shipbuilders, manufacturers of marine machinery and equipment, and others concerned with maritime affairs, as well as other persons of relevant learning and experience. The Council deliberates on the election of Officers of the Society (both Directors and Auditors), revisions to the Articles of Incorporation, approval of the financial reports of the Society, and other matters as prescribed under applicable laws and regulations, and the Articles of Incorporation of the Society.

Auditors

Auditors are appointed by the Council. Auditors audit the execution of duties by the Directors and prepare audit reports in accordance with the provisions of applicable laws and regulations.

- Korea Committee
- Korea Technical Committee
- Taiwan Committee
- Taiwan Technical Committee
- China Committee
- China Technical Committee
- Hong Kong Committee
- Hong Kong Technical Committee
- Singapore Committee
- Singapore Technical Committee
- Philippine Committee
- Thai Committee
- Malaysia Committee
- Indonesia Committee
- Indian Committee
- Indian Technical Committee
- Greek Committee
- Greek Technical Committee
- Middle East Technical Committee
- Turkish Committee
- Turkish Technical Committee
- British Committee
- Danish Technical Committee
- North American Committee
- Latin American Committee
- Brazil Technical Committee
- Chile Technical Committee

President & CEO

Senior Executive Vice President

Senior Corporate Officer

Corporate Officer

- Domestic Branches
- Overseas Offices

- Administration Division
  - Human Resources Department
  - General Affairs Department
  - Human Resources Development Center
- Business Operations Division
- Plan Approval and Technical Solution Division
  - Hull Department
  - Machinery Department
  - Material and Equipment Department
  - Technical Solution Department
- Survey Operations Division
  - Survey Department
  - Ship Management Systems Department
  - Classification Department
  - Emergency Technical Assistance Service Team
- Rule Development and ICT Division
  - Hull Rules Development Department
  - Machinery Rules Development Department
  - External Affairs Department
  - Information Technology Department
- Research Institute
- Innovation Development Division
  - Certification Department I
  - Certification Department II
  - Renewable Energy Department
  - Project Strategy Office
  - Testing Machine Team
- Planning Division
  - Public Relations Team
- Finance Department
- Audit Department
- Corporate Governance Team
- HSE Team

History

1899

Teikoku Kaiji Kyokai (TKK) is established

The Teikoku Kaiji Kyokai (TKK), forerunner to the present Society Nippon Kaiji Kyokai (ClassNK), is born. Prince Takehito Arisugawa is elected as President of the Society.

1920

TKK classes first ship

The Kwanan Maru becomes the first ship to receive a class certificate from TKK. Following the classification of the Kwanan Maru, the TKK's register continues to grow until it reaches over 1 million gross tons in 1929.

1946

Society is renamed

The Society is renamed the Nippon Kaiji Kyokai. This is later abbreviated to NK and in 1992 the ClassNK name and logo is created.

1962

NK establishes branch offices in New York and London

In response to the growth in ship registrations, ClassNK establishes its first overseas branch offices to provide surveys all over the world. Today, ClassNK has around 130 exclusive survey offices in 50 different countries worldwide where it performs surveys 24/7.

2011

ClassNK becomes a General Incorporated Foundation

ClassNK becomes a General Incorporated Foundation under Japanese law, paving the way for running subsidiary companies. ClassNK can now provide an even wider range of services to the industry.

2012

NK fleet tops 200 million tons

Along with the growth of the maritime industry, the ClassNK fleet continues to expand. After reaching ten million gross tons in 1965, 30 years later in 1997 this figure increases tenfold to 100 million until ClassNK becomes the first in the industry to reach 200 million gross tons in 2012.

An introduction to ClassNK

[English]

NIPPON KAIJI KYOKAI
4-7 Kioi-cho, Chiyoda-ku, Tokyo 102-8567
TEL : 03-5226-2047
E-Mail : eod@classnk.or.jp

www.classnk.com

March 2018

JQA Business Outline

August 22, 2019

JAPAN QUALITY ASSURANCE ORGANIZATION

Overview

Company Name	Japan Quality Assurance Organization (JQA)
President & CEO	Noriaki KOBAYASHI
Head Office	1-25, Kandasudacho, Chiyoda-ku, Tokyo, Japan
Established	October 28, 1957
Fiscal Year	From April 1 to March 31 of the following year
Employees	899(as of April 1, 2019)
Offices	18 offices throughout Japan and 3 oversees offices

Offices

Office in Bangkok, Thailand:
JQA Asia (Thailand) Co., Ltd.
Operating Certification Services for Management Systems.

JQA Calibration Vietnam Co., Ltd. (JQACV) in Hanoi, Vietnam
Operating Calibration & Verification of Measuring Instruments.

JQA EURO Office in Essen, Germany
JQA Representative Office

18 Offices are located in Japan, operating various services.

Iwate
ISO TOHOKU Office

Fukushima
Sales Office

Tokyo
- Head Office
- **Safety & EMC Center /Measurement & Calibration Center**
- KANTO Machinery Testing Lab.

Kanagawa
Yokohama Testing Lab

Yamanashi
TSURU EMC Site

Aichi
- ISO CHUBU Office
- CHUBU Testing Center
- SHIKATSU Branch
- NAGOYA Construction Materials Testing Lab.

Osaka
- ISO KANSAI Office
- KANSAI Testing Center
- KITA-KANSAI Testing Center
- SAITO EMC Branch

Fukuoka
- ISO KYUSHU Office
- KYUSHU Testing Lab.

Hiroshima
Sales Office

History (roots of our main activities as of today)

1957	Established as "Japan Machinery and Metals Inspection Institute (JMI)"
1958	Started inspection in the fields of electronics and machinery
1962	Started overseas safety conformity testing based on the standards of UL (USA) and CSA (Canada) under the MOU contracts
1963	Started calibration of measuring instruments
1990	Started certification based on ISO 9000 series (Quality)
1993	Changed name to "JQA"
1994	Started the JCSS calibration laboratory of measuring instruments
1995	Started the S-JQA mark certification of product safety
2000	Started the A2LA calibration laboratory of measuring instruments
2004	Registered as a Designated Operational Entity for CDM by UN
2005	Started JIS Mark certification under the Industrial Standardization Law
2011	Changed the corporate status to a general incorporated foundation with the laws concerning the reform of public-interest corporations
2013	Established JQA Asia (Thailand) Co., Ltd. in Bangkok, Thailand.
2018	Established JQA EURO Office in Essen, Germany
2018	Established JQA Calibration Vietnam Co., Ltd. (JQACV) in Hanoi, Vietnam

Business Segments

(1) Certification Services for Management Systems

(2) Testing & Certification of Electrical and Electronic Products

(3) Calibration & Verification of Measuring Instruments

(4) Testing & Inspection of Construction Materials and Machinery

JIS JQA

(5) JIS Mark Certification

(6) Verification & Certification for Environmental Concerns

(7) Testing & Inspection related to Information Security

(8) Evaluation & Certification of personal care robots

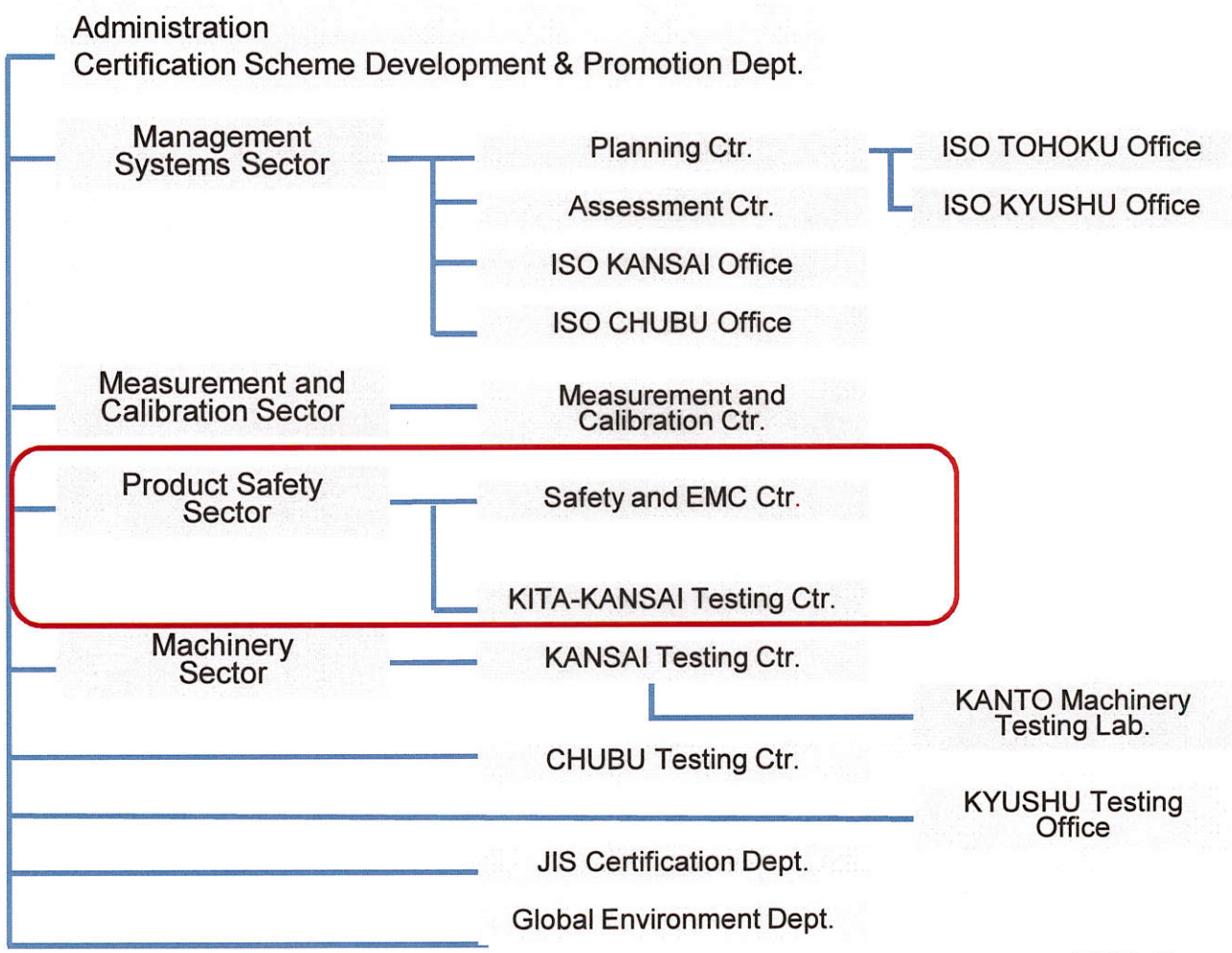
Organization Chart (as of June 24, 2019)

President &CEO
Noriaki KOBAYASHI

Senior Executive Board Director
Masayasu HOSUMI

Board Director
Toshinori HIRATA
Yoshio KOBAYASHI
Takuro KATAGIRI
Sadahiro HIRAIWA
Makoto OTSUBO
Sumio ASADA

Corporate Auditor
Hisaichi MINE



Business Segments (1)

Certification Services for Management Systems

We, as a certification body boasting both comprehensive strength and expertise, offer our certification services of management systems based on various standards and criteria.

Main Activities

Assessment and Registration in accordance with;

ISO9001	ISO14001	ISO27001	ISO20000	BCMS ISO 22301	ISO 50001	ISO 39001
Quality	Environment	Information Security	IT Service	Business Continuity	Energy	Road Traffic Safety
ISO 22000 FSSC 22000	ISO13485	JIS Q 15001	OHSAS18001	ISO/TS16949	JIS Q 9100	TL9000
Food Safety	Medical Devices	Privacy Protection	Occupational Health & Safety	Automotive	Aerospace	Telecommunication

JQA

Business Segments (2-1)

Testing & Certification of Electrical Products

We conduct testing and certification services for electrical components, products and medical equipment pursuant to domestic, international, and industry standards.

Main Activities

- Mandatory Certification in Japan
  - ·Electrical Appliance and Material Safety Law
  - ·Consumer Product Safety Law (Act)
  - ·Pharmaceuticals and Medical Devices Law
  - ·Radio Law

認証番号AH

- JQA Certification Services
  - ·S-JQA Mark
  - ·CMJ Component Registration
  - ·IECEE
  - ·IECQ
  - ·BSMI Certification (Taiwan)

Business Segments (2-2)

Testing & Certification of Electrical Products

We conduct testing and certification services for electrical components, products and medical equipment pursuant to domestic, international, and industry standards.

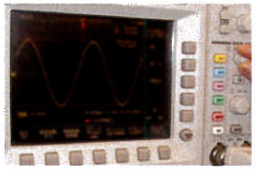
Main Activities

- Global Market Access
  - ・Application services for international approvals
  - ・Globally-recognized testing

- Testing Services
  - ・Safety ・EMC ・Wireless & communications ・Radio ・Energy Efficiency
  - ・Batteries ・IP code (waterproof and dustproof) ・LED Lighting ・Lasers
  - ・Other testing

Business Segments (3)

Calibration & Verification of Measuring Instruments



To enhance the reliability of measuring instruments for quality control in the manufacturing and service industries, we have constructed a system based on an international standard and conduct calibration service for confirming instruments' performance.

Main Activities

- Calibration of Measuring Instruments
- Verification of Specified Measuring Instruments
- Seminar on Control of Measuring Instruments

JCSS is the accreditation symbol of Japan Calibration Service System under the Measurement Law. JQA Measurement and Calibration Center (JCSS 0029), CHUBU Testing Center (JCSS 0064), KANSAI Testing Center (JCSS 0071) and KYUSHU Testing Office (JCSS 0104) are accredited by JCSS and authorized through the internationally-accepted MRAs.

The symbol marks shown above are carried by a calibration laboratory accredited by A2LA. JQA Measurement and Calibration Center (1400.01), CHUBU Testing Center (1400.04), KANSAI Testing Center (1400.03) and KYUSHU Testing Office (1400.05) are A2LA-accredited laboratories to meet the requirements of ISO/IEC 17025.

Business Segments (4)

Testing & Inspection of Construction Materials & Machinery

We conduct testing of construction material such as concrete and steel bars for concrete reinforcement, and conduct inspection of machinery and metal materials at the design and development stages.

Main Activities

●Testing of Construction Material

- Testing of Construction Material
- Testing of Concrete Building Investigation

●Testing of Machine and Metal Materials

- Testing of Product and Metal Materials
- Checking of Measuring Instrument for Salinity Content
- Checking of Schmidt Hammer

Business Segments (5)

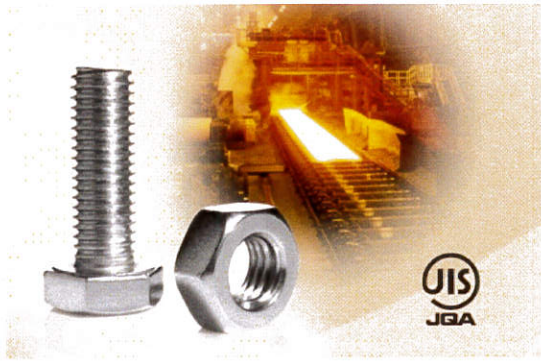
JIS Mark Certification

As a registered certification body for products under the JIS Mark certification scheme in Japan, we conduct JIS certification of products covering the widest technical scope in response to customer needs worldwide.

Main Activities

Certification of Industrial Products and Processing Technologies in the Following Fields;

- Civil Engineering and Architecture,
- Mechanical Engineering, Electronics and Electrical Engineering,
- Ferrous Materials and Metallurgy,
- Non Ferrous Materials and Metallurgy,
- Chemical Engineering, Mining, Pulp and Paper, Ceramics,
- Groceries, etc.



Business Segments (6)

Testing & Inspection related to Information Security

We conduct certification of organization's management system and inspection of facilities at data centers pursuant to various safety standards to minimize risk.

Main Activities

●Conformity Certification of Safety Measure for Information Security
Conformity Certification of Safety Measure for
•Data Centers
•Data Storage Center
•Recycling Center

●ISO Certification
•ISO 27001 (Information Security)
•ISO 20000 (IT Service)
•ISO 22301 (Business Continuity)

JQA

Business Segments (7)

Verification & Certification Services for Environmental Concerns

We will support environmental protection activities from various aspects by third-party audit to aim at preventing global warming and achieving sustainable development society with reduction of environmental load.

Main Activities

- CDM(Clean Development Mechanism),
  JCM (The Joint Crediting Mechanism)
- Assessment of Sustainability Reports
- The third-party Verification of Environmental Information
- J-Credit Scheme
- Japan Carbon Offsetting Scheme
- The CFP Communication Program

JQA

Business Segments (8)

Evaluation & Certification of personal care robots

We conduct evaluation and certification of personal care robots / safety-related systems based on international standards. We also conduct technical support for risk assessment of products, providing technical seminar and etc.

Main Activities

- ISO 13482 (Personal care robots)
- ISO 26262 (Automotive)
- IEC 61508 (Functional safety) etc

Prof. Sankai, University of Tsukuba / CYBERDYNE Inc.

OUTLINE of Product Safety Sector

OFFICES

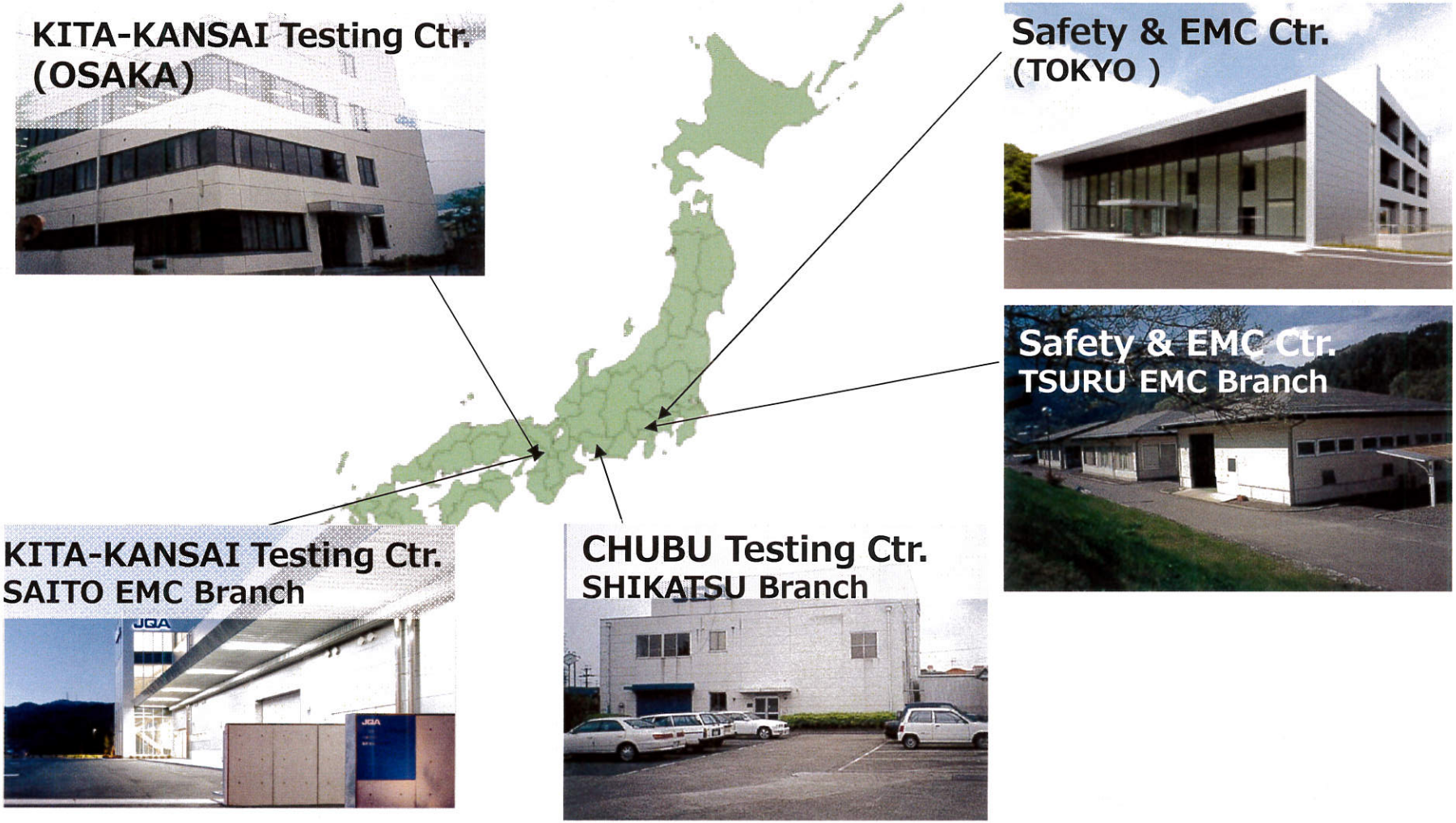
- **Executive Officer :** Sadahiro HIRAIWA, Board Director
  Deputy Executive Officer : Takehiko SHIOTA, Director

- **Executive Officer's Office** (Minamiosawa, Hachioji-shi, Tokyo)

- **Laboratories & Offices:** Tokyo, Yamanashi, Osaka(2 labs), Aichi.
  - **Safety & EMC Center** (Minamiosawa, Hachioji-shi, Tokyo)
    - TSURU EMC Branch (Tsuru-shi, Yamanashi)
  - **CHUBU Testing Center** (Kita Nagoya, Aichi)
    - SHIKATSU Branch (Kita Nagoya-shi, Aichi)
  - **KITA-KANSAI Testing Center** (Minoh-shi, Osaka)
    - SAITO EMC Branch (Ibaraki-shi, Osaka)

MAP of Laboratories

Product Safety Sector



JQA

ACTIVITIES

Product Safety Sector

1. Voluntary Certification Services

- JQA Product Safety Certification (S-JQA Scheme)
- CMJ Registration
- IECEE CB Certification and IECQ Certification
- Conformity assessment for BSMI certification scheme based on MRA between Japan and Taiwan

2. Mandatory Approval in Japan

- Testing & Certification under Electrical Appliances and Materials Safety Act (DENAN, PSE Mark)
- Testing & Certification under Consumer Product Safety Act (PSC Mark)
- Certificate under Pharmaceuticals and Medical devices Law
- Certification under Radio Law

3. Others

- Testing & Inspection for Overseas Certification
  (CSA, KTL, VDE, UL, INTERTEK, GOST-ASIA, SASO, etc.)
- Testing & Certification under International Scheme
  (IECEE/CB Scheme, etc.)
- EMC testing

SCOPE of Product

Product Safety Sector

➢Audio Visual & IT Equipment

LCD & PDP Television, Video recorder, Blu-ray Disk recorder/Player, DVD recorder, Digital audio, Home theater system, etc


➢Home Appliance & Industrial Equipment

Microwave oven, Refrigerator, Washing machine, Vacuum cleaner, Air conditioner, Electric fan, Electric iron, Electric tools, Vending machine, etc



➢Component and Materials

Electric wire, Switch, Capacitor, Plastic materials, etc


➢Medical Device, Laser Device

➢others

JQA

ACCREDITATION Status

Product Safety Sector

Registration Program for Certification body (*ISO/IEC 17065, ISO/IEC 17021-1 and ISO/IEC 17020)*

- **Registered Conformity Assessment Body** under Electrical Appliances and Materials Safety Act in Japan : ***ISO/IEC 17065 (and ISO/IEC 17025)***
- **Registered Conformity Inspection Body** under Consumer Product Safety Act in Japan: ***ISO/IEC 17065 (and ISO/IEC 17025)***
- **Registered Certification Body** under the Pharmaceuticals and Medical Devices Law in Japan: ***ISO/IEC 17065, ISO/IEC 17021-1***
- **National Certification Body (NCB)** under IECEE-CB Scheme: ***ISO/IEC 17065***
- **BSMI** (Bureau of Standards, Metrology and Inspection), TAIWAN R.O.C
  BSMI designated Certification body and Inspection Body : ***ISO/IEC 17065 and ISO/IEC 17020***

Accreditation Program for Testing Laboratory (*ISO/IEC 17025)*

- **JNLA** (Japan National Laboratory Accreditation System)
  Accredited under the Industrial Standardization Act (JIS)
- **IA Japan** (International Accreditation Japan): ILAC/APLAC MRA, ASNITE
  Accredited for US EPA ENERGY STAR Program
- **VLAC** (Voluntary EMC Accreditation Center Inc.), JAPAN: ILAC/APLAC MRA
  Accredited for EMC testing and Medical device testing laboratories
- **CB Testing Lab. (CBTL)** under IECEE-CB Scheme:
- **BSMI** (Bureau of Standards, Metrology and Inspection), TAIWAN R.O.C.:
  Approved for Safety and EMC Designated Laboratory
- **TAF** (Taiwan Accreditation Foundation), TAIWAN R.O.C.: ILAC/APLAC MRA
  Accredited for Safety Testing Designated Laboratory
- **CNAS** (China National Accreditation Service for Conformity Assessment)
  Accredited for Safety and EMC Testing Laboratory

JQA

Thank you for your attention.

JQA

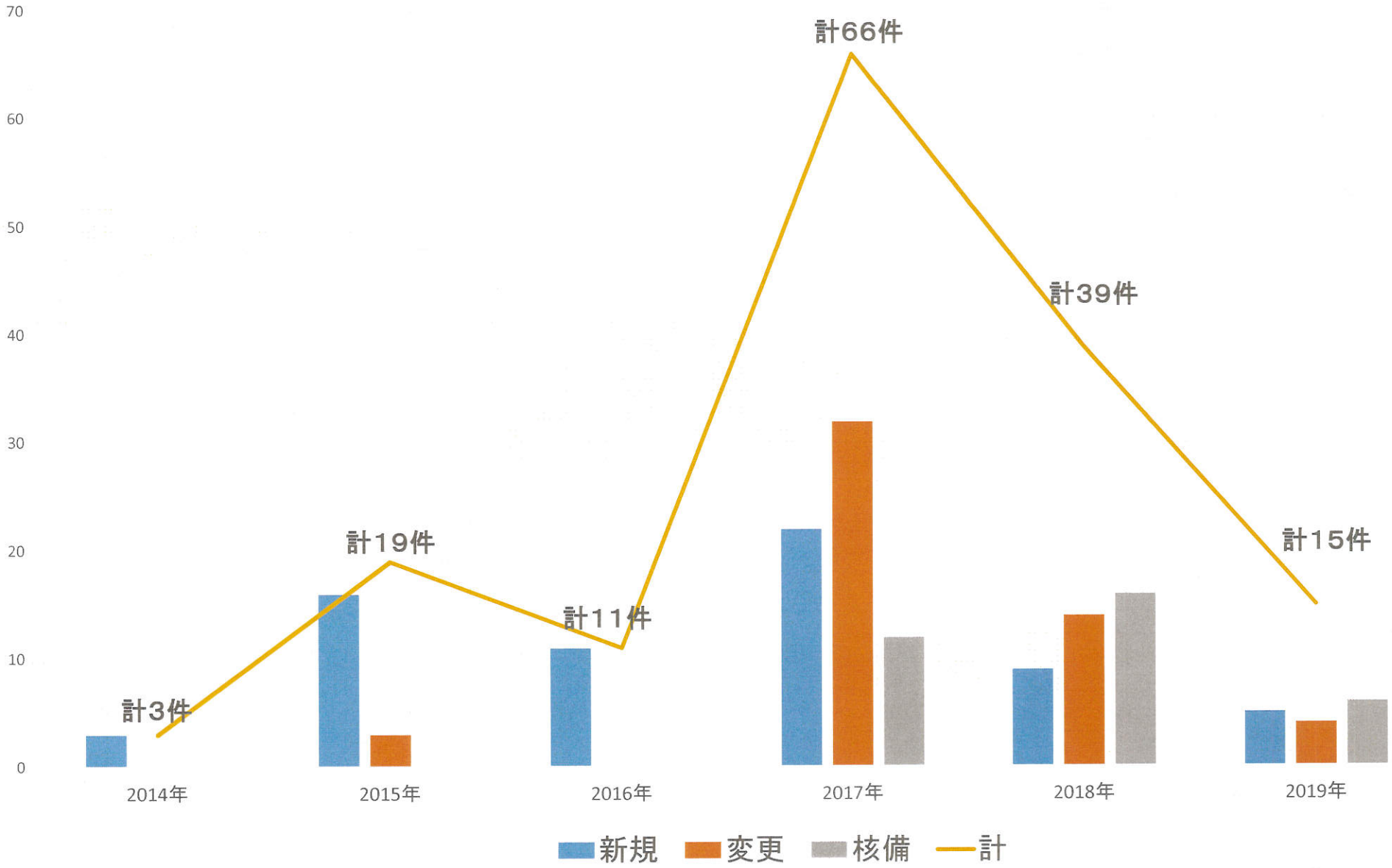
日台MRA実績報告

2019年8月22日

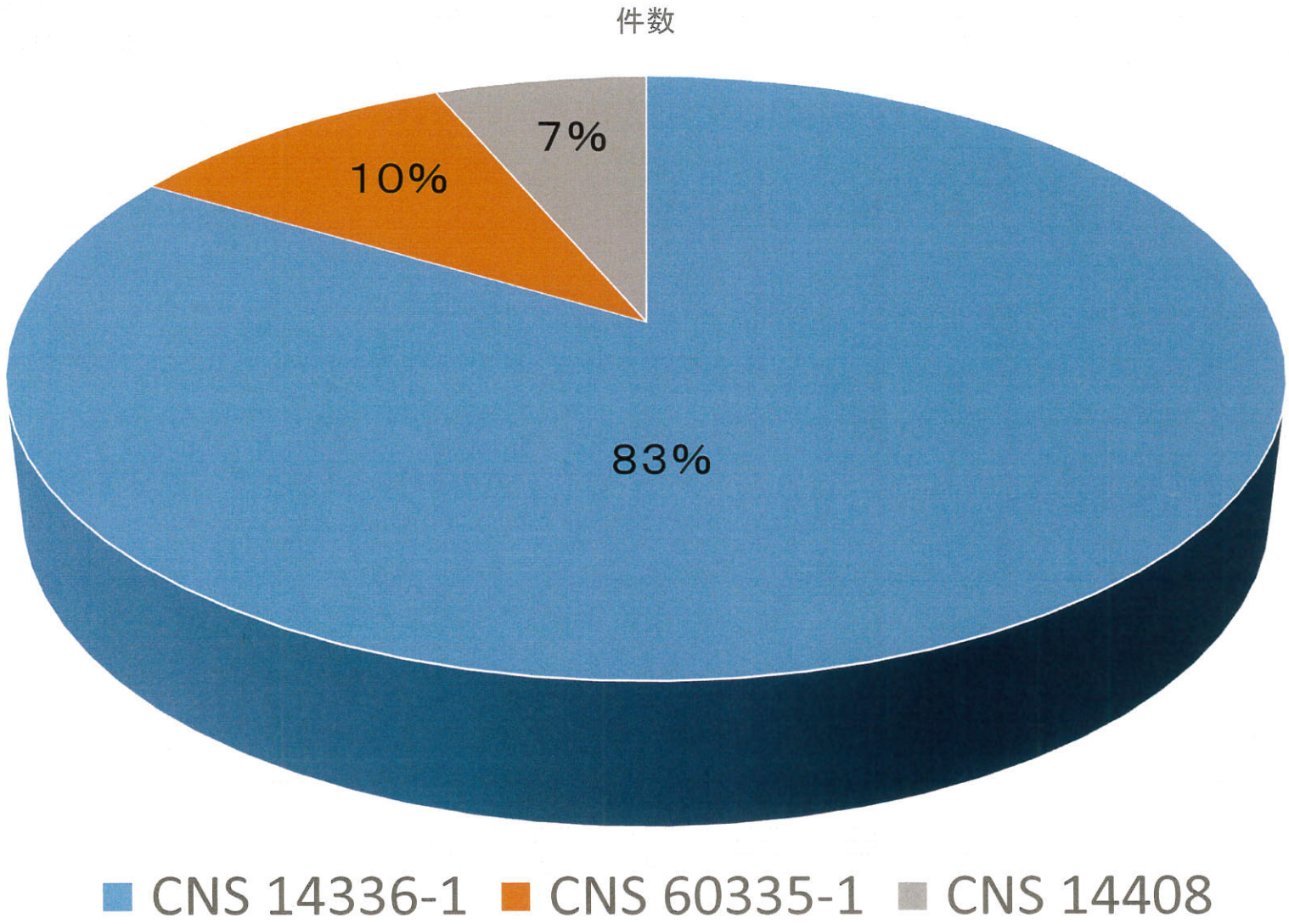
認証部　認証課

JQA 一般財団法人 日本品質保証機構

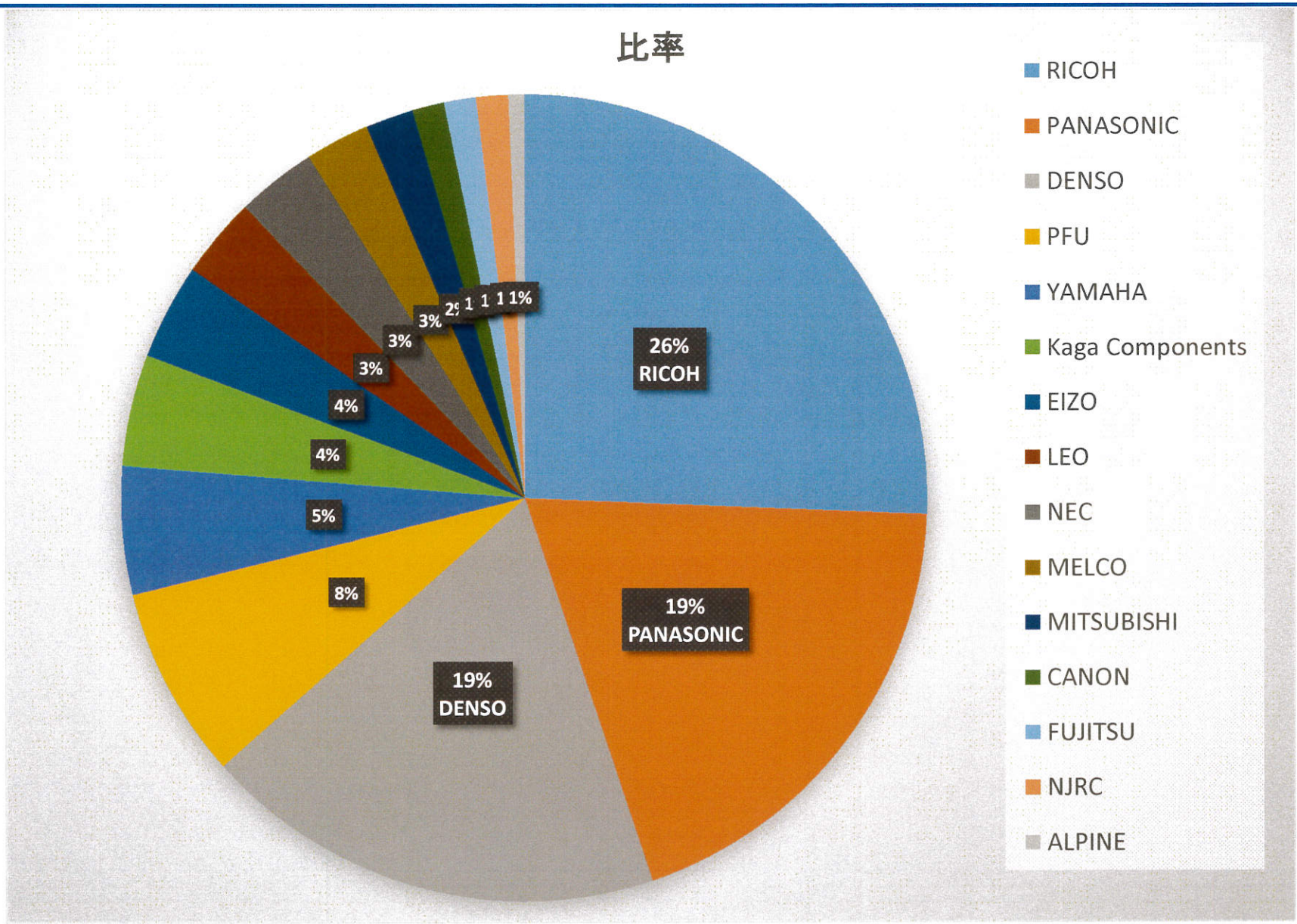
NUMBER OF ISSUE



SAFETY STANDARDS



RPC APPLICANT



Please continue good relationship

BSMI 經濟部標準檢驗局
Bureau of Standards, Metrology and Inspection, M.O.E.A.