2015

Annual Report of BSMI

Bureau of Standards,
Metrology and Inspection

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A Word from the Director General

In 2015, the BSMI continued to implement a wide range of activities to enhance the competitiveness of our industry through consolidated standardization activites and safeguard the rights and interests of consumers with risk-based regulatory measures. Under the concerted efforts devoted by all colleagues, we have accomplished great achievements.

In response to the needs identified by the industry, 342 national standards were developed or updated in 2015, which incorporated up-to-date guidelines for the industry to consult and mostly involved sectors of information technology, green energies, consumer products and technical infrastructure. On the other side, periodic reviews of national standards resulted in the withdrawal of 386 standards, a record-high number in the past decade, which also illustrated our efforts to ensure that the existing standards are still fit for purpose.

From the regulatory aspect, in 2015, the BSMI adopted 7 new technical regulations and revised 11 technical regulations to strengthen the protection of consumers against hazards arising from unsafe products. A number of these regulations are about the labelling of hazardous substances for electrical and electronic products, such as fluorescent lamps, media players, projectors and water dispensers. The requirements will be progressively applied to other electrical and electronic products at a later time to keep consumers informed of the use of hazardous substances in such products.

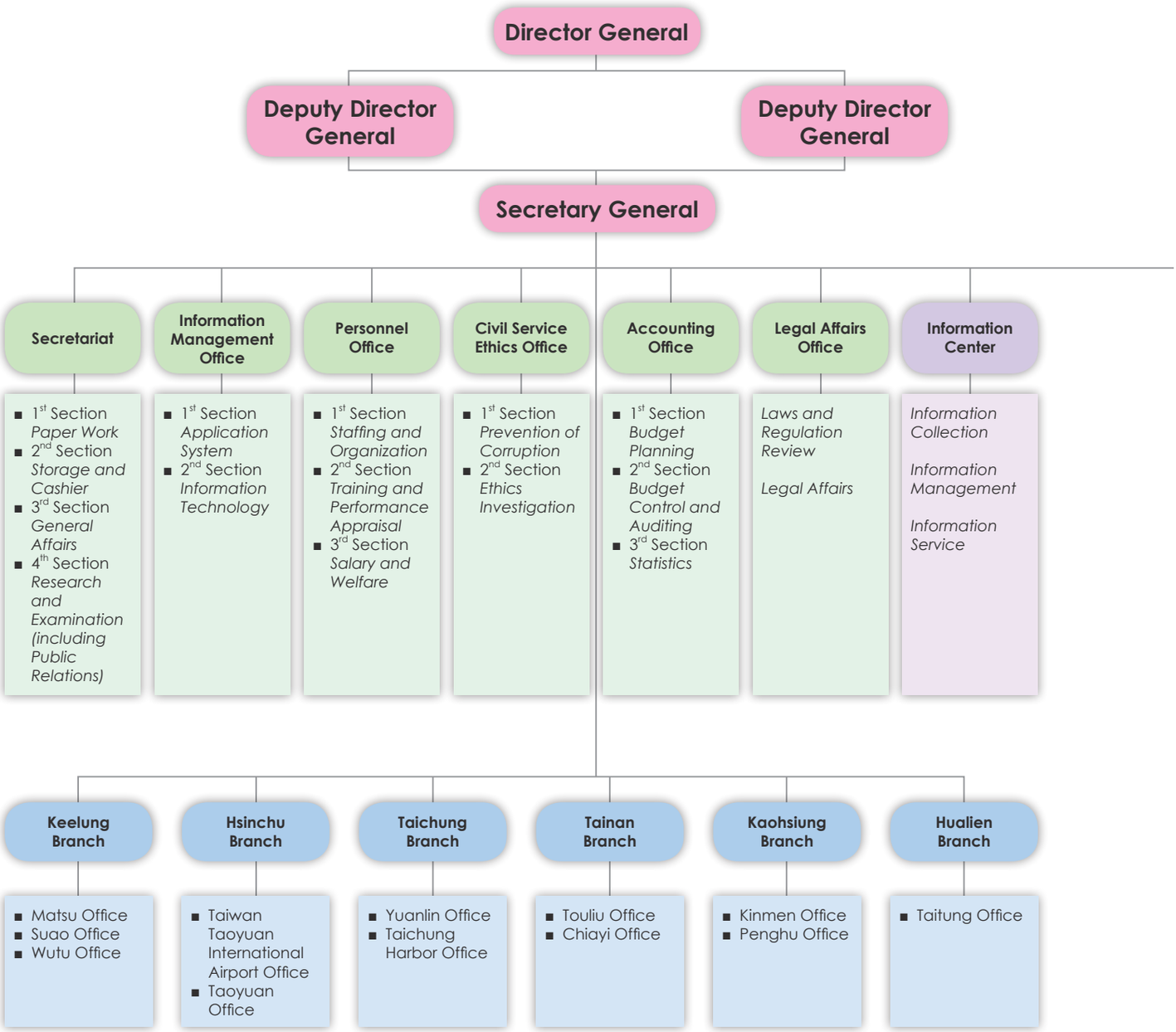
In addition, having recognized the fast ageing rate of population in Taiwan, efforts from different resources were coordinated to protect the health and safety of seniors. We surveyed and published test results of the quality of elderly care products (adult diapers and cotton clothing) so as to draw

the public's attention to the living of elder people. We developed national standards on personal care robots, office equipment accessibility guidelines for elderly persons and effectiveness of brakes for wheelchairs with a view to building an elder-friendly environment. We also required that non-wood walking sticks comply with safety standard after August 1, 2015 to prevent seniors from exposing to risks of falls due to the use of unsafe walking sticks. Other coordinated projects would be further implemented to understand the needs of elder people and take the appropriate approach to addressing their needs.

Internationally, the BSMI not only maintained good cooperative relationship with corresponding government bodies of its trading partners but also explored opportunities for cooperation with countries in Africa and Southeast Asia in the fields of standardization, metrology and conformity assessment. A Memorandum of Understanding was concluded with the Standards Organization of Nigeria in June 2015, which sets up a framework for both sides to cooperate in areas of mutual interest. With Swaziland, we exchanged preliminary views on technical cooperation; with Myanmar, trade dialogues were held to discuss about regular exchanges of personnel and experiences. We believe that regulatory collaboration between government bodies will promote harmonization of systems and facilitate trade on goods.

In the coming years, the BSMI will uphold the policy of "Innovative Lifestyle of Health and Sustainability" administered by the Ministry of Economic Affairs by carrying out its responsibilities as a navigator of quality assurance, a gatekeeper of product safety and a facilitator of industrial competitiveness.

I. Organization



1st Division
- 1st Section: *Standards Act, Administration of CNS Mark, General Affairs*
- 2nd Section: *Standards of Machinery, Mechanical and Electrical Products*
- 3rd Section: *Standards of Chemical Products*
- 4th Section: *Standards of Agricultural Products*

2nd Division
- 1st Section: *Inspection Planning & Management of Resource Products*
- 2nd Section: *Inspection Planning & Management of Livelihood Products*
- 3rd Section: *Inspection Planning & Management of Chemical Products*

3rd Division
- 1st Section: *Inspection Planning & Management of Machinery and Mechanical Products*
- 2nd Section: *Inspection Planning & Management of Electrical Products*
- 3rd Section: *Inspection Planning & Management of Electronic Products*

4th Division
- 1st Section: *Legal Metrology Administration*
- 2nd Section: *Legal Metrology Technology*
- 3rd Section: *Metrology Standards*

5th Division
- 1st Section: *Planning & Consumer Protection*
- 2nd Section: *Inspection Administration & Management*
- 3rd Section: *Management Systems Certification*
- 4th Section: *International Cooperation Affairs*

6th Division
- *Polymer Section*
- *EMC Engineering Section*
- *Biochemistry Section*
- *Technical Development Section*
- *Chemistry Section*
- *Electrical Engineering Section*
- *Materials Testing Section*
- *Mechanical Engineering Section*
- *Control of Operations Section*
- *Registration of Applications and Certificates Section*

7th Division
- 1st Section: *Verification of Weights & Measuring Instruments*
- 2nd Section: *Inspection of Weights & Measuring Instruments*
- 3rd Section: *Calibration of Weights & Measuring Instruments*

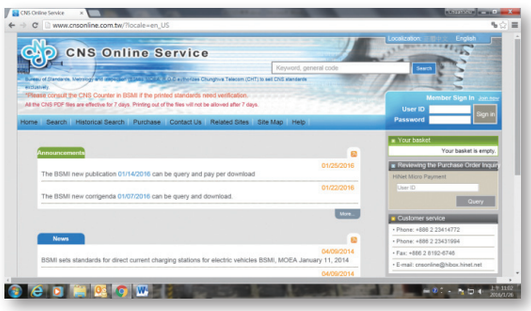
II. Standards

Being the national standardizing body, the BSMI puts great emphasis on establishing a standardization system that can meet the needs of national policies, social development and industrial advancements. The system is mainly driven by two forces, the one led by the government to support the implementation of national economic plans and enhance the overall quality of the standard-living environment, and the other led by the industry to invent state-of-the-art technologies. Aside from the technology-based approach to developing documentary standards, the BSMI also recognizes the importance of raising the society's awareness of standardization.

1. Government-led Actions

(1) Development of national standards (CNS)

This year, the BSMI published 183 new standards, revised 159 standards, and withdrew 386 standards, which resulted in a total of 14,572 CNS in existence by the end of 2015. New standards mainly involve sectors of chemicals and electrical engineering. The number of standards withdrawn in 2015 reached a record high in the past decade as a result of a comprehensive review of the appropriateness of standards to accommodate the needs of national policy and industrial development. (Please refer to Table II-1 for the number of CNS standards in different sectors.) CNS standards can be accessed at the web address http://www.cnsonline.com.tw/?locale=en_US.



▲ The CNS On-line Service Website

(2) Alignment of CNS with international standards

The difficulties that Taiwan encounters in becoming a member of important international standardizing organizations, such as ISO, IEC and ITU, due to political constraints, does not impair our efforts to align our national standards with international ones. In 2015, 22 drafts of CNS were completed based on relevant international standards, which encompass areas of smart grid, smart automation, Chinese encoding, information processing, bicycles, etc. In addition, 4 research papers on the relationship between industry technology and international standards for related product sectors were presented to help the industry better understand potential development in the future.

(3) Participation in international standardization activities

In order to understand the development of regional and international standards in sectors relating to emerging technologies, the BSMI dispatched 16 technical experts to participate in activities held by ISO, IEC and related standards development organizations in areas of encoding of symbols and ideological characters, electromagnetic compatibility, electronic packaging technology, scaffold products, machine tools, long-term caring system, investigation of incidents involving electrical products, etc.

2. Industry-based Initiatives

(1) Enhancement of industry participation in standardization activities

The "Directions Governing the Recognition of Standardizing Groups" were published in 2011 to encourage the industry to participate in the development of national standards and to develop human resources for the industry. Recognized standardizing groups are obliged to recommend drafts, submit comments, and attend technical committee meetings. There are 8 standardizing groups being recognized in 2015. 31 drafts were proposed by these standardizing groups, including assembly dimensions for cycles, automatic identification and data capture, etc.

(2) Support of industry participation in international standardization activities

To respond to the call for structural change of Taiwan's industry, emphases have been placed on developing industry standards that can be followed internationally. The "Directions Governing Subsidies to Groups for Promoting Standardization Activities" were published in 2008 and recently amended in 2013. Subsidies are given to encourage development of industry standards, submission of proposal for CNS drafts, participation in activities held by international/regional standards setting organizations and training of standards experts. In 2015, financial support was given to companies and associations for sending experts (23 person-times) to attend meetings of CIE, ISO, IEC in areas of lighting, wireless charging, 3D printing, RFID, video encoding, etc.

3. Awareness of Standardization

(1) CNS Mark

The CNS Mark Certification System has been implemented since 1951 to promote the use of national standards and to be applied on products to demonstrate that the quality of the product and the quality management system of manufacturing factories comply with national standards. The CNS Mark products may enjoy exemption from related testing under government procurement projects.

▲ Graphic of the CNS Mark

In 2015, 5 additional items were added to the product scope of CNS Mark, including automatic washing machines, tumbler dryers, carbon steel and molybdenum alloy steel plates for boilers and pressure vessels, full-body harnesses and lead-free, chromium-free anticorrosive paints, while 53 items were withdrawn from the scope. By the end of 2015, there were a total of 2,091 products being granted to use CNS Mark. (Please refer to Table II-2 for categories of certified CNS Mark products and factories.)

(2) National Standardization Campaign & World Standards Day

The National Standardization Campaign was first launched in 2000 to commend organizations or individuals that attain great achievements in promoting standardization activities. There are 4 award categories, including Corporate Standardization Award, Organization Standardization Award, Standardization Visionary Award and Standardization Achievement Award. The Organization Standardization Award was granted to Cycling & Health Tech Industrial R&D Center in 2015 for their contributions and enthusiasm in standards development in areas of bicycling industry. The 2015 World Standards Day "Standards - the World's Common Language" was also held back to back with the Award Ceremony of National Standardization Campaign to introduce concepts about standardization and related achievements to the public.

▲ Group photo of Director General Liou, BSMI, with the award winners at the 2015 National Standardization Award & World Standards Day

4. Work Plan for 2016

National standards for senior care products, safety of electrical products, consumer products and cycling products are identified as the priority areas for standardization activities in 2016. For senior care products, emphasis is placed on stair lifts, pressure relief mattresses and senior-friendly design of home appliances. For consumer products, in response to concerns raised by consumers for a healthy and safe living environment, work will be targeted to low-lead paints, dust masks against PM2.5, liquefied petroleum gas, rubber hoses – wire-reinforced types for gas, functional textiles, shopping carts, products used for public construction, etc.

Table II-1

Number of National Standards in 2015 (by Categories)

Categories	Established	Amended	Rescinded	Existing
Civil Engineering and Architecture	14	8	52	654
Mechanical Engineering	18	2	106	2,152
Electrical Engineering	38	21	33	1,239
Electronic Engineering	7	3	30	839
Motor Vehicles and Aerospace Engineering	14	1	18	514
Track Engineering	-	1	-	89
Naval Architecture Engineering	-	-	-	406
Iron Metal Smelting	3	1	-	394
Non-Iron Metal Smelting	-	5	-	262
Nuclear Engineering	-	-	-	48
Chemicals	44	17	119	2,897
Textiles	1	6	3	379
Mining	-	-	-	284
Agriculture	6	5	3	479
Food Products	3	47	3	546
Wood	-	5	-	83
Paper	-	-	-	195
Environmental Protection	-	-	-	47
Pottery	1	3	3	390
Consuming Products	8	3	3	385
Hygiene and Medical Appliances	2	2	-	437
Information and Communication	7	3	2	842
Industrial Safety	10	17	6	235
Quality Control	1	-	-	85
Logistics and Packaging	1	-	-	172
General and Other Areas	5	9	5	519
Total	183	159	386	14,572

Table II-2

Number of CNS Mark Products & Factories in 2015 (by Categories)

Categories	Products	Factories
Civil Engineering and Architecture	479	188
Mechanical Engineering	158	69
Electrical Engineering and Electronic Engineering	359	149
Motor Vehicles and Aerospace Engineering	14	9
Track Engineering	-	-
Naval Architecture Engineering	-	-
Iron Metal Smelting	179	68
Non-Iron Metal Smelting	5	4
Chemicals	418	102
Textiles	5	2
Mining	-	-
Agriculture and Food Products	5	4
Wood	3	2
Paper	59	24
Pottery	286	88
Consuming Products	52	30
Hygiene and Medical Appliances	9	8
Industrial Safety, Packaging, General and Other Areas	60	28
Total	2,091	685

III. Metrology

The BSMI is responsible for developing the national metrology system in Taiwan. The activities mainly involve two fields, regulated area (legal metrology) and non-regulated area (scientific metrology). For legal metrology, weights and measuring instruments that directly affect people's livelihood, such as those used in trading transactions, certification, law enforcement, environmental protection, public safety and medical health, are regulated in legislations to ensure fair trade and to secure a living environment that is stable and expectable. For scientific metrology, efforts have been devoted in supporting the metrological needs of science to pursue metrological traceability and those of the industry to produce new products or innovative processing methods using advanced technology. In 2015, the BSMI upgraded 7 measuring systems for this purpose. Besides, the National Measurement Laboratory (NML) participated in the Consultative Committee for Photometry and Radiometry of the International Committee of Weights and Measures as an official observer in 2015, which enables the NML to gain up-to-date information on the development of measurement technology in the specific field and make our contributions.

1. Legal Metrology

The legal metrology system basically remained unchanged in 2015. However, there were changes to the technical specifications of weights and measuring instruments, including 5 revisions and 1 addition, including those for rice grain moisture meters, taximeters, sound level meters, water meters and octave-band filters (please refer to Table III-1 for the effective dates of the specifications).

Management of weights and measuring instruments subject to regulatory control can be summarized in 3 aspects: industry of weights and measuring instruments, verification and inspection of instruments, and type-approval of instruments.

(1) Industry of weights and measuring instruments

The BSMI requires that a license be obtained in order for any person to be engaged in activities of manufacturing, repairing or importing measuring instruments. By the end of 2015, there were 1,214 measuring instrument enterprises in Taiwan, among them 274 being engaged in manufacturing, 217 in repairing, and 723 in importing measuring instruments.

(2) Verification and inspection

Measuring instruments used for business transactions, public safety and health care purposes should pass verification before sale or usage, and should be inspected by the BSMI when they are in use. A list of such measuring instruments is provided in Table III-2. Except for a small scope of measuring instruments (electricity meters, radar speedometers, laser speedometers, inductive loop speedometers, sound level meters, breath alcohol testers and analyzers, rice grain moisture meters, vehicle exhaust emissions analyzers and illuminance meters for official inspection) of which the verification and inspection are conducted by qualified organizations assessed by the BSMI, almost all instruments are verified and inspected by this Bureau and its branches. All measuring instruments that pass verification will be inscribed, sprayed, branded, or lead-sealed with the mark  and attached with a conformity sticker or issued a conformity certificate. In 2015, 4,392,699 instruments were verified and inspected, 60% of them being water meters and watt hour meters. The rate of non-compliance is 0.17%.

With a view to upgrading private sector's techniques and downsizing public sector's budget and workload, measuring instrument enterprises that have quality management systems certified against ISO 9001 and testing laboratories accredited against ISO/IEC 17025 may apply for self-verification. There were 11 enterprises qualified to use self-verification procedures for their measuring instruments and 1,618,678 instruments were self-verified in 2015, which accounted for 36.8% of the total instruments verified.

A project on monitoring scales used in malls, traditional markets, supermarkets, scenery parks, etc. is conducted annually to ensure fair

trade. Samples were taken around the island during three important home-gathering holidays, the Chinese New Year in January, the Dragon Boat Festival in May and the Moon Festival in August. A total of 28,779 instruments were inspected in 2015 and the compliance rate was 99.7%.

(3) Type approval of measuring instruments

Legal measuring instruments that tend to drift after a period of time of service are required to be type approved prior to manufacture or import to ensure the stability of the measuring instruments and protect the rights of both transacting parties. Taximeters, water meters, electronic weighing instruments and diaphragm gas meters are subject to type approval (please refer to Table III-3 for detailed scope).

2. Scientific Metrology

(1) Measuring systems

The following measuring systems were expanded in 2015 to enhance the capability of the technical infrastructure in Taiwan.

Name of Systems	Applications
Single-Phase AC Electric Power System (expanded) Single-Phase AC Electric Energy System (expanded)	Provision of metrological traceability to calibrate sine wave electric energy system to maintain the fairness of electricity meters that use new types of measuring equipment involving green energy.
Gas Concentration Dilution Device and Analysis Equipment Calibration System (expanded)	Provision of metrological traceability to calibrate devices and analysis instruments used for monitoring air quality of living environment and NO and SO_2 concentration of work environment.
Gravimetric High-Pressure Cylinder Gas Mixture Supply and Certification System (expanded)	Provision of primary standard for gas to meet the needs of laboratories and gas manufacturers for metrological traceability so as to establish a certification system for the supply of standard gas that is in line with international standards.
Calibration system of Co-60 absorbed dose to water-graphite calorimetry (expanded)	Provision of traceability for doses used in oncotherapy via high energy linear accelerators used in radiotherapy.

Name of Systems	Applications
Ir-192 primary standard system (improved) Primary standard for the activity of radiation source Cd-109 (improved)	Provision of calibration service for radionuclide testing and analyzing laboratories to ensure accuracy of results.

(2) National Measurement Laboratory

The National Measurement Laboratory (NML) maintains 134 measurement systems in 17 fields, among which 368 have been incorporated in the key comparison database (KCDB) of the Bureau International des Poids et Mesures (BIPM), which ensures the international equivalence of our national measurement standards. In 2015, the NML participated in 16 key comparisons.

(3) Metrological technical personnel

The BSMI conducts examinations for metrological technical personnel to enhance the quality and technical level of metrological activities. In 2015, examinations were delivered during the period from May to October and 314 people participated. Since 2010, there has been a total of 1,966 qualified metrological technical personnel, showing the increased support from the industry.

(4) Promotion of NML services

In 2015, 10 seminars were held to share knowledge and information attained from research projects, and to introduce related services provided by the NML in support of industrial development. The topics encompassed areas of application of testing to new generation machine tools, measurement for precision machinery, nano-technology, measurement inter-comparison of low-level radioactive wastes, etc.

3. Awareness Programs

(1) Digital collection of cultural relics of standards, inspection and metrology

The BSMI collaborated with the National Science and Technology Museum to complete the project "Roadmap for fairness and safety: the digital collection website of cultural relics of standards, inspection and metrology." In 2015, progress was made to digitalize 60 artifacts and more than 1,000 horizontal artifacts. Interviews with 10 senior citizens were completed to enrich the collection of oral history. It is hoped that, through systematic collections and presentations, the general public would be attracted to learn more about this specialized area and eventually to appreciate what standards, inspection and metrology contribute to our everyday lives.

▲ Digital Collection Website
(http://asmi.nstm.gov.tw/home.aspx)

(2) World Metrology Day and World Accreditation Day

In support of the theme of 2015 World Metrology Day "Measurements and Light," the BSMI collaborated with the National Museum of Marine Science and Technology to deliver a series of activities on May 16-31. The activities focused on the important role of light in marine environment and provided hands-on measurement experience for the participants. In addition, a "Symposium on the Trend of International Development on Measurement" was held on May 18 to highlight the achievements that we have made in integrating light, electricity and mechanical technologies industries, the success of which relied much on the accuracy and reliability of measurement systems.

▲ Group photo of Deputy Minister Cho, MOEA, and Director General Liou, BSMI, with speakers at the 2015 World Metrology Day

The BSMI held a workshop on June 6 to celebrate the 2015 World Accreditation Day ("Accreditation: Supporting the Delivery of Health and Social Care") to discuss the benefits of using accreditation to enhance the quality of healthcare system and to reduce medical malpractice disputes. The event successfully engaged more than 300 participants coming from the regulators, healthcare providers, medical industry and consumers.

▲ Group photo of Director General Liou, BSMI, with speakers at the 2015 World Accreditation Day

Table III-1

Effective Dates of Amendments to Technical Specifications in 2015

Title of Specifications	Effective Dates
Technical specification for type approval of taximeters	May 20, 2015
Technical specification for the verification and inspection of taximeters	September 8, 2015
Technical specification for the verification and inspection of rice grain moisture meters	January 1, 2016
Technical specification for the verification and inspection of water meters	July 1, 2016
Technical specification for the verification and inspection of sound level meters	January 1, 2017
Technical specification for the verification and inspection of octave-band filters	January 1, 2017

Table III-2

Categories and Scopes of Weights & Measuring Instruments Subject to Verification and Inspection

	Categories	Scopes
1	Taximeters	
2	Weighing instruments	Non-automatic weighing instruments, automatic gravimetric filling weighing instruments and discontinuous totalizing automatic weighing instruments, excluding (1) The weighing instruments of non-pricing and not for transaction use with a number of verification scale interval all more than 10,000. (2) The weighing instruments with a number of verification scale interval less than 3000 and maximum weighing capacity less than 3 kg marked not for transaction use on the body of measuring instruments. (3) Portable suspended weighing instruments with a maximum weighing capacity less than 50 kg and marked not for transaction use on the body of measuring instruments. (4) Suspended weighing instruments with a maximum weighing capacity of more than 1 t. (5) Bathroom scales. (6) Weighing in motion non-automatic weighing instruments.
3	Non-Invasive mechanical sphygmomanometers	
4	Volumeters	(1) Liquid volumetric meters: metal measuring pails and measuring tanks marked with divisions; excluding the following measuring tanks: (i) Measuring tanks with a capacity of more than 110 m^3; and (ii) Pressure measuring tanks. (2) Diaphragm gas meters, excluding gas meters with a maximum air flow of more than 100 m3/hr. (3) Water meters: volumetric water meters, velocity water meters (Woltmann meters, single-jet meters and multi-jet meters) combination water meters and vortex water meters, excluding water meters with a caliber of more than 300 mm. (4) Oil meters, excluding oil meters with a caliber of more than 160 mm. (5) Liquefied petroleum gas flow meters.

	Categories	Scopes
5	Electricity meters	Watt-hour meters, Var-hour meters, Watt-hour demand meters, Static electricity meters and Instrument transformers, excluding (1) Ancillary electricity meters within the electric products. (2) Ancillary electricity meters within the converters/inverters. (3) Panel meters. (4) Portable electricity meters. (5) Reference electricity meters. (6) Direct current electricity meters. (7) Energy transducer. (8) Standard electricity meters and those with rated voltage higher than 600 V. (9) Current transformer operated electricity meters those with rated secondary current below 5 V. (10) Current transformers those with rated secondary current below 5 A. (11) Instrument transformers of 69 kV higher than the nominal system voltage.
6	Speedometers	(1) Radar speedometers for law enforcement. (2) Laser speedometers for law enforcement. (3) Inductive loop speedometers for law enforcement.
7	Sound level meters for official inspection	
8	Concentration meters	(1) Breathe alcohol testers and analyzers for official inspection. (2) Rice grain moisture meters. (3) Vehicle exhaust emissions analyzers for official inspection excluding those used for motorcycles and diesel engines.
9	Illuminance meters for official inspection	
10	Electrical thermometers	

Table III-3

Categories and Scopes of Weights & Measuring Instruments Subject to Type Approval

	Categories	Scopes
1	Taximeters	
2	Electronic non-automatic weighing instruments, excluding those provided with an automatic packaging function	(1) Price-computing weighing instruments; (2) Non-price-computing weighing instruments: with a maximum capacity of more than 3 kg and not more than 100 kg, and with the number of verification scale intervals (n) all between 1000~10000, excluding portable suspended weighing instruments.
3	Water meters	(1) Vortex water meters with a nominal diameter of not less than 50 mm and not more than 100 mm; (2) Volumetric meters and velocity meters (Woltmann type, single jet type, and multi jet type) with nominal diameter not less than 13 mm and not more than 300 mm.
4	Diaphragm gas meters: with a maximum flow of not more than 16 m^3/h	

IV. Regulatory Inspection and Product Safety Management

Product safety is considered one of the most important missions of the BSMI's jurisdictions. It is achieved mainly through pre-market control measures as well as post-market surveillance actions. Both require a sound risk assessment system to make sure that resources are effectively and efficiently allocated to achieve adequate protection of consumers. While there are different regulatory authorities in Taiwan, the BSMI is responsible for ensuring the safety of most consumer products. Having taken into account the maturity of production technology as well as the diversity of products, the BSMI maintains four kinds of inspection schemes: Batch-by-Batch Inspection (including Type-Approved Batch Inspection), Monitoring Inspection, Registration of Product Certification (RPC) and Declaration of Conformity (DoC). For products that are subject to regulatory inspection, the applicable inspection schemes and inspection standards will be designated. The Commodity Inspection Mark shall be affixed to all products that comply with regulatory inspection requirements.

▲ Graphic of the Commodity Inspection Mark

The safety of regulated products is further assured by taking post-market surveillance actions, which are guided by an annual plan, prepared at the beginning of each year and forwarded to BSMI branches located around the country for implementation. The annual plan identifies products of high risks and specifies principles for conducting surveillance activities, including market checks, sampling tests, special projects and monitoring of products sold over the Internet. In addition, the revision of the Commodity Inspection Act in 2007 imposed obligations on manufacturers or importers to report incidents caused by their products, which provide useful information for the BSMI to analyze the problems and take preventive actions. Results of market surveillance activities and

investigations into product incidents are used as references for making the next year's annual plan.

1. Regulatory Inspection

(1) Regulated products

The number of commodities subject to regulatory inspection was 1,196 by the end of 2015. Most of them are mechanical & electrical/ electronic products, and textiles. (Detailed description of the product items are provided in Table IV-1) In addition, there were about 80 products items (feeding stuffs) of which border checks were performed under the commission of the Council of Agriculture.

452,056 batches of products were inspected in the whole year of 2015, 98.6% of them being imported products, 51% being mechanical & electrical/ electronic products, and 84.1% being processed by BSMI Branch offices in Keelung and Hsinchu, where Keelung Port and Taiwan Taoyuan International Airport are located respectively.

(2) Changes to technical regulations

• Products added to the list of regulated products in 2015

Product Items	Effective Date	Description
Non-wood walking sticks (G/TBT/N/TPKM/152)	2015.08.01	New items (inspection standard: CNS 15192:2013)
Children's raincoats (G/TBT/N/TPKM/182)	2015.09.01	New items (inspection standard: CNS 15503:2011 and CNS 15291: 2009)

• Proposed technical regulations that enter into force in 2016 or at a later date

Product Items	Date of Proposal	Date of Adoption	Effective Date	Description
Suitcases	2015.05.07	To be determined	To be determined	New items (inspection standards: CNS 15331:2013)
Hot cathode fluorescent lamps and AC supplied electronic ballasts (G/TBT/N/TPKM/213)	2015.08.20	To be determined	To be determined	Additional requirement for labelling of hazardous substances
Wireless network media players and external projectors (G/TBT/N/TPKM/215)	2015.09.10	2015.12.29	2017.07.01	New items (inspection standards: CNS 13438:2006, CNS 13439:2004, CNS 15663:2013 Section 5 “Marking of presence,” CNS 14336-1:2010 and CNS 14408:2004)
Water dispensers (G/TBT/N/TPKM/223)	2015.11.26	2016.04.06	2016.04.06	Update of inspection standards plus an additional requirement for labelling of hazardous substances
Plastic boxes and fix plates for low voltage A.C. power meters (G/TBT/N/TPKM/224)	2015.11.27	2016.4.14	2016.4.14	Update of inspection standard

• Products of which the inspection standards were changed

Product Items	Effective Date	Description
Storage water heaters (G/TBT/TPKM/180)	2015.02.05	Inspection standards added (CNS 11010:2013) on energy efficiency
Toys (G/TBT/TPKM/202)	2015.03.31	Update of inspection standard CNS 4797:2015
Motorcycle tyres (G/TBT/N/TPKM/204)	2015.07.09	Update of inspection standard CNS 4879:2014
Protective helmets for pedal cyclists and protective helmets or users of skates, skateboards and roller skates (G/TBT/N/TPKM/200)	2015.10.01	Update of inspection standard CNS 13371:2012
Paints (G/TBT/N/TPKM/108/Add.2)	2015.10.01	Update of inspection standard CNS 4940:2013
Automobile tyres (G/TBT/N/TPKM/209)	2015.10.05	Update of inspection standard CNS 1431:2014
Children's raincoats (G/TBT/N/TPKM/165)	2015.10.28	Addition of inspection standard CNS 15138-1:2012
Power press or shearing (G/TBT/N/TPKM/214)	2015.11.26	Update of inspection standard as revised by the Ministry of Labor
Air conditioning machines (G/TBT/N/TPKM/218)	2015.12.22	Update of inspection standard CNS 3615:2013
Automatic data processing machines, printers, photo-copy machines, televisions, monitors, monitors for automatic data processing systems (G/TBT/N/TPKM/208)	2015.12.29	Inspection standards added (CNS 15663:2013 Section 5 "Marking of presence")
Wired network media players and internal projectors (G/TBT/N/TPKM/215)	2015.12.29	Inspection standards added (CNS 15663:2013 Section 5 "Marking of presence")

2. Product Safety Management

The safety of products placed on the market are monitored through planned projects launched by the BSMI, including market checks and testing of products purchased from the market, as well as actions driven by the manufacturers and consumers. The projects basically targeted products with high risks, with high frequencies of noncompliance and of concerns to the public. The list of such products in 2015 encompassed toys, sunglasses, power banks, Bluetooth speakers, puzzle mats, extension cords, towels, wall plug receptacles, lithium accumulators, dashboard cameras, universal power adaptors, car air purifiers, children's camping tents, etc. Penalties, including fines, recall of products, implementation of corrective actions, prohibition of display/sale and rescission of certificates, were imposed on noncompliant products depending on the situations of violation.

(1) Market checks

In 2015, 54,004 products were market-checked for their compliance with labeling requirements, 39,177 of which were physically checked and the rest checked over the Internet. With the users' growing reliance on the Internet to purchase goods, more efforts were put in to browse through the popular on-line shopping websites in Taiwan to check compliance of the products.

(2) Testing of purchased products

40 projects were implemented in 2015 to test 617 products purchased from the market, with 77% being subject to mandatory inspection. These projects focused on compliance of the products' critical features against national standards. For example, textiles were tested for the content of free formaldehyde and azo dyes, and toys were tested for the content of phthalates and heavy metals to protect consumers' health. For electrical products, tests were conducted on the safety features, such as the leakage of electricity, voltage resistance, insulation resistance, raise of temperature, etc.

Project testing is also used to understand the characteristics of non-regulated products. For example, in 2015, the project on plastic desk pads

revealed potential health risks of consumers from exposure to phthalates in such products as the detected level of 8 regulated phthalates exceeded the level specified in CNS 15527 of 0.1%. In particular, the detected levels of DINP and DEPH ranged from 5% to 20%. This may prompt further actions and analyses in order to determine whether additional control is required.

(3) Reports from volunteers and consumers

The BSMI has been implementing a volunteer program since 1991 to recruit consumers to help uncovering suspect products on the marketplace. These volunteers (1,012 in 2015) are important assets of the BSMI as they serve a bridge between the BSMI and consumers and help disseminate product safety knowledge. In 2015, volunteers reported 2,060 cases of regulated products that possibly violated relevant requirements, and 757 violations were confirmed. Besides, along with the prevalence of e-commerce, consumers are gradually shifting to the behavior of purchasing products from on-line shopping sites. In 2015, we received 2,316 reports from consumers about suspect products, which were mainly computers and their peripheral devices, such as mp3/mp4, digital cameras, mobile power packs, etc., imported for sale on the Internet without being inspected.

(4) Consumer product incident report

In order to obtain information about unsafe products and to take appropriate actions in time, the BSMI revised Paragraph 4 of Article 49 of the Commodity Inspection Act, and adopted "Regulations for Reporting Incidents Caused by Commodities Subject to Inspection" in 2008, which requires persons with reporting duties to notify the BSMI within 3 working days after the date of obtaining information on the incidents involving their products. Besides, the BSMI accepts voluntary incident reports by those without reporting duties. The BSMI maintains a website for consumers and enterprises to report incidents on line and to learn about useful information on product safety, including products to be recalled, product safety alert, defective products announced by other countries, law-violating products, etc.

▲ Product Safety Information Website (http://safety.bsmi.gov.tw/wSite/dp?mp=65)

In 2015, the BSMI received 180 product incident reports, of which 142 were filed and investigated (the other 38 being either repeated cases, forwarded to the authorities concerned for processing, or not involving products). As the reporting obligation only applies to situations where burning, explosion or melting of commodities caused damages to the life, health or properties of consumers, the reported incidents usually involve electrical appliances. In 2015, 76.8% of the reported incidents were burning, and the top reported products were de-humidifiers. For unsafe products, the BSMI required companies to take measures, or to disclose information, and followed up the progress according to the Commodity Inspection Act and Consumer Protection Law in order to protect consumer legal rights and benefits.

Table IV-1

Number and Inspected Batches of Regulated Products by Categories

Categories	Number of Product Items	Number of Inspected Batches
Total	1,196	452,056
Live animals and animal products	-	82
Vegetable products	-	2,308
Animal or vegetable fats and oils and their cleavage products; preserved edible fats; animal or vegetable waxes	-	522
Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes	-	1,618
Mineral products	19	2,026
Products of the chemical or allied industries	47	1,460
Plastics and articles thereof; rubber and articles thereof	29	8,152
Raw hides and skins, leather, fur skins and articles thereof; saddler and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	3	54
Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork	187	7,957
Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard; paper and paperboard and articles thereof	21	1,226
Textiles and textile articles	381	32,421
Footwear, headgear, umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof, prepared feathers and articles made therewith; artificial flowers; articles of human hair	30	3,084
Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware	17	2,870
Base metals and articles of base metal	39	2,743
Machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles	308	230,816
Vehicles, aircraft, vessels and associated transport equipment	7	4,614
Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	16	2,453
Miscellaneous manufactured articles	92	147,650

Note: 1. The cells with shaded gray are batches of product items commissioned by the Council of Agriculture.
2. The inspected batches of “products of the chemical or allied industries” include product items commissioned by the Council of Agriculture.

V. Testing and Certification

The BSMI not only maintains testing laboratories in regulated sectors, but also undertakes researches on testing methods in areas of emerging technologies. Currently, the testing laboratories of BSMI are located at the headquarters and the 6 Branches around the country, which are capable of performing tests of physical, chemical, electrical and electromagnetic compatibility properties of products. Such capabilities are important to assist in feasibility studies required for developing national standards and regulating product safety.

The BSMI further employs its expertise in testing to support the government policy on developing green products, such as smart grid, wind turbines and electric vehicles. In addition, the voluntary certification programs that BSMI provided to facilitate export of fishery products and to enhance product quality are well received by the industry.

1. Enhancement of testing competence

To keep pace with the advancement of technologies, which brings forward products with new features, the BSMI participates actively in national programs on science and technology development to contribute its expertise in testing and certification. There were 4 national programs that the BSMI participated in 2015 and the descriptions of relevant projects are listed below:

National Programs on Science and Technology Development	Description of Projects
Smart Grid	● Standards and inspection at user's endpoint ● Communication protocols ● EMC of chips, packaging, circuit board, chip-to-system, and software ● MCU

National Programs on Science and Technology Development	Description of Projects
Off-shore Turbine	• Standards and certification • Quality of electricity • Communication protocols
Energy	• LED • Freezers/air-conditioners and new coolants • Small and medium-sized wind turbines • Fuel cells • Photovoltaics • Biofuels • Promotion of international cooperation on standards and certification for small wind turbines
Assistive Devices	• Capacity building for testing of electric assisted devices (blood glucose meters, sphygmomanometers, thermometers) • Evaluation of safety of electric wheelchairs • Evaluation of safety of hoists for the transfer of disabled person • Evaluation of safety of bath chairs

To implement these projects, the BSMI collaborated with non-profit organizations to maximize the involvement and reached out to the industry to disseminate the knowledge. Related activities included participation in international conferences (2015 Asia-Pacific Power and Energy Engineering Conference, 2015 Asia-Pacific International EMC Symposium, etc.), presentation of 15 papers, delivery of 16 training courses and provision of technical consultancy.

In particular, the BSMI organized design competitions this year for energy technology products as well as assistive devices for the disabled and seniors. Such competitions successfully solicited excellent ideas for the design of products that would be friendly to the environment or the disabled/elderly population. They also helped encourage actions towards further application of emerging energy

▲ Testing Information Service Website
(http://www.bsmi.gov.tw/wSite/mp?mp=1)

at the design stage of products as well as promote the development of design guidelines and safety specifications for assistive products.

Aside from devoting efforts in support of the national science & technology programs, the BSMI maintains a website that integrated domestic testing resources for the use by the industry to locate the available testing services meeting their needs. The website also contains updated information on testing and inspection and on-line consulting service.

2. Voluntary Certification Systems

The BSMI developed certification systems for industrial products, fishery products and a variety of management systems to help our manufacturers achieve a higher level of quality and to facilitate their access to international markets.

(1) Voluntary Product Certification (VPC) System

The VPC System was launched by the BSMI in 2004, which differs from the other voluntary product certification system, the CNS Mark System, operated by the BSMI in the product standards used for testing. The VPC System intends to upgrade the levels of design, development and production of products based on more stringent requirements. In 2015, the VPC System contained 35 product items, most of them being electrical and electronic products (e.g. fluorescent lamps and starterholders, AC motor capacitors, switches, battery chargers, medium and small wind turbine, stationary training equipment, etc.). There were more than 100 certified products by the end of 2015. VPC certified products can demonstrate to the market their enhanced performance and reliable quality assurance.

▲ Graphic of the VPC Mark

(2) Certification for fishery products exported to foreign countries

With a view to assisting the export of our fishery products to foreign countries, the BSMI implemented a new system on contracted inspection

for exporting fishery products in August 2014. The new system strengthens traceability of raw materials and expedites the processing of applications for health certificates by taking a risk-based approach. In order to issue health certificates, some countries require that the processing establishments and fishing vessels be registered with the competent authority. The BSMI serves as the contact point for administrative arrangements relevant to such registration. The number of processing establishments and fishing vessels published on the official websites of foreign countries are described below.

	Processing Establishments	Fishing Vessels
European Union	33	142
Russia	22	60
Viet Nam	49	-
Brazil	35	-

(3) Management systems certification based on international standards

The BSMI follows closely the development of international standards on management systems and implements certification programs to help our industry adopt management systems in line with international practices. In 2015, there were 7 certification programs and the number of registered organizations is illustrated in the following table.

Certification Programs	Registered Organizations
ISO 9001 Quality Management System	854
ISO 14001 Environmental Management System	196
Occupational Health and Safety Assessment Series 18001 (OHSAS 18001)	144
Taiwan Occupational Safety and Health Management System (TOSHMS)	130
ISO 22000 Food Safety Management System	31
ISO 27001 Information Security Management System	16
ISO 50001 Energy Management System	7
Hazard Analysis and Critical Control Points (HACCP)	78

VI. International Cooperation

The BSMI puts great emphases on developing cooperative relationship with regulators in foreign countries and participating in international activities in the fields of standardization, legal metrology and conformity assessment. One of the purposes is to build up connections with our counterpart organizations for further exchanges of views and technology and present to the world the experiences acquired in Taiwan.

The BSMI is the WTO/TBT Enquiry Point of Taiwan. It answers inquiries about standards, technical regulations or conformity assessment procedures adopted by regulatory authorities, coordinates views on issues discussed at the WTO/TBT Committee meetings, and assists in bilateral consultations involving TBT issues. In 2015, the TBT Enquiry Point submitted 48 TBT notifications to the WTO, translated 878 TBT notifications submitted by important trading partners, and responded to 57 inquiries.

Bilaterally, the BSMI was engaged in more in-depth discussions with its cooperative partners. The issues under discussion mainly addressed matters concerning the implementation of agreements or arrangements with foreign countries, in particular the TBT Chapters of the "Economic Cooperation Agreement" with New Zealand (ANZTEC) and the "Economic Partnership Agreement" with Singapore (ASTEP), which came into effect on December 1, 2013 and April 19, 2014 respectively. For countries with which Taiwan does not have an Economic Cooperation Agreement, such as the EU and the USA, discussions on bilateral TBT issues were also undertaken through regulatory dialogues, which facilitated the alignment of regulatory practices and exchange of experiences between experts on topics of mutual interest.

Other than the cooperation centered on TBT concept, the BSMI also concluded formal agreements with government bodies or private organizations of foreign countries on activities under its jurisdictions. The cooperation with Mainland

China and Saudi Arabia as well as the Mutual Recognition Arrangements with other countries proceeded well in 2015.

1. TBT Chapters of ANZTEC and ASTEP

The TBT Chapters of ANZTEC and ASTEP integrate two cooperation arrangements that Taiwan signed with New Zealand and Singapore respectively before the conclusion of the two Agreements. The cooperative arrangements mainly deals with mutual recognition of conformity assessment results (test reports and/or certificates) for electrical, electronic and information technology products and regulatory cooperation. Under the framework, we explored opportunities for cooperation on additional issues, in particular standardization-related issues. The "Accreditation Cooperation Arrangement," concluded in 2014, strengthens collaboration between accreditation bodies of Taiwan and New Zealand on mutual acceptance of accreditation results.

2. Cross-Strait Cooperation

The "Cross-Strait Agreement on Cooperation in Respect of Standards, Metrology, Inspection and Accreditation" was signed on December 22, 2009 and came into effect on March 21, 2010. Five working groups were set up to exchange views and promote cooperation in areas of standards, measurement, inspection, certification & accreditation and consumer product safety. An annual symposium is held in Taiwan and Mainland China in turns and meetings of the working groups are generally held back to back with the symposium.

The 2015 Annual Symposium and related working groups meetings were held in Sichuan, Mainland China on November 20-24. The one-and-a-half day event consisted of the main symposium and afternoon breakout sessions on day 1, and working groups meetings on day 2. The Symposium briefly introduced the achievements of past work and suggested directions for future work. The afternoon breakout sessions discussed a wide range of topics, including standards for electric motorcycles, technical aspects of breath alcohol testers and analyzers, testing concerning emerging green energies, etc. More than 200 people attended the Symposium.

▲ Group photo of Deputy Minister Cho, MOEA, and Director General Liou, BSMI, with speakers at the 2015 Cross-Strait Symposium on November 20

The cooperation between testing laboratories and certification bodies was further strengthened as a result of technological exchanges between experts under the framework in areas of standards and conformity assessment. On November 21, the Center for Measurement Standards, Industrial Technology Research Institute signed a Letter of Intent on the cooperation of certification for photovoltaic products with China Quality Certification Center (CQC). The Electronics Testing Center, Taiwan also signed a Memorandum of Understanding on Strategic Partnership with the CQC. The cooperation would facilitate the export of related products to Mainland China by reducing costs for testing and certification.

3. Taiwan-EU Cooperation

The BSMI, co-sponsored with the Bureau of Foreign Trade and the European Economic and Trade Office (Taiwan), held a Workshop on Electric Vehicles (EV) on April 10. The Workshop covered a wide range of topics concerning EV, including government policies and recent development of EV technical infrastructure.

180 delegates from government agencies, industry associations, laboratories, manufacturers and research institutes attended the Workshop, which enhanced mutual understanding between Taiwan and the EU on regulatory issues, facilitated further cooperation and provided useful information for Taiwan to prepare related EV safety regulations.

4. Taiwan-Saudi Arabia Cooperation

The BSMI and Saudi Standards, Metrology and Quality Organization (SASO) have maintained a two-decade long partnership. The Technical Cooperation Program between the BSMI and the SASO was renewed in 2011 and BSMI appoints short term experts each year to work with SASO staff members on SASO's request. In 2015, training courses on the testing of ductile pipes and textiles were delivered at SASO on December 6-10, which enabled the exchange of experience between experts from both sides.

5. Taiwan-Nigeria Cooperation

The BSMI signed a Memorandum of Understanding (MoU) with the Standards Organization of Nigeria on June 15. The MoU sets up a regulatory cooperation framework between the two government bodies to work on projects in the fields of standardization, metrology and conformity assessment.

6. Taiwan-Swaziland and Taiwan-Myanmar Cooperation

The BSMI received delegates from the Ministry of Commerce and Department of Research & Innovation of Myanmar as well as the Ministry of Commerce, Industry and Trade of Swaziland in June, October and November. At the meetings, the BSMI introduced its activities and arranged tours to its testing laboratories. It was agreed that further cooperation will be explored by way of exchanging information and technical experts to facilitate bilateral trade.

7. Other Mutual Recognition Agreements/Arrangements

In addition to the MRAs that are incorporated into the ANZTEC and ASTEP, Taiwan also signed the following MRAs with other trading partners, which are at the service of the industry to avoid repetitive testing and/or certification for exporting products.

(1) Acceptance of EMC test reports

- United States and Canada: Letter of Exchange on Mutual Recognition for Equipment Subject to EMC Regulations (Note: information technology products).
- Australia: Letter of Exchange on Mutual Recognition for Equipment Subject to EMC Regulations (Note: information technology products, electrical and electronic products).

(2) Viet Nam:

Cooperative Agreement on Mutual Recognition of Conformity Assessment Results (Note: product scope under discussion)

(3) United States:

Letter of Confirmation on Compatible Good Laboratory Practices Programs (Note: acceptance of pesticide and industrial chemical data generated by test facilities inspected to be in compliance with OECD GLP Principles).

(4) Japan:

Arrangement for the Cooperation on Mutual Recognition (Note: acceptance of test reports and/or certificates for electrical, electronic and information technology products)

Table VI-1

List of cooperation partners with whom Agreements/Memoranda of Understanding were signed (arranged in chronological order):

Cooperation	Cooperation Partners
General Cooperation	1. The Polish Centre for Testing and Certification 2. The KERMI Testing and Quality Control Ltd., Hungary 3. The Standards Institution of Israel 4. The Czech Office for Standards, Metrology and Testing 5. Mongolian Agency for Standardization and Metrology 6. The Directorate for Standards and Quality, Viet Nam 7. Consumer Product Safety Commission, United States 8. The Austrian Standards Institute 9. Bureau of Product Standards, the Philippines 10. Cross-Strait Agreement on Cooperation in Respect of Standards, Metrology, Inspection and Accreditation 11. Regulatory Cooperation Arrangement on Standards, Technical Regulations and Conformity Assessment with New Zealand 12. Agreement on Information Relating to Consumer Product Safety with Singapore 13. Slovak Office of Standards, Metrology and Testing, Slovak Republic 14. Agreement on Standardization, Conformity Assessment and Metrology with Israel 15. Standards Organization of Nigeria
Standards	1. SAI Global Limited, Australia 2. ASTM International, United States 3. BSI Standards Limited, UK 4. Beuth Verlag GmbH, Germany (authorized by DIN) 5. The Institute of Electrical and Electronics Engineers, ncorporated, (IEEE), United States 6. International Organization for Standardization 7. AFNOR, France 8. Underwriter Laboratories Inc., United States

Cooperation	Cooperation Partners
Product Testing	1. Japan Electrical Testing Laboratory 2. Consumer Product Safety Association, Japan 3. Japan Quality Assurance Organization Assurance 4. Swiss Electrotechnical Association 5. Swedish Institute for Testing and Certification of Electrical Equipment 6. Hungarian Institute for Testing and Certification of Electrical Equipment 7. Saudi Standards, Metrology and Quality Organization 8. State of California Bureau of Home Furnishings and Thermal Insulation, the United States
Management Systems Certification	1. Underwriter Laboratories Inc., United States 2. French Association for Quality Assurance 3. Quality Management Institute, Canada 4. AIB-VINCOTTE International, Belgium 5. South African Bureau of Standards 6. SIRIM Berhad, Malaysia 7. DQS Deutsche Gesellschaft zur Zertifizierung von Managementsystemen mbH, Germany 8. Swiss Association for Quality and Management Systems 9. Korean Foundation for Quality 10. Management System Certification Institute, Thailand 11. Italian Certification of Suppliers' Quality Systems 12. Austrian Association for the Assessment and Certification of Quality Systems 13. TUV SUD PSB Certification, Singapore

Table VI-2

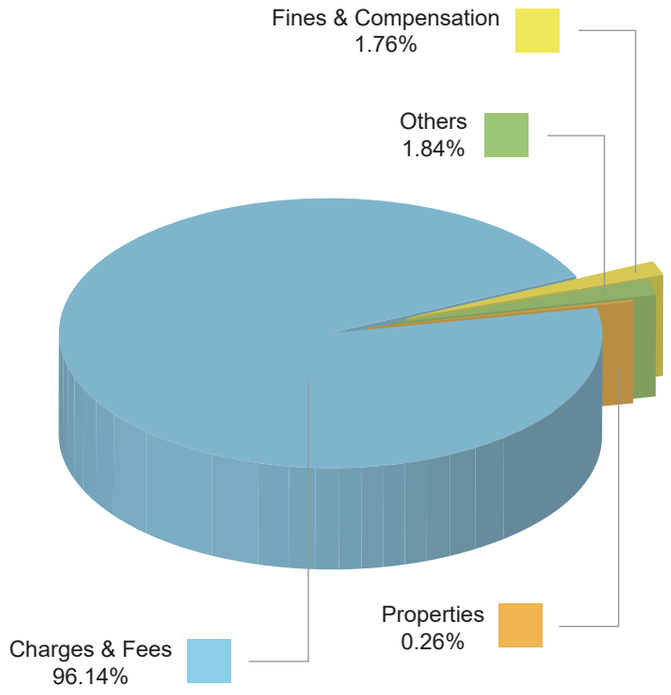
Participation in International Events

Date	Name of Events
January 31-February 2	APEC/SCSC 1 Meeting, the Philippines
February 23-26	ICPHSO 2015 Annual Meeting and ICPSC Meeting, USA
April 20-24	UN/CEFACT Forum, Geneva, Switzerland
June 12-21	Joint APLAC General Assembly/PAC Plenary, Sri Lanka
June 15-17	2015 AFACT Mid-Term Meeting, Iran
June 16-18	WTO/TBT Committee Meeting, Geneva, Switzerland
August 24-26	The 44th Meeting of ISO/IEC JTC1/SC2/WG2/IRG, Peiking, Mainland China
August 25	The 20th APEC EEMRA JRAC Meeting, the Philippines
August 29-30	APEC/SCSC 2 Meeting, the Philippines
September 28-October 2	The 18th Meeting of ISO/TC 229 (Nanotechnologies)
October 19-23	The 26th Meeting of the General Conference on Weights and Measures, France
October 19-23	The 64th Meeting of ISO/IEC JTC1/SC2/WG2, Japan
October 20-21	ICPHSO 2015 International Symposium, Denmark
October 28-30	The 22nd APLMF Forum Meeting, Hawaii, USA
November 3-6	WTO/TBT Committee Meeting, Geneva, Switzerland
November 5	2015 Joint IAF-ILAC Annual Meetings, Italy
November 16-19	The 45th Meeting of ISO/IEC JTC1/SC2/WG2/IRG, Hong Kong, Mainland China
December 13-16	AFACT 33rd Plenary Meeting

VII. 2015 Budget and Manpower

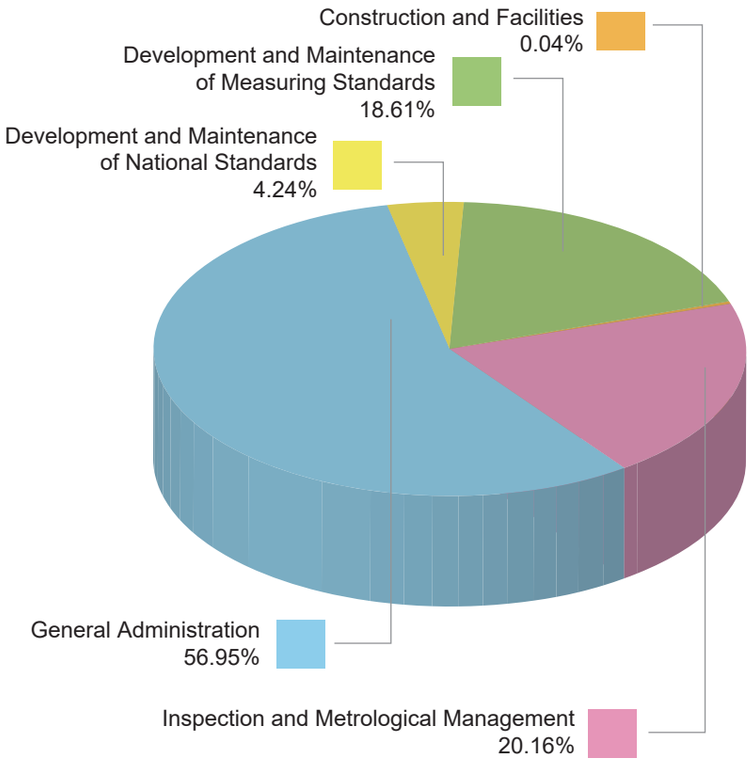
Annual Income Budget

Categories	Amount Units: NTD1,000	Percentage
Fines & Compensation	17,404	1.76%
Charges & Fees	948,350	96.14%
Properties	2,571	0.26%
Others	18,098	1.84%
Total	986,423	100.00%



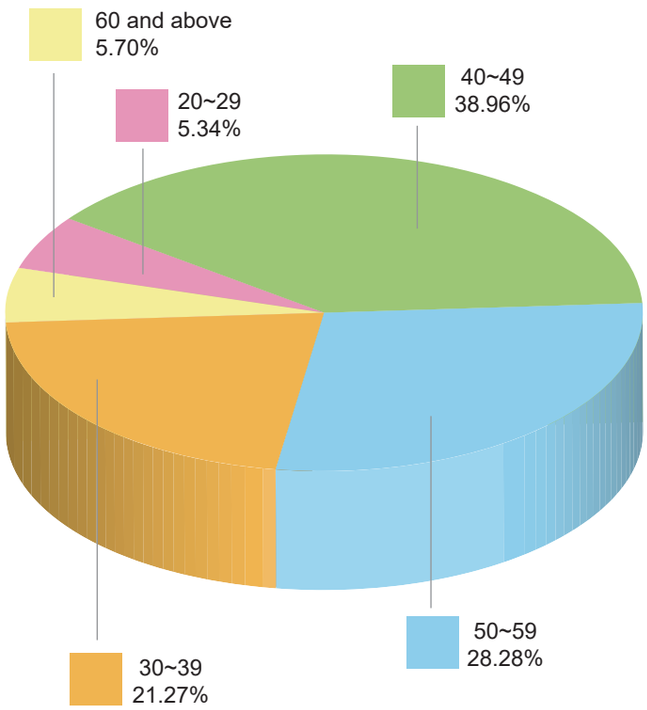
Annual Expenditure Budget

Categories	Amount Units: NTD1,000	Percentage
Development and Maintenance of Measuring Standards	412,756	18.61%
Development and Maintenance of National Standards	94,053	4.24%
General Administration	1,262,908	56.95%
Inspection and Metrological Management	447,133	20.16%
Construction and Facilities	810	0.04%
Total	2,217,660	100.00%



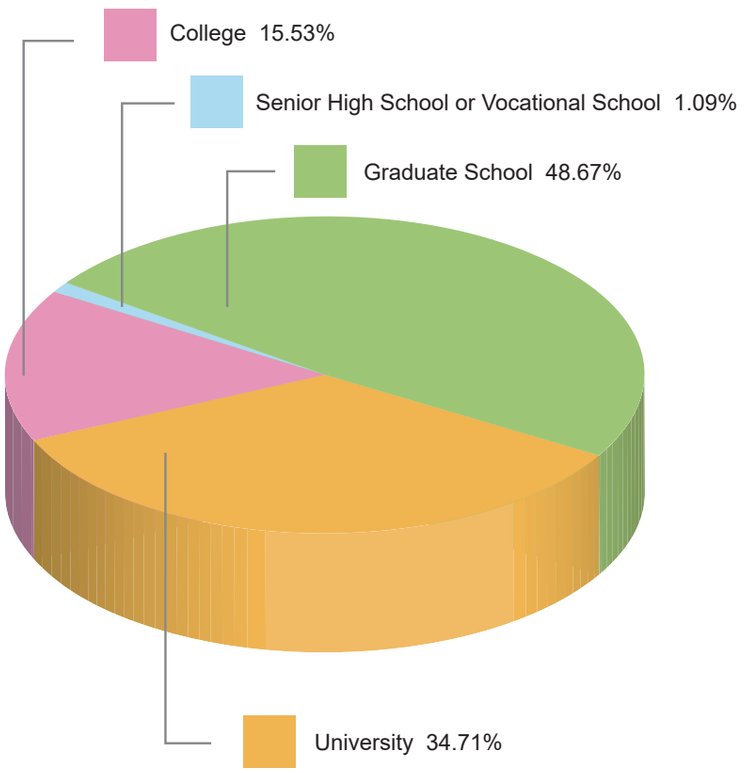
Age Distribution of Personnel

Age	Persons	Percentage
20~29	44	5.34%
30~39	179	21.72%
40~49	321	38.96%
50~59	233	28.28%
60 and above	47	5.70%
Total	824	100.00%



Distribution of Education Background of Personnel

Categories	Persons	Percentage
Graduate School	401	48.67%
University	286	34.71%
College	128	15.53%
Senior High School or Vocational School	9	1.09%
Total	824	100.00%



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