

The Japan Times

# IEC General Meeting in Tokyo

November 4 — November 15, 2014



Opened in April 2014, the Fukushima Renewable Energy Institute, AIST (FREA) aims to promote research and development on renewable energy, which is open to the world and to make a contribution to industrial clusters and reconstruction. AIST



Left: Mitsubishi Electric's Ofuna Smart House in Kamakura, Kanagawa Prefecture is one of Japan's advanced experimental sites on smart grid compatible Home Energy Management System (HEMS) and electric vehicles. Smart-grid-related technologies, such as communication network cables (above far left), Static Var Compensators, storage batteries controlled by advanced systems, are key to create a smarter world, which should be shared through international standardization. MITSUBISHI ELECTRIC CORP.

## Raising Asian involvement

Minoru Matsutani  
STAFF WRITER

Asia has been lagging behind Europe and the U.S. in the standardization of electrical technology, and the trend has been that Western countries have set the standards and Asian ones have followed.

But the appointment of Panasonic Corp. Corporate Advisor Junji Nomura as the International Electrotechnical Commission president in January and Tokyo's hosting of the 78th IEC General Meeting may signal a reversal of this trend.

The last Asians, also both Japanese, to hold the three-year term of the IEC presidency were Seiichi Takayanagi in 2002, and Noboru Takagi in 1977.

"Asia is a big manufacturing market. It is significant to the world that Asia adopts international standards," Nomura said during an interview.

Nomura has already gone to South Korea, Singapore, China, Malaysia, Indonesia, Myanmar and Vietnam since he assumed the post in January, to meet IEC national committee members and industry minister-level governmental officials. Europe and the Americas are typically covered by IEC General Secretary Frans Vreeswijk, a former executive of Philips of the Netherlands.

"It's not that the IEC makes requests to the governments of each country. Discussions with those ministers are about what the IEC can do to provide solutions in each country," Nomura said.

Asked if Nomura being the IEC chairman benefits Japanese companies, he actually thinks bigger: "Asia should be more involved in the early stages of standardization discussions. We will promote such activities, which will be accelerated by an Asian person being the chairman," he said.

Standardization is an important business strategy for technology companies as demand rose for products using technologies certified as global standards after the World Trade Organization enforced the Agreement on Technical Barriers to Trade in 1995 and the Agreement on Government Procurement in 1996.

Nomura's vision as IEC president is basically in line with the IEC Masterplan 2011.

The IEC came up with the plan amid growing sentiment that the world must review energy policy in the wake of the nuclear disaster in Fukushima Prefecture in March 2011, Nomura said. Also, emerging economies such as China, India and Brazil kept expanding and took a huge presence in the market for electronic devices, forcing the IEC to change its course of action to meet demand from such developing countries in creating cities and developing new business fields.

The IEC Masterplan 2011 reflects such a global environment. As president of the



Junji Nomura, president of the International Electrotechnical Commission YOSHIAKI MIURA

IEC, Nomura said he wants to strengthen the collaboration with the industry, as the theme of the IEC Masterplan 2011 is making the IEC "The Home of Industry."

Nomura himself and other IEC officers are proactively in discussions with technology companies to come up with appropriate platforms to satisfy their needs.

"Standardization is not valuable unless global manufacturers use the technology and global end-users use the products," he said.

Also, he said he wants to promote a so-called "systems approach," in which the IEC will focus on standardization of total systems, instead of individual products. The need for such a shift of focus has arisen recently as new business fields involve many different products and industries, requiring collective system solutions, rather than solutions through individual products.

Such new business fields include smart cities, or cities that have infrastructures optimizing use of electricity by reducing energy use and producing renewable energy.

Another of his goals is to speed up the process of standardization to meet the demand from an ever-changing market. To that end, the IEC set up the Market Strategy Board in 2008. The MSB comes up with strategies to maximize input from companies in main markets and prioritize new activities on standardization and conformity assessment, which is to confirm whether products, services and processes satisfy certain standards.

Some Japanese have been members of the MSB and have made contributions in the areas of electricity storage, electricity continuity and recovery in case of accidents.

He would also like to strengthen governance of conformity assessment. The IEC is the only international standardization organization that conducts conformity assessment, and the IEC's Conformity Assessment Board, or CAB, handles the related activities.

Nomura is considering measures to encourage countries and other stakeholders to participate in CAB activities, strengthen monitoring of the needs of conformity assessment in developing countries and do other things to enhance the CAB.

Lastly, he would like to promote activities on new technology, systems and services such as smart cities. It is important to provide conformity assessment on important technology that can improve people's daily lives swiftly and thoroughly, he said.

To achieve this, it is important to not only listen to the industry's opinion but also to collaborate with other standardization organizations, he said. The top management of the IEC, the International Organization for Standardization, or ISO, and the International Telecommunication Union, or ITU, meet once a year to discuss standardization at the World Standards Cooperation. The IEC deals with electricity and energy, the ISO handles service and applications, while the ITU is in charge of communications technology.

Such efforts by the IEC and industry will be more effective with government support. Nomura is grateful to the Japanese government's recent move to assist companies, especially small companies, to raise awareness of standardization.

"It is in the government's interest to encourage small companies to participate in creating and following standards because following electrical safety is in line with international treaties," he said.

The government has enabled the Japanese Standards Association, or JSA, to create working groups and documents for application of standardizations and function as an inquiry center on standardization, which will simplify and speed the process of standard application and acquisition.

Amid the government's push to support Japanese companies, Nomura's presidency at the IEC and Japanese advancement in environmental technology, the 78th IEC General Meeting will be held in Tokyo between Nov. 4 and 15.

It is the first IEC general meeting in Japan in 15 years. With the meeting's concept, "Integration toward a Smarter World," there will be many attractive sideline events such as "Technical Visits," which will invite meeting participants to view Japan's latest technologies.

"While the importance of international standardization increases, the general meeting is very important event for Japan to take further initiative," he said.

## Understanding importance of standardization

Chiho Iuchi  
STAFF WRITER

The increasing globalization of the world economy and the development of frontier technologies are adding further weight to international standardization.

Founded in 1906, the International Electrotechnical Commission (IEC) has published consensus-based international standards and has managed conformity assessment systems, on which millions of devices, which contain electronics and use or produce electricity, rely on to perform, fit and work safely together.

Headquartered in Geneva, the IEC provides a platform for companies, industries and governments to discuss and develop the international standards they require. Its annual general meeting rotates among member countries and is a place for stakeholders to come together to hold discussions on current issues and decide on the future directions and strategies for the IEC.

This year, for the first time in 15 years, Japan is hosting the IEC General Meeting, which coincides with the accession of Japan's Junji Nomura as the IEC President for a three-year term, starting on Jan. 1.

"Also, it is an opportunity to showcase the recovery of the Japan that experienced the disasters on March 11, 2011, to an international audience," said Tamotsu Nomakuchi, president of the Japanese Industrial Standards Committee (JISC), the Japanese National Committee of the IEC.

The general meeting in Tokyo is held under the theme of "Integration toward a Smarter World," an unusual step in



Tamotsu Nomakuchi, president of the Japanese National Committee of the International Electrotechnical Commission YOSHIAKI MIURA

that the meetings are usually not held with a specific target.

Although standardization has traditionally served as the mark of quality and market acceptance for technology-based products, the multiplicity of technologies and their convergence are increasing the propensity that products and systems need to work together to construct large-scale solutions, as seen in smart grids. The IEC Masterplan 2011 emphasizes the increasing requirement of system standards for large-scale solutions or infrastructure, especially in sectors such as the environment, safety and health.

"With the increasing importance of such a system approach, we set the theme to demonstrate Japan's commitment and contribution as one of the leading countries using smart grid technology," Nomakuchi said.

A smart grid is a modernized electrical grid that uses information and communications technology (ICT) to gather and act on information, such as information about the behaviors of suppliers and consumers, to automatically improve the efficiency, reliability, economics and sustainability of the production and distribution of electricity.

In the aftermath of the Great East Japan Earthquake and tsunami that struck on March 11, 2011, and the subsequent nuclear power plant disaster, which resulted in the increased demand for resilience and sustainability, Japan is forging ahead with a variety of operational experiments to establish smart cities in which infrastructure such as energy and transportation are effectively organized by utilizing ICT.

Besides official meetings of the IEC's technical committees related to smart-grid technologies, the Tokyo event provides participants from overseas with opportunities to visit large-scale, advanced experimental sites of companies and local governments during its "Technical Visits" programs.

"With the special events during the meeting, I am confident that the general meeting in Tokyo should be as fulfilling as any other IEC general meetings I have attended since becoming the president of JISC six years ago," Nomakuchi said proudly.

Also, a symposium titled "What's going on in international standardization of Smart Cities/Community?" will



be open to the participants as well as the general public.

"In the progression phase of creating a framework for smart cities, I believe that it should reflect the opinions of ordinary citizens who may live in such new cities, rather than just offering products or systems from the maker side," Nomakuchi said.

"And even though we cannot introduce the achievements of our experiments to China or Southeast Asian countries exactly the same way as we did, they will be able to refer to and apply the internationally standardized framework of the smart cities/communities, which we shall establish through our discussion," Nomakuchi said.

Nomakuchi, who has long worked for Mitsubishi Electric Corp., first recognized the importance of the international standardization while he served as the head of the company's Information Technology R&D Center in Kamakura, Kanagawa Prefecture.

"Staff members in charge of the communications field were working in research and development while being mindful of international standards so their newly-developed protocols and

devices could be put to practical use," Nomakuchi recounted, adding, "Communications systems have no meaning if they cannot be connected."

The main emphasis of the standardization at the IEC, as well as the International Organization for Standardization (ISO), has been recognized as mutual adjustment among established technology.

"Looking from the perspective of research and development, however, the new achievements can be shared rapidly worldwide thanks to the framework of the international standards, thus I recognized the importance of the standardization," Nomakuchi said.

"A decisive event was the enforcement of the Agreement on Technical Barriers to Trade (TBT agreement) administered by the World Trade Organization (WTO) in 1995," Nomakuchi said of the international treaty, which aims to ensure that technical regulations, standards, testing and certification procedures do not create unnecessary obstacles to trade.

"Beyond the tug of wars surrounding de facto standards, as seen in the computer business and home video specs, in which 'the winner takes all,' the TBT agreement has led stakeholders around the world to respect de jure standards, which are established through open discussion at official international organizations," Nomakuchi said.

"Of course, it is up to the strategy of each company how to use the standards. There is always room for companies to pursue their originality and ingenuity, which may be better left not standardized, but there are also achievements that would be better open and widely shared through standardization

for further development of industry," Nomakuchi explained.

Looking back on the origin of the IEC in the early 20th century, where electrical engineers began to see the need for closer collaboration embracing terminology, testing, safety and internationally agreed specifications, the international standards have become increasingly important in the latter part of the 20th century, where new technologies are emerging one after another. Amid such a rapid progress of technology, new standards may take the place of the existing ones.

"Japanese people have had a tendency of following the standards made by others, but I think we need to step ahead to take the initiative in making new standards," Nomakuchi said. "Of course with a spirit of cooperation."

It is also very important to establish a system to certify whether cutting-edge technologies are in accordance with related standards.

"We need to further enhance the conformity certification system in Japan and to show our efforts to developing countries so that they will be able to refer to our expertise. I believe that it should be a major role for Japan as one of the last that joined the advanced nations," Nomakuchi said.

"Serving as a 'passport' to global business for industry, and as a rule to promise a secure and safe society for the general public, international standards serve as a universal infrastructure for a fair and sustainable industrial society," Nomakuchi said. "Our goal at the IEC General Meeting in Tokyo is to present Japan's sincere contribution to constructing such an infrastructure."



## IEC General Meeting in Tokyo

## Government supporting global standardization efforts

Minoru Matsutani  
STAFF WRITER

The government considers the standardization of technology a very important contribution that Japanese companies can make to the world because of their high technologies in many areas, including environmental technology, an industry ministry official said.

"Standardization is significant to makers and users as it can help to spread excellent technology to the world," said Hirofumi Katase, director general of the Industrial Science and Technology Policy and Environment Bureau at the Ministry of Economy, Trade and Industry. "The government's job is to create an environment to help companies with standardization."

Acquiring standardization for technology is a key to spread technology to the world, in which companies can achieve marketing success and make global contributions. Since the enforcement of the Agreement on Technical Barriers to Trade in 1995 and the Agreement on Government Procurement by the World Trade Organization in 1996, demand has been rising for products certified by international standardization organizations such as the International Electrotechnical Commission, or IEC, Katase said.

Standardization in the environment and energy fields has become remarkably important recently, and the IEC has increasingly set up special committees in the area.

Especially in the area of smart cities, which are designed to optimize energy use by minimizing energy consumption and generating electricity, and renewable energy, the global move of standardizing technologies is accelerating. Amid such a situation, Japan has taken on the role of leading special committees on electricity storing systems and systems to deliver electricity with ultra-high voltage alternating current.

On environmental technology, the IEC has set up several Technical Committees and Japan is the leader of some of them. On smart cities in particular, the IEC set up a Systems Committee and Japan will actively contribute to it, he said.

In the area of reducing carbon dioxide emissions, Japan has been leading in the creation of international standards in methods to measure carbon dioxide emissions in the steel-making industry



Hirofumi Katase, director-general of the Industrial Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry  
YOSHIKI MIURA

in the International Organization for Standardization, or ISO.

"Japan would like to be involved in and contribute to the creation of international standards that would lead to new technology and the solution to global issues in the environmental area," he said.

Environmental change is a global problem and governments are likely to procure environmentally friendly equipment and infrastructure to meet the strict demands of the WTO's Agreement on Government Procurement, he said.

Katase also pointed out that raising awareness of international standardization among companies, people and countries is an international interest. Japan is taking initiative in the world to raise such awareness, he said.

In particular, encouraging small companies to participate in standardization is a global concern because development of products and technology involves so many layers of small companies.

Generally speaking, small companies tend to not pursue standardization from domestic or international organizations for standardization such as the Japanese Industrial Standards Committee (JISC), IEC and ISO, as it is time-consuming and carries extra costs. The extra time and costs make it difficult for small companies to pursue standardization.

Also, there may be cases in which a small company with unique, distinct

technology has difficulty achieving industrywide consensus. It would be even harder if the technology is used in multiple industries.

To solve the situation, Japan in July established a system in which the process of standardization will become easier and quicker. The Japanese Standards Association, or JSA, in July was given an additional authority to create working groups and documents for Japanese Industrial Standards (JIS) and international standards.

The government will also hold seminars for small companies and distribute pamphlets to make them aware of the importance of international standardization. Also, the JSA will function as an inquiry center on standardization, providing a variety of support for companies, particularly small companies, to acquire international standardization.

Additionally, the government is supporting other Asian countries with their efforts to better understand and acquire standardization and certification. In some instances, groups of companies from different countries work together toward obtaining standardization and certification.

For example, the government is providing training and technical support to developing countries in Asia in the areas of air conditioners, refrigerators and other home appliances.

"Japanese companies produce energy-saving appliances. These products enjoy good sales domestically and should also do well overseas," he said. "The government would like to support products such as these."

The lack of experienced people is also a global problem. Katase said the industry ministry would like to strengthen measures to train people engaged in standardization work.

"The standardization process involves examining data and creating documents. Universities and companies should teach such skills," he said. "Also, we should educate not only engineers, but also sales people and company management about standardization. The government should provide training for this as well."

As the IEC has a Young Professionals Program, which gives young people the skills and knowledge of standardization, the government has been conducting the Young Professionals Japan Program. In the program, 68 people are learning



The Tokyo International Forum is the main venue of the 78th IEC General Meeting in Tokyo. TOKYO INTERNATIONAL FORUM CO.

the basics of international standardization processes and attending lectures by those with firsthand experience in the standardization process.

"In many ways, what Japan is doing is a contribution to the world," he said.

Japan's various contributions will be highlighted at the 78th IEC General Meeting, to be held in Tokyo at the Tokyo International Forum in Chiyoda Ward, through Nov. 15.

It is the fourth IEC general meeting to be held in Japan, and the first since the one in Kyoto in 1999. Many meetings with Technical Committees and Subcommittees and official programs, such as Young Professionals Program, are held in conjunction with the IEC general meeting in Tokyo.

As of the end of October, there were

about 2,500 registered attendees, with about 1,800 coming from outside Japan. These numbers will make the 78th meeting the largest in several years.

The reason for the popularity is probably that the hosting country, Japan, has set a theme of "Integration toward a Smarter World," and has planned various sideline events in line with the theme. These events include "Technical Visits" to various companies showing off their newest technology, technical exhibitions, symposiums, technical demonstrations and cultural experiences, he said, adding Japan will host a "brand new style of IEC meeting."

Technical Visits include visiting the Fukushima Renewable Energy Institute, AIST (Advanced Industrial Science and Technology) in Koriyama, Fukushima

Prefecture, where the most advanced research on renewable energy is taking place.

The general meeting also has some hospitality programs, taking guests to tourist places in Tokyo.

"This IEC meeting will give foreign experts opportunities to see, touch and experience Japanese products and technology that will help them with their standardization activities. They will also be able to experience the sights in Tokyo and experience Japanese culture," Katase said. "We have received lots of support from the industry and academia for holding the IEC Tokyo meeting, which will be an important cornerstone to show that we will continue to be committed to make further contributions to the world."

## Overview of the Tokyo General Meeting

The International Electrotechnical Commission (IEC) is holding its 78th General Meeting from Nov. 4 to 15 at the Tokyo International Forum. This is the first General Meeting to be held in Japan in 15 years. As it is being held the same year Junji Nomura was named IEC president, expectations are mounting for Japan's contribution and enhanced presence with regard to the IEC's international standardization movement.

Since "smart" has become a global issue in the electric/electronic advanced technology arena, "Integration toward a Smarter World" has been identified by Japan as the theme for the meeting. Taking advantage of this opportunity, the country seeks to broadly introduce and propagate its original "smart" approaches (as they apply to cities, grids, electric automobiles, reduced energy consumption, the environment and other areas) to overseas meeting attendees.

Also being held under the meeting theme are Technical Visits, permanent exhibits, technological displays, symposiums and demonstration experiments. Furthermore, the event will also feature sightseeing tours and culture experience programs sponsored by the Tokyo Metropolitan Government, allowing foreign guests to attend tea ceremonies, wear kimono and enjoy sightseeing in and around the capital.

The IEC meeting is mainly comprised of the high-level General Meeting and meetings of the Council Board (CB), Standardization Management Board (SMB), Conformity Assessment Board (CAB), as well as Technical Committees (TC) and Subcommittees (SC). Usually, all meetings are closed sessions attended by international standardization technological specialists from around the world. This year's General Meeting in Tokyo is slightly different, as there are several programs open to the general public, including the General Meeting open session, open symposiums and technological displays.

#### Technical Visits

Leading Japanese companies and organizations will provide registered participants from overseas and those accompanying them with Technical Visits to company sites and showrooms on a complimentary basis.

Each visit has been prepared by the sponsoring companies as a way to introduce their latest technological activities to technical specialists from overseas. A notable inclusion on the list of Technical Visit destinations is the "Fukushima Renewable Energy Institute" of the National Institute of Advanced Industrial



Destinations of the Technical Visit program include Toshiba Science Museum in Kawasaki, Kanagawa Prefecture, and Panasonic Center Tokyo. TOSHIBA CORP., PANASONIC CORP.



### The 78th IEC General Meeting Open Session

- Date and time: Nov. 14, 2 p.m. to 5 p.m.
  - Venue: Tokyo International Forum, Hall B7
- Under the theme "Integration toward a Smarter World — Coexistence and Sustainability," which has been defined by the host country Japan as the original concept for this general meeting, the session is open to general public.
- Following the keynote speech titled "Learning from the past and looking into the future" by Masaki Sakuyama, president & CEO of Mitsubishi Electric Corp.; there will be three presentations: "Delivering Transformative Change through Sustainability and Smart Cities — Amsterdam and Aizu Examples" by Peter Lacy, global managing director, Sustainability Services for Accenture; "Smart Grid Maui Island" by Leon R. Roose, faculty specialist at University of Hawaii; "Smart Industrial Park in West Java, Indonesia" by Satri Falanu, head of PLN Research Institute.
- Also, there will be a panel discussion featuring the three presenters and Fumio Ueno, IEC/SEG1 convener as panelists, moderated by Hiromichi Fujisawa, IEC vice president and chairman of conformity assessment board.

Science and Technology, which opened in April in Koriyama, Fukushima Prefecture.

#### Sponsors' Exhibition

From Nov. 4 to 14, a Sponsors' Exhibition by seven sponsor companies will be held in the lobby gallery of the Tokyo International Forum B1F.

The exhibitors are NTT Corp., Sony Corp., Fujitsu Ltd., Mitsubishi Electric Corp., Hitachi Ltd., Toshiba Corp. and Panasonic Corp.

#### Special Exhibition

On Nov. 11 (afternoon) and 12, a Special Exhibition by 26 companies and organizations will be held in Hall B7 (1) at the Tokyo International Forum.

The exhibitors are Panasonic Corp., Philips Electronics Japan, Ltd., Ricoh Co., National Institute of Technology

and Evaluation, Fuji Xerox Co., The New Energy and Industrial Technology Development Organization, Corning Inc., Sumitomo Electric Industries, Ltd., Sharp Corp., TÜV Rheinland group, UL Japan Inc., Fuji Electric Co., Intertek Japan K.K., TDK Corp., Japan Quality Assurance Organization, Hitachi, Ltd., KDDI Corp., NGK Insulators, Ltd., Toshiba Corp., NTT Corp., NEC Corp., Murata Manufacturing Co., Mitsubishi Electric Corp., National Institute of Advanced Industrial Science and Technology, IDEC Corp. and Asahi Glass Co.

Information provided by the Ministry of Economy, Trade and Industry and the official website of the 78th IEC General Meeting in Tokyo. For more information, visit [www.iec2014.org](http://www.iec2014.org)

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## IEC General Meeting in Tokyo

## Helping SMEs to standardization

Chiho Iuchi  
STAFF WRITER

Economic globalization is not just a matter of concern for large companies, but also for small and medium-sized enterprises (SMEs), which account for more than 99 percent of companies in Japan, thus forming the basis of the nation's economy.

In dealing with globalization by exploring new markets and strengthening competitiveness, it is important for Japan to strategically address the international standardization of domestic technologies through the united efforts of the public and private sectors.

On May 15, the Ministry of Economy, Trade and Industry (METI) announced a standardization strategy. Among the points of focus were boosting the support functions for SMEs. Following the announcement, which led to the creation of a new standardization system in Japan, the Japanese Standards Association (JSA) set up a general standardization advisory center on June 20.

Established in 1945, the JSA is an integrated standards organization. Its primary activities include drafting Japanese Industrial Standards (JIS); disseminating standards; supporting human resource development in standardization and management techniques; promoting conformity assessment; and assisting international



Toshio Ibi, president of the Japanese Standards Association SATOKO KAWASAKI

standardization activities. The organization is serving as the secretariat of the executive committee of the current general meeting in Tokyo of the International Electrotechnical Commission (IEC). The government's new standardization system is targeting innovative technologies that may create new markets. Normally, drafts of standards in Japan are made by relevant industrial groups after a process to build a consensus reflecting the opinions of stakeholders. "Basically, it is important to establish

a standard satisfactory to every stakeholder so that the standard is used by many people," JSA President Toshio Ibi said. "However, this process takes time and tends to result in compromising standard levels, which may cause Japanese companies fall behind in global competition."

In addition to the "Top Standard Scheme," which was launched in June 2012, and allows a party to swiftly propose a new international standard, the new standardization system explicitly gives the JSA additional authority to develop JIS drafts or to submit standardization proposals to international organizations such as the IEC and the International Organization for Standardization (ISO) for newly-developed technologies in place of relevant industrial groups dominated by large companies.

Having been involved in developing almost every standard that Japan has issued, the JSA has long experience and expertise in the detailed format and complicated process of standardization. Through the public drafting system, which was created in 1998, the JSA has already developed JIS drafts in collaboration with the private sector. Such examples are seen in JIS B2711 for spring shot-peening, which is relevant to ISO26910-1:2009; and JIS H8304 for ceramic spraying, which is under consideration of proposal for international standardization.



The Japanese Standards Association holds annual meetings across the country to promote standardization. JSA

The newly-launched standardization advisory center at the JSA is a consulting team made up of JSA experts to answer inquiries regarding international standards. So far, most of the inquiries are from those who want to expand business overseas using existing standards, according to the JSA. Inquiries on cutting-edge technologies to be internationally standardized have yet to come.

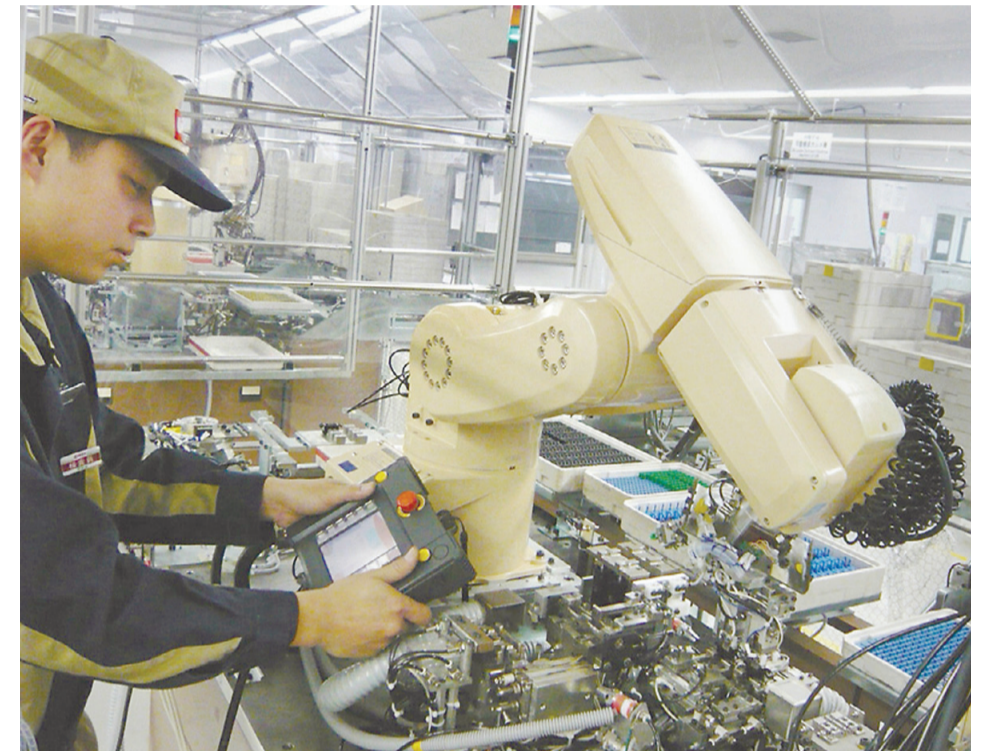
"In the case of such new technologies brought to our center, we are ready to support its standardization in collaboration with METI and the Japanese Industrial Standards Committee (JISC)," Ibi said. "What we want is to have excellent Japanese technologies recognized as international standards. In this sense, we expect our advisory center will help us find such technologies."

International standard serves as a 'passport' to global business. For SMEs to export their products overseas, it would be better to have them standardized so their counterparts will understand the quality and buy them without feeling risk. There are cases that Japanese SMEs' technical capabilities exceed the level of existing international standards but it is hard for them to prove it to their counterparts without having recognized standards. By developing new standards for such technologies, the companies will be able to distinguish themselves from their competitors.

In this regard, international standardization is not just a technical matter but also an important business strategy that the management of SMEs should understand.

As part of its activities to raise awareness of standardization, the JSA has organized various seminars and meetings to convey the importance of standardization and to introduce advanced examples. Every year in October, the JSA holds a national meeting on standardization and quality management in Tokyo as well as holding regional versions in the Hokkaido, Tohoku, Chubu, Kansai, Chugoku, Shikoku and Kyushu regions and inviting local companies to attend.

Since the enforcement of the Agree-



An advanced example of SMEs' international standardization activities can be seen in IDEC Corp., a medium-sized Japanese manufacturer of automation and control products. Sending its chief technology officer to join the discussions of the IEC technical committee, the company succeeded in having their "three-position enabling switch" internationally standardized. IDEC

ment on Technical Barriers to Trade administered by the World Trade Organization (WTO) in 1995, the JSA has also been involved in matching JIS with the international standards such as ISO and IEC.

So there is a budding trend to propose international standardization earlier or to work on the national standard and international standard at the same time to avoid Japanese standards from straying away from ISO or IEC standards.

"Previously, the JSA's ideas have been from the perspective of a provider that focuses on creating standards and promoting them. I think we need to consider more from the standpoint of those who use the standards," Ibi said, emphasizing the necessity of strategy for the JSA itself "if we aim to develop our orga-

nization which remains sound and sustainable."

With the shift in demand for standards being both domestic and international, the JSA is working on more publications on international standards and more translations of Japanese JIS," Ibi said.

"Japanese companies, which have been rather passive and ignorant in creating new international standards, are becoming more aware of the importance of standardization activities and how to use standards as business strategy," Ibi said.

"In harmony with these trends, the JSA will make greater efforts to provide companies, including SMEs, with the necessary information and advice based on market needs," Ibi said.

## Symposiums examine Japan's international standardization activities

On Nov. 11 and 12, three organizations will hold symposiums on international standardization activities of Japan at the Hall B7 (2) of the Tokyo International Forum.

Japanese/English simultaneous interpretation is scheduled to be available for foreign participants. Admission Free

## "International standardization; key for opening new market with innovation"

- Date and hour: Nov. 11, 1:30 p.m. to 5 p.m.
- Venue: Tokyo International Forum, Hall B7
- Organizer: National Institute of Advanced Industrial Science and Technology (AIST)

A mechanism for linking innovation to emerging technology based on research activities is required. We think that standardization is one of the most important tools to build this mechanism. AIST held three symposiums on strategy for international standardization to shared such ideas with national stakeholders.

This year, the General meeting of International Electrotechnical Commission will be held at Tokyo for the first time in 15 years. At this opportunity, AIST the Printed Electronics (PE) has been chosen to be the topic of the symposium because PE is a market-ready technology.

Following the opening speech by AIST's Ryoji Chubachi and a keynote speech by Hirofumi Katase, director general of the Ministry of Economy, Trade and Industry, experts from various countries are invited as speakers.

The speakers are John W. Mitchell, president of IPC; Stephan Kirchmeyer, chair, Organic and Printed Electronics Association (OE-A); Sunghan Kim, vice president of Samsung Electronics Co.; Ikuzo Ogawa, managing executive officer of Sumitomo Chemical Co.; Takao Someya, professor of the University of Tokyo who serves as printed electronics project leader at the New Energy and Industrial Technology Development Organization; and Toshihide Kamata, director of Flexible Electronics Research Center, AIST.

## "International Standards: Use and Global Strategy in Businesses"

- Date and time: Nov. 12, 10 a.m. to noon
- Venue: Tokyo International Forum, Hall B7 (2)
- Organizer: Tokyo Chamber of Commerce and Industry (TCCI)

In recent years, as the globalization of business has progressed, there has been rapid development in manufacturing both in advanced countries and in the emerging countries of Asia, Africa, and elsewhere. This development has also brought cooperation and competition on a variety of levels. For Japan to improve its international competitiveness in the modern world, it is now, more so than in the past, increasingly important for Japan to pursue a strategy of standardization.

This symposium will focus on the importance of pursuing a standardization strategy and offer case studies of businesses that are pioneering in this area.

The keynote speech titled "Defense to offense: recognizing international standardization as a critical strategy for medium and small-sized enterprises, and knowledge from successes and failures" will be delivered by Toshihiro Fujita, senior executive officer, chief technology officer of IDEC Corp.

Also there will be case studies on international expansion and the handling of international standards in businesses. Prior registration is required. For inquiries, call the Tokyo Chamber of Commerce and Industry, SME Department at 03-3283-7754.

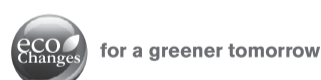
## "What's going on in international standardization of Smart Cities/Community?"

- Date and time: Nov. 12, 2:30 p.m. to 4:30 p.m.
- Venue: Tokyo International Forum, Hall B7
- Organizer: IEC Activities Promotion Committee of Japan (IEC-APC)

This event is intended to promote further understanding by broad stakeholders of international standardization activities on Smart Cities/Community.

The speakers are Fumio Ueno from Toshiba Corp., who serves as the convener of IEC/SEG1, which is working on smart cities; Yoshiaki Ichikawa from Hitachi Ltd., who serves as the chairman of ISO/TC268/SC1, which is working on smart community infrastructures; and Sekhar Kondepudi of the National University of Singapore, who serves as vice chairman of the ITU-T/Focus Group on Smart Sustainable Cities. No prior registration required.

For more information, visit <http://www.2014iectokyo.jp/events/en/symposium.html>



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HVAC

- High reliability by use of in-house compressor

IEC 61375

TCMS

- Train-wide Ethernet communication based on IEC61375
- Reduced in-car hard-wires by transmitting control commands and applying Remote I/O
- Economical operation support

Brake System

- Integrated Electronic Relay Valve
- Compact and lightweight
- High performance and high reliability
- Easy maintenance

Auxiliary Power Supply

- Compact and lightweight
- High efficiency
- Excellent output voltage control

Traction Inverter

- ALL-SiC Power Module applied
- 30% reduction in energy consumption
- 65% reduction in size and weight
- \* Compared to conventional traction inverter with IGBT power modules



# IEC General Meeting in Tokyo

(Publicity)

## Supporting IEC for overseas transportation business growth

Established in 1921, Mitsubishi Electric Corp. is a Japanese multinational electronics and electrical equipment manufacturing company headquartered in Tokyo.

The company, offering a spectrum of technologies such as robots, satellites, power generation equipment and home appliances is now making a stronger push into the overseas transportation business by supporting a global move to technology standardization.

"Our transportation business is a part of social infrastructure business and is considered a growth business (within the company)," said Takahiro Kikuchi, an executive officer in charge of Mitsubishi Electric's public utility systems. "To expand our business overseas, we hope Japan will lead IEC standards."

Mitsubishi Electric, which holds the No.1 position in Japan as a supplier of a variety of electrical equipment used for transportation systems such as traction motors and inverters with more than 50 percent market share, is keen to extend its reach beyond Japan to emerging markets, including India, Southeast Asia and Central and South America.

"We have to go into markets such as Southeast Asia where new routes will be built because we can't expect new routes in Japan to emerge as the country's birth rate is declining and the population is aging," said Kikuchi.

Together with other Japanese companies and the government, Mitsubishi Electric supports IEC-led international standardization of technology — a key to supporting its technologies and products to meet demand from foreign customers.

Markets such as India, China and South Korea seek IEC-certified products and technologies. Kikuchi said: "In the past, we depended on JIS (Japanese Industrial Standards) and the IEC standards were barriers to our global expansion. But now, they are important."

Japan is trying to lead IEC standards by developing an enhanced technology and seeking its adoption by the commission, rather than just follow-



**Takahiro Kikuchi, executive officer, group president of Public Utility Systems, Mitsubishi Electric Corp.** MASANORI DOI

ing standards developed by foreign players. "We should not fight with our counterparts, but cooperate with them to make an agreement (on IEC standards)," said Shogo Shiomi, senior manager of Mitsubishi Electric's standardization group.

Led by the government, Japan set up an organization to monitor and enhance its railway technology to meet international standards. The country also launched a facility to certify Japanese railway technology for safe operations overseas, rather than relying on foreign certification. In addition, a consulting arm established by several Japanese railway operators helps bring home-grown technology to overseas markets.

Such moves seem to be working out. While it is struggling to survive fierce competition in consumer electronics, Japan has an edge over its rivals in the race of high-speed trains. Some supply complete trains to Europe, others such as Mitsubishi Electric are strong in electrical equipment in the global market.

"Japanese technology has a reputation for safety and reliability," said Kikuchi. In his view, Mitsubishi Electric is ranked fourth in the global market

for electrical equipment, following the "Big 3" players: Bombardier Inc. of Canada, Siemens AG of Germany and Alstom SA of France.

Mitsubishi Electric, which has about 30 experts working to support IEC standards, drafted standardizations for an Ethernet-based train network system that integrates some electrical equipment such as motors and brakes to work as one system. In March, the draft was certified by the IEC as an international standard. Currently, Japan is working on standardization of "hybrid systems," including a radio system, a train communication network, with an energy storage system to follow suit.

Behind Mitsubishi Electric's prowess is also a self-made, high-power semiconductor. With its own chips, "we can develop various components ahead of others," said Kikuchi. "That is our strength." The use of such semiconductors, for example, helps reduce the size, weight and energy consumption of an inverter control system, leading to the efficient operation of trains.

Kikuchi thinks that Mitsubishi Electric and Infineon Technologies AG of Germany, hold about 80 percent of the global market for high-power semiconductors, with the two having equal shares.

Mitsubishi Electric's train control and monitoring system (TCMS) — a "brain" to integrate various electric components to work as one system — has been well-received and holds a 70 percent share of the Japanese market. For over 50 years, the company has been developing and manufacturing electrical equipment for rolling stock, railway control and management systems and railway station facilities.

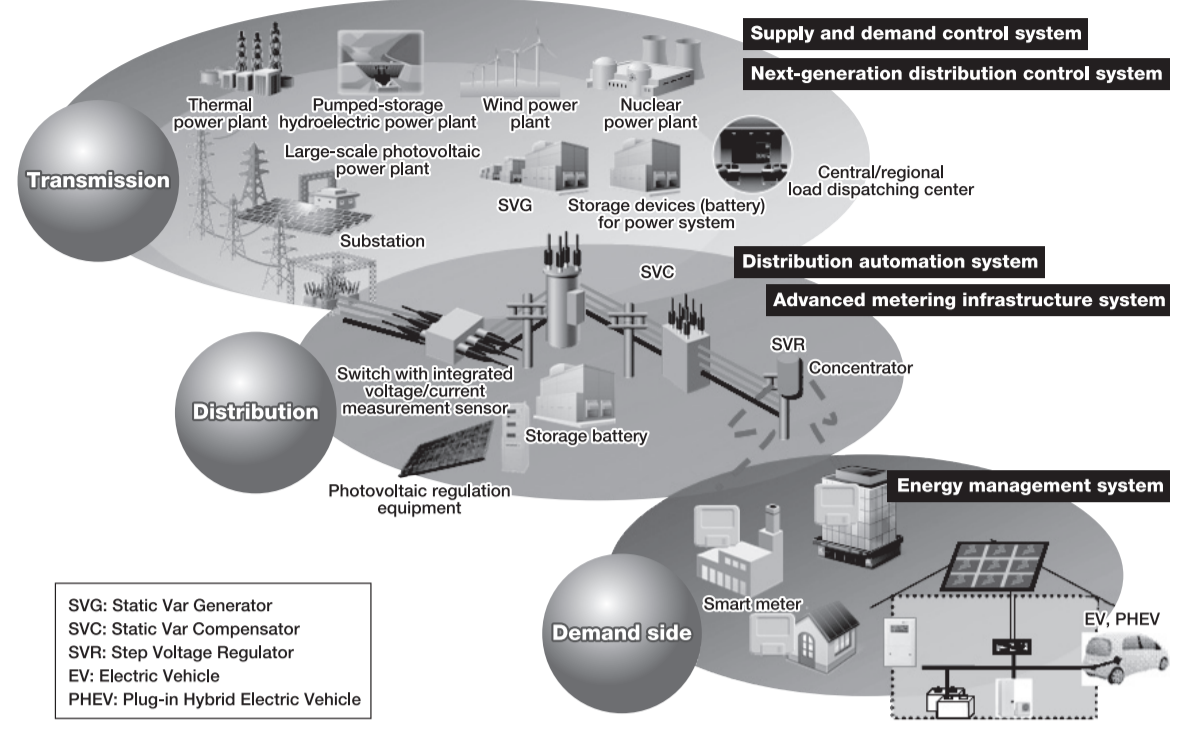
The company has exported electrical equipment for about 36,000 trains in 28 countries since it first exported traction motors and a brake system to Indian Railways in 1961. Today, the company holds approximately 70 percent of the Indian metro market, said Kikuchi.

Recently, it won an order for a converter-inverter system from a German railway company, marking the first entry into Germany by a Japanese supplier. "We hope to cut into that market," he said. "Europe is the king of railway systems. They have the most advanced technology (in the world)." Entering the European market proves that Mitsubishi Electric has solid technology, he added.

Mitsubishi Electric's assets also include local production and maintenance services. It has production facilities in the U.S., Mexico, Italy, Australia, China and two mother plants at home. In May, it opened a branch in New York to offer maintenance services locally.

Its transportation systems business is part of Mitsubishi Electric's ambitious mid-term plans. The company is aiming to generate more than ¥5 trillion, or \$46.2 billion, in revenue by the beginning of fiscal 2020, up from the ¥4.18 trillion planned for the current fiscal year.

### Smart Grid vision overview



Mitsubishi Electric has implemented smart grid experiments at three sites in Japan: Amagasaki in Hyogo Prefecture, Kamakura in Kanagawa Prefecture and Wakayama. The objective of these experiments is to operate a real system in the field to log data and validate fundamental technologies. MITSUBISHI ELECTRIC CORP.

## Smart grid systems key area of focus

Among the broad spectrum of electric and electronic businesses that Mitsubishi Electric Corp. is engaged in, the Energy & Industrial Systems Group is positioned as one of the more competitive departments, generating "nearly 10 percent of the company's total sales of ¥4 trillion," said Executive Officer Yasuyuki Ito, who serves as president of the group.

The group provides systems and products that play a vital role in electric power generation, transmission, distribution and retailing. On the product side, this includes generators, switches, transformers, switchgear and vacuum circuit breakers, while systems include plant monitoring, system stabilization and system preservation and control.

With the prospect of demand increases for electric power equipment due to the economic growth of developing countries and renewals well underway in developed countries, the group has established factories and sales bases around the world, including the U.S. subsidiary, Mitsubishi Electric Power Products, Inc.

"In an increasingly global business climate, we restructured the organization within our group this April, integrating the domestic and overseas divisions of our major businesses: power generation, transmission, distribution, nuclear power and medical systems," Ito said.

The medical systems business within the group is mainly in charge of particle therapy system, which has been developed by combining the company's 40 years of expertise in the fields of radiation therapy and accelerator systems.

Utilizing the characteristic features of protons, carbon, and other heavy ions, particle therapy systems allow for the pinpoint targeting of cancerous tumors while minimizing side effects on surrounding tissues. Since the 2000s, it has been increasingly selected as an advanced solution in the treatment of cancer, treating around 23,000 patients in Japan, of which more than 80 percent were treated in the medical facilities equipped with the Mitsubishi devices.

"This is domestically developed, cutting-edge technology, which is one of our competitive businesses," Ito said proudly.



**Yasuyuki Ito, executive officer, group president of Energy & Industrial Systems, Mitsubishi Electric Corp.** YOSHIAKI MIURA

Aiming to export such equipment and systems, "We want to have our related technology and expertise internationally standardized in the framework of the International Electrotechnical Commission," Ito said.

Another key area are those related to smart grid systems.

A smart grid is an electricity transmission and distribution network that, in utilizing information technology to address fluctuations in both supply and demand, helps realize the stable flow of electricity. Changes in supply reflect the increased use of renewable energy such as solar power and wind power generation, while changes in the demand for electricity in this instance refers to the ongoing market acceptance of electric vehicles as well as the trend toward all-electric-powered housing.

On one hand, renewable energies are viewed with promise in the quest of a low-carbon society; on the other hand, their volume of power generated fluctuates according to changes in the weather and other conditions. Accordingly, these methods pose considerable difficulties in controlling output.

"The development of exhaustive element technologies that optimally balance electric supply and demand is critical to addressing this issue through the practical application of smart grids," Ito explained. Also, the policy shift toward separation of electrical power production from power distribution may lead to more electric power suppliers and distributors to newly enter the power network. "Some control systems should be definitely needed," he added.

Electric companies are accelerating efforts to develop an advanced meter infrastructure (AMI) to improve customer service and reduce meter reading costs. An essential element in this AMI is the smart meter. Mitsubishi Electric has developed AMI technologies and systems that ensure reliability and flexibility in measuring and controlling electricity meters through next generation wireless mesh networks.

"Smart-grid-related businesses are new fields where new technologies and systems are developing," Ito said. "How to construct a smart grid depends on each country's different conditions and requirements. As such networks and related systems will be necessary worldwide in the future, the discussions at the IEC at this time are very important."

Mitsubishi Electric has implemented a smart grid experiment at three sites in Japan. The objective of this experiment is to operate a real system in the field, to log data and validate fundamental technologies.

"It is one of our advantages that we have real data from these experiment sites that have enabled us to develop innovative and optimal devices and systems," Ito said. "For the better and more advanced system, we would like to contribute in making new standards in this field. Of course our experts are attending each of the relevant IEC technical committees to discuss and negotiate the standardization of these future technologies," Ito said.

"I hope that the IEC General Meeting in Tokyo, which is a good opportunity for us to showcase our technologies appealing to an international audience, shall be fruitful and meaningful."



Railcar traction inverter with all-SiC power module is suitable for large-capacity railcars. MITSUBISHI ELECTRIC CORP.

## Now there's a pinpoint technology to reach tumors without even touching them



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### Particle Beam Treatment Systems

Mitsubishi Electric's Particle Beam Treatment Systems focus a particle beam from outside the body at a tumor within the body, with pinpoint accuracy. The technology accelerates protons or carbon ions to 70% the speed of light, forming a particle beam. The beam releases its greatest energy at a fixed depth from the body's surface, targeting only the tumor but minimizing damage to the surrounding tissue. These innovative systems are at work in a growing number of medical facilities.

Mitsubishi Electric particle therapy system is not marked as a medical equipment outside Japan at present. For more information, contact Mitsubishi Electric Corporation Tokyo Building, 2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan <http://www.mitsubishielectric.com/bu/particlebeam/>

for a greener tomorrow





## IEC General Meeting in Tokyo

## Seamless factory automation

Having its strengths in motor design and production as well as machine control, the products of the Mitsubishi Electric Corp., Factory Automation Systems Group, are not only used at production sites, but also in intelligent buildings, as well as a myriad of other areas.

Its main line of products includes industrial components such as controllers and motors typically used in factories, as well as power distribution system components such as circuit breakers and transformers. Representative products include Programmable Logic Controllers (PLCs), servomotors and systems (comprising a servo motor, amplifier and controller) and inverters that are used to control the speed of motors. Furthermore, the group produces inverters that control the revolution speed of other areas.

In the area of machinery, it produces electrical discharge machines for processing precision components such as artificial bone implants through to machining F1 car parts. Furthermore, its laser processing machines are used for sizing and shaping metal plating and hole-punching through multilayered print structures such as circuit boards for which the company has a worldwide share of more than 70 percent. In addition, the Factory Automation Systems Group is a leading maker of CNC, a specialist precision machine tool controller.

As for the international standardization movement, Hideyuki Ohkubo, representative executive officer and senior vice president, who also serves as the group president of Factory Automation Systems at Mitsubishi Electric Corp. commented: "CC-Link, a network technology, which was pioneered by Mitsubishi Electric is a very flexible and versatile open field network. It has already acquired various international standards including ISO, IEC, the Chinese standard GB, as well as SEMI, CNS and KS standards. CC-Link integrates each layer of factory automation seamlessly, from the so-called top floor pertaining to an information network layer to the "on-site" controller network layer, down to the "on-line" field network and wireless equipment network layer. The CC-Link Association was established in order to spread adoption of the CC-Link network on a global level. Led by eight board member



Hideyuki Ohkubo, representative executive officer and senior vice president, group president of Factory Automation Systems, Mitsubishi Electric Corp. SATOKO KAWASAKI

companies, including Mitsubishi Electric, 2,183 partner companies are currently promoting CC-Link internationally, out of which 70 percent are overseas makers. As for the products, already 1,389 models have been released by partner companies. This positions CC-Link as a serious, Asian-led technology with an ever-expanding global appeal.

Another important benefit of CC-Link is that forms one of the key technologies within Mitsubishi Electric's e-F@ctory™ concept. This concept is designed to easily facilitate real-time information exchange in a manufacturing environment; for example, CC-Link allows the upper layer information system such as MES to be easily interfaced with the factory site. In this scenario, if there is a system breakdown on the production line, the information can be promptly fed back to the upper layer information system, giving immediate real-time information allowing recovery decisions to be made quickly based on the current circumstances.

Furthermore, as an advanced form of CC-Link, CC-Link IE was developed by fully incorporating Ethernet technology. Securing real-time communication and reliability are crucial in any industrial network. CC-Link IE has acquired the

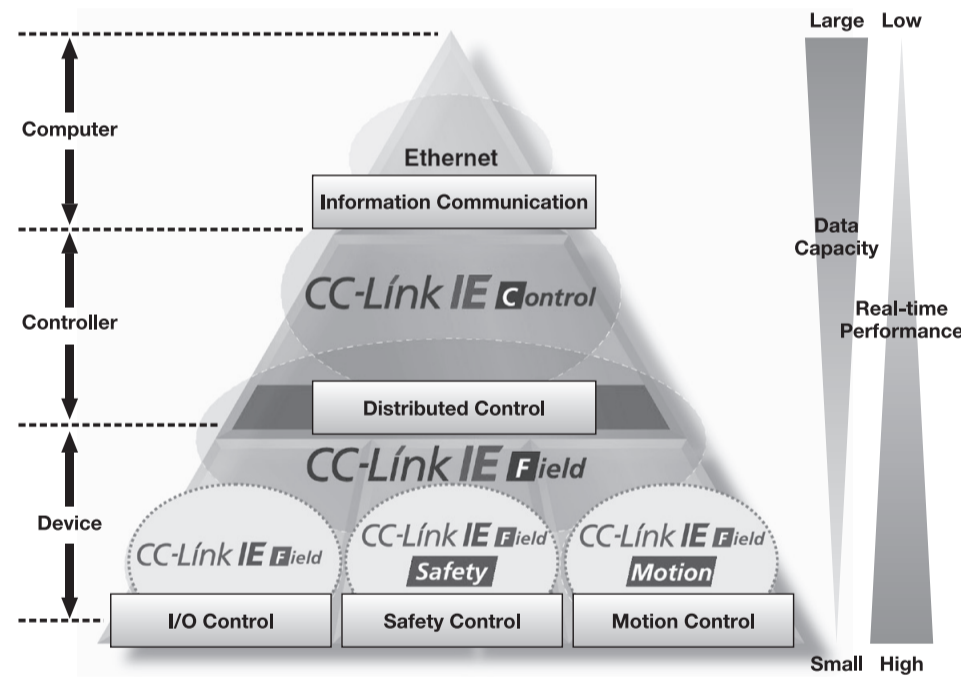
IEC61158 and IEC61784 standards.

"Listening to the voices of our customers, we work closely with our partners who produce and supply the upper-layer applications for production control, quality control, energy consumption reduction and so on, to create real-use case solutions to address the customer's issues. Such action in turn can also reduce the total cost of the ownership (TCO), while creating an ideal optimum workplace for the entire factory and its workers. As a major component maker, I think it is important for us to consider and realize such an integrated FA-IT approach. However, realistically we cannot produce all of the vast line of products that are required to build such a system, especially as there are varying needs on an international basis. Therefore, we must partner with an increasing number of excellent system integrators, as well as external equipment makers that may each offer specialist knowledge and system solutions," noted Ohkubo.

To date, the company has focused on the domestic market, supplying its products to makers within Japan. Consequently, the domestic versus overseas ratio currently stands at 55:45. "Beginning about 10 to 15 years ago, indirect export figures started to rise as domestic makers began exporting their finished products often integrated with our components. Hence, we assume that approximately 70 percent of our products started entering the overseas market indirectly from around the turn of the century. Since such conditions necessitate overseas support, we have set up our FA Centers in various countries around the world. These provide pre- and post-purchase service. We also have overseas sales companies to service our products that have been exported indirectly from Japan. Due to this globalization trend, we now have established direct overseas offices in 83 countries and another 72 FA sales companies in 22 countries around the world, as well as an extensive network of distribution partners."

As for production, "The overseas market is definitely going to expand in the future, and since we believe in producing our products where they are used, we have expanded our overseas production bases in the Asian market. Currently we have three such bases in China, one in Thailand, one in Taiwan and another in India."

Toward the future, Ohkubo said: "We hope to strengthen our competitive power in the international market by partnering with overseas system integrators, but also by producing components that correspond to the needs of each region. Only high-quality products and systems can become accepted on an international basis, and whether such a goal can be achieved depends on the efforts of the company that developed them. Thus, in the Factory Automation Systems Group, our top issue for the future is to probe ways of expanding and spreading the concept and the overall benefit of operating an e-F@ctory™-based manufacturing system to more countries around the world. At the same time, we are concentrating our efforts to increase the number of partners, especially at the top layer, who can provide outstanding complementary solutions while sharing common values on service and quality with us. These partners should be well-experienced with a wide range of solutions to offer, because system flexibility becomes very difficult if they can only supply a single product for a single specific condition."



CC-Link IE Field suits the industry field network international standards IEC61158/IEC61784. MITSUBISHI ELECTRIC CORP.

## IEC evolves in line with technological advancement

The International Electrotechnical Commission has a long history going back more than a century. The IEC was officially founded in June 1906, in London, where its central office was set up. Since then, the IEC has continuously evolved, with its role changing as technology advanced.

## 1906 - 1909

At the dawn of the IEC era, the most important topics in electrotechnology of the time were considered in plenary assembly.

The first three topics for study concerned the vocabulary, symbols and ratings of electrical machines. Agreement on the first two was essential if understanding at the international level were to be achieved, and the latter was mandated by the St. Louis conference of 1904, which set up the Commission.

## 1910 - 1919

The period up to World War I saw the first three advisory committees (the original name for technical committees) come into being.

The speed at which these early committees worked is impressive, given the limitations in communications and transport of those times. By 1914, the IEC had issued its first list of terms and definitions covering electrical machinery and apparatus, a list of international letter symbols for quantities and signs for the names of units and others.

Soon after the end of World War I, work restarted and, in October 1919, a plenary meeting in London saw representatives of 20 countries attending.

## 1920 - 1929

This decade enjoyed a rapid expansion of both the scope of, and participation in, the IEC work. Most effort was still concentrated in the power sector but also reaching out to consumer items.

Also, the advances in transport, electronic and telecommunication technologies made during the war began to influence the market and this was quickly reflected in the need for international standards.

## 1930 - 1939

This period experienced significant consolidation and advances, unfortunately to be interrupted by World War II. In 1938 the IEC published the first edition of the International Electrotechnical Vocabulary, prepared by TC1 — a milestone. It contained more than 2,000 terms in English, French, German, Italian, Spanish and Esperanto, with definitions in the first two languages.

## 1940 - 1949

The bulk of this decade being dominated by World War II, very little IEC work was achieved. In 1948 the Central Office moved from London to Geneva, where many allied United Nations agencies were being set up, and where the ISO was also being founded.

## 1950 - 1959

The electronics sector took a big step forward with the creation in 1954 of TC40 (components for electrical equipment) and the immediate creation of subcommittees covering capacitors, resistors, high frequency cables and connectors, piezoelectric switches, plugs, sockets



Top, IEC headquarters building in Geneva, right, the first IEC Council in London in 1908 IEC

and switches, and ferromagnetic material parts.

## 1960 - 1969

The trend continued into the 1960s as TC46 (cables, wires and waveguides for telecommunication equipment) began work. The IEC elevated work previously taking place under the aegis of TC39 to a full committee, TC47 (semiconductor devices) and its later subcommittee on integrated circuits.

## 1970 - 1979

Very few new TCs were created during this period, since technology developments fell mostly within the scope of existing TCs and were handled by the many new subcommittees as required.

The increasing influence of computing in day-to-day life was recognized in 1972 by the creation of TC74 (safety of data processing equipment and office machines).

## 1980 - 1989

The rapid take-up of new technologies was evidenced in this decade by the creation of TC82 (solar photovoltaic energy systems), TC86 (fiber optics), which had previously been dealt with in a subcommittee of TC46 for telecommunications, and TC90 (superconductivity).

## 1990 - 1999

In 1992, the increasing pervasiveness of microelectronics and, in particular, the increasing use of sophisticated programs for chip design, led to the forming of TC93 (design automation).

In consumer electronics, the lines between the different media carrying audio, images and video were becoming more and more blurred. The IEC reacted in 1995 by combining the fragmentation of work in the multimedia area in 1995 under one management structure, somewhat along the lines of JTC1, and known as TC100 (audio, video and multimedia systems and equipment).

In view of the increasingly rapid cycle time from innovation to marketable products and services, the IEC found it-



self having to commence standardization in parallel with the development of new technologies and often well ahead of application and market launch. A case in point during this period was the creation in 1998 of TC105 (fuel cell technologies).

## 2000 - 2006

Through the beginning of this century, the IEC expanded into new territory that is either high-tech or of high political visibility. In 2000 it created TC107 (process management for avionics), followed by TC108 (safety of electronic equipment within the field of audio/video, information technology and communication technology) and TC109 (insulation coordination for low-voltage equipment), both set up in 2001.

At the grass-roots level, the environment has been a growing concern for at least three or four decades. This bottom-up pressure began to have a visible influence on business and governmental leaders in the 1990s, with the Kyoto Protocol as one example. 2004 saw the IEC create TC111 (environmental standardization for electrical and electronic products and systems) to look at how to ensure that IEC standards work takes the environment into account.

## Beyond 2006

Other TCs will follow as new technologies emerge and as new industries form. Today, the IEC carries out its work using the most contemporary tools and the most up-to-date ideas for serving its market. These include web rooms and online database standards, among many other examples.

The IEC also keeps an eye on the future through the President's Advisory Committee on Future Technologies, which continues to assess those emerging trends that might require dedicated standardization efforts.

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# IEC General Meeting in Tokyo

(Publicity)

## Toshiba at the forefront of international standardization

As one of the leading electronics makers in Japan, Toshiba Corp. has a history of more than 107 years promoting the international standardization of the electro-technology. Ichisuke Fujioka, co-founder of Toshiba, served as a member of the preparatory meeting, and attended the official inauguration of the International Electrotechnical Commission (IEC) in London, in 1906. Japan was the only Asian country present at the inauguration meeting and Fujioka made progressive comments there.

Since then, Toshiba has maintained a long-term, close relationship with the IEC. As a multi-tiered maker involved in the production of everything from heavy electric machinery such as power generators through to household appliances, each division has developed its products with international standardization in mind. This trend became especially strong after World War II as Japan's economy developed tremendously, and the company reacted by becoming more business-oriented.

In 1995, the World Trade Organization was established, settling on the mission of promoting international trade on a global scale. "This became the turning

point for the IEC to become more strategic, and under the guidance of the Ministry of Trade, Economy and Industry of Japan, Toshiba employees have actively attended IEC's Technical Committees (TC), as specialists and committee members, in whichever fields we are involved in," explained Atsushi Itsukaichi, Chief Specialist of the Technology Planning Office, Technology and Innovation Division of Toshiba Corporation.

From four TC that worked to standardize the technological terms, units and symbols of electrotechnical items at the beginning of the 20th century, the IEC has grown to have 122 TC, exchanging views on various electric and related technology items, products, systems and so on. Among them, Toshiba serves as secretary for TC120, which discusses the standards on electric energy storage systems. The company also serves as assistant secretary of TC122, where views are exchanged on ultra-high voltage AC transmission systems. Other TC to which Toshiba dispatches its staff to discuss and provide technological assistance include one specializing in semiconductor packaging, as well as TC105 that scrutinizes fuel cell technologies, for which Toshiba

also serves as chairman.

On the senior level, Seiichi Takayanagi, former corporate senior executive vice president of Toshiba, became the 30th IEC president in 2002. Additionally, the current IEC president, named in 2014, is compatriot Junji Nomura, corporate advisor for the Energy Solution Business Promotion of Panasonic Corp. "This choice was especially meaningful for Japan as a country, since international standardization competition is intensifying not only among the U.S., Europe and Japan, but also with quickly developing countries. Nomura's presidency shows many countries approve of our country's sincere, neutral and humble attitude to pursue the best results for all," Itsukaichi says.

Behind such balanced personnel appointments is the reality that, regardless of country of origin, each global manufacturer today is aiming to create the social infrastructure and network interface that is applicable to any country. Such movements are known as the creation of the de jure standard, a standard developed after discussions by global experts on standardization proposals, which are approved through voting by standards

institutes such as the IEC. This movement contrasts against the de facto standards of products such as DVDs or VHS tapes of 10 to 15 years ago that achieved success as a result of market competition.

A shift from a product-specific system to a de jure standard will expand the profit margin of Toshiba and other makers involved in such activities. Moreover, such expanded movement is so vast that it would naturally come to involve the government or state. One example is the concept and technology to create the smart grid and smart community, an idea that began evolving around 2005. Japan, the U.S. and the EU are all working hard and competing against each other to create a meaningful social infrastructure, energy system, interface, network and so on, according to this concept. This in turn requires justifiable international de jure standards and rules that can be approved by all. "If not, a company or entity can be sued, as once happened to JR East over its SUICA railway pass cards. It was sued by MOTOROLA for not complying with international standards," pointed out Itsukaichi.

Toward the future, Toshiba thinks the standardization of sustainable systems



Ichisuke Fujioka (second from left, front row) in Paris in July 1906 en route to the official inauguration of the International Electrotechnical Commission in London. "BIOGRAPHY OF DR. ICHISUKE FUJIOKA" / TOSHIBA SCIENCE MUSEUM

may become a top priority for the IEC. "But whatever task we take on, we must be aware that the standardization movement takes a long time, and does not directly result in short-term sales or profits. Nevertheless, if we don't join the movements of other makers and countries now, we might be left out, leaving no

room for us to enter after a standard has been established. This would result in a huge loss for us in the long run. In that context, the understanding and support of our corporate leader in the international standardization movement is crucial. This movement comprises our corporate philosophy."

### Major standards and standardization organizations

#### International standards

- IEC: International Electrotechnical Commission
- ISO: International Organization for Standardization
- ITU: International Telecommunication Union

#### Regional standards

- CEN: European Committee for Standardization
- CENELEC: European Committee for Electrotechnical Standardization
- ETSI: European Telecommunications Standards Institute

#### National standards

- JIS: Japanese Industrial Standards
- ANSI: American National Standards Institute
- DIN: Deutsche Industrie Normen

## Capturing overseas sales

Fuji Electric Co. is an electrical manufacturer specializing in five technology fields: power generation/social infrastructure, industrial infrastructure, power electronics, electronic devices and food and beverage distribution. Fuji Electric Co., Ltd aims for compatibility between high-tech innovation and global standardization.

Therefore, the company set up the specialized section to promote international standardization in their business field and established an international standardization committee in April 2014.

"We are accelerating our efforts to obtain certification of conformity of our products with international standards. For example, we are working on increasing our overseas sales ratio to more than 50 percent by 2017," said Tatsunori Takahashi, who serves as the senior manager of the International Standardization Department and secretary general of the standardization committee.

Power semiconductors and power

electronics are the core products that Fuji Electric offers to contribute to the reduction of emissions (e.g. CO2) by factories, as well as to improve energy conservation in data centers, stores, environmentally-friendly vehicles and trains.

Yasutoshi Yoshioka, a manager in the Standard Technology Development Department, has been a member of International Special Committee on Radio Interference, or CISPR, since 2008, and since 2013, he has been leader of a project team under IEC/TC82 working to develop an electromagnetic compatibility standard applying to photovoltaic power generating systems. He is also involved in the standardization activity on the protection of electrical power supply systems and the enhancement of power quality.

"The promotion of international standardization as well as the establishment of the global certification business will be a great advantage for Japanese electrical manufacturers," he said.

## TÜV Rheinland: Long history ensuring safety, quality for consumers

The history of TÜV Rheinland began in Germany 150 years ago when steam boilers first used to generate electricity exploded, causing many lost lives and enormous property damage. As the onset of industrialization introduced technologies that posed new potential dangers, the company's original mission was to eliminate or minimize risks arising from the use of new technical equipment. We still fulfill this mission, especially when new technologies are used to which, frequently, no standards or technical rules yet apply.



Ralf Wilde, executive vice president, products, member of the board of TÜV Rheinland Berlin Brandenburg TÜV RHEINLAND

In principle, technology is not dangerous in itself. A car in a garage does not pose a safety hazard; it can only become dangerous once a human takes over the driver's seat. The more people are trained and taught how to handle technology, the less likely using technology will pose risks.

On the other hand, the global internet and low-cost use of microchips have disrupted technology that was previously deemed safe. If electronically controlled machinery shares incorrect information or are either coincidentally or deliberately manipulated, an otherwise safe technology can become dangerous.

TÜV Rheinland has specialists for state-of-the-art automotive electronics, as well as experts on challenges faced by other industries and institutions. Microelectronics and chips

will be used everywhere in places like future smart cities and solar technologies, so we test the reliability of communication electronics. You could say we check the language and grammar of machinery and products to ensure they communicate with each other correctly.

Since the beginning of the 1980s, TÜV Rheinland has assisted Japanese manufacturers with the safety aspects of exported products, which have local authorization procedures. These manufacturers recognize TÜV Rheinland as an accredited international inspection authority and we are able to provide "one-stop testing" services to accommodate export markets worldwide, saving Japanese customers a great deal of time and money.

With its leading international position as an exporter of a wide range of technologies, Japan was and continues to be a highly regarded and reliable international partner in the networks of politics, business and science. This week, experts from all over the world are meeting in Tokyo for the conference of the International Electrotechnical Commission (IEC), an important institution that has dealt very intensively in the past with the harmonization and standardization of the different technical norms around the world and is today preparing for future technological changes.

On the theme of an 'IEC Master Plan 2011' and the 'Japan Recovery Plan,' international experts will discuss the future foundations for designing international standards and technical regulations. In the future, TÜV Rheinland will be involved even more intensively in the work of IEC bodies. Newly developed TÜV Rheinland services will cater specifically to the new technologies for smart cities, smart grids, e-mobility and energy efficiency. As a matter of principle, our focus in dealing with new technological challenges will continue to be on consumer safety and ensuring that products are not safety hazards.

**Our driving force is Kitakyushu. We move the world.**

Yahatanishi-ku Robot Plant  
Robots that make robots.

Yukubashi-shi AC Drive Plant  
Robots that make AC drives.

\*In the center of the photograph is the company's dual-arm robot, MOTOMAN-SDA10D.

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From Kitakyushu to the world and to the future, Yaskawa Electric is taking on a new challenge.



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Yaskawa Electric Search

## UL working to realize smart grid built on clean energy



Interior structures of the Glass Building at the Tokyo International Forum TOKYO INTERNATIONAL FORUM CO.

The smart grid is one of the key drivers of the future development of a smarter world. As it continues to grow, many complex new products will enter the marketplace and demands for ensuring their safety and reliability will increase. As a premier global independent safety science company, UL has been offering testing and certification services of smart grid products, including electric vehicle equipment, photovoltaic power systems, wind turbines, batteries and LEDs for more than 10 years. Being the world's number one IECEE certificate issuer in 2013, UL provides comprehensive support from beginning to end with the issuance of IECEE certificates through our global network of NCBs and CBTLs.

UL is also recognized for its unrivaled technical expertise in the area of stan-

dards development. Besides UL standards, UL is involved in the development of IEC standards and has technical staff participating in leadership and expert roles on several national committees and maintenance teams associated with smart grid technologies including photovoltaic and wind energy.

The product safety standards and certification systems governing smart grid technologies are still in the process of development. Leveraging UL's industry leading global knowledge and research capabilities, we can deliver the information, guidance and resources to develop safety standards and establish certification schemes. Being a respected technical voice within the IEC community, we contribute to advance safety of smart technologies and keep pace with innovation.

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**Development of high value-added crystal devices**

NDK is developing high value-added crystal devices for industrial markets using the expertise and core technologies it has accumulated as a comprehensive maker of frequency control devices

NIHON DENPA KOGYO CO., LTD. [www.ndk.com](http://www.ndk.com)



# IEC General Meeting in Tokyo

(Publicity)

## Panasonic focuses on greener, safer, better living for people in smart towns

Since the founding of the company in 1918, Panasonic has been following its basic management philosophy of contributing to the progress of society and the well-being of people throughout its worldwide business operations. With its corporate activities always centered on people, the company will continue to provide better living for its customers.

This is the unwavering commitment Panasonic has made over many years, and it is crystallized in company's corporate slogan: "A Better Life, A Better World."

In all these efforts, Panasonic has vigorously pursued a never-ending quest to ensure safety, quality and comfort for the public while offering a wide variety of products and services. And with the progress made in consumer electronics, the company has worked very closely with the IEC to establish and promote international standards.

Panasonic's endeavors in electrical safety are not limited to consumer electronics. For example, in the housing area, the company is providing a comprehensive solution that offers the capabilities of energy creation and storage as well as en-

ergy management, which connects all of the devices in a home together. Consequently, the company has made significant contributions in the establishment of international standards for the Home Energy Management System (HEMS), which plays a central role in harmonizing "ecology" and "comfort" by controlling the entire home.

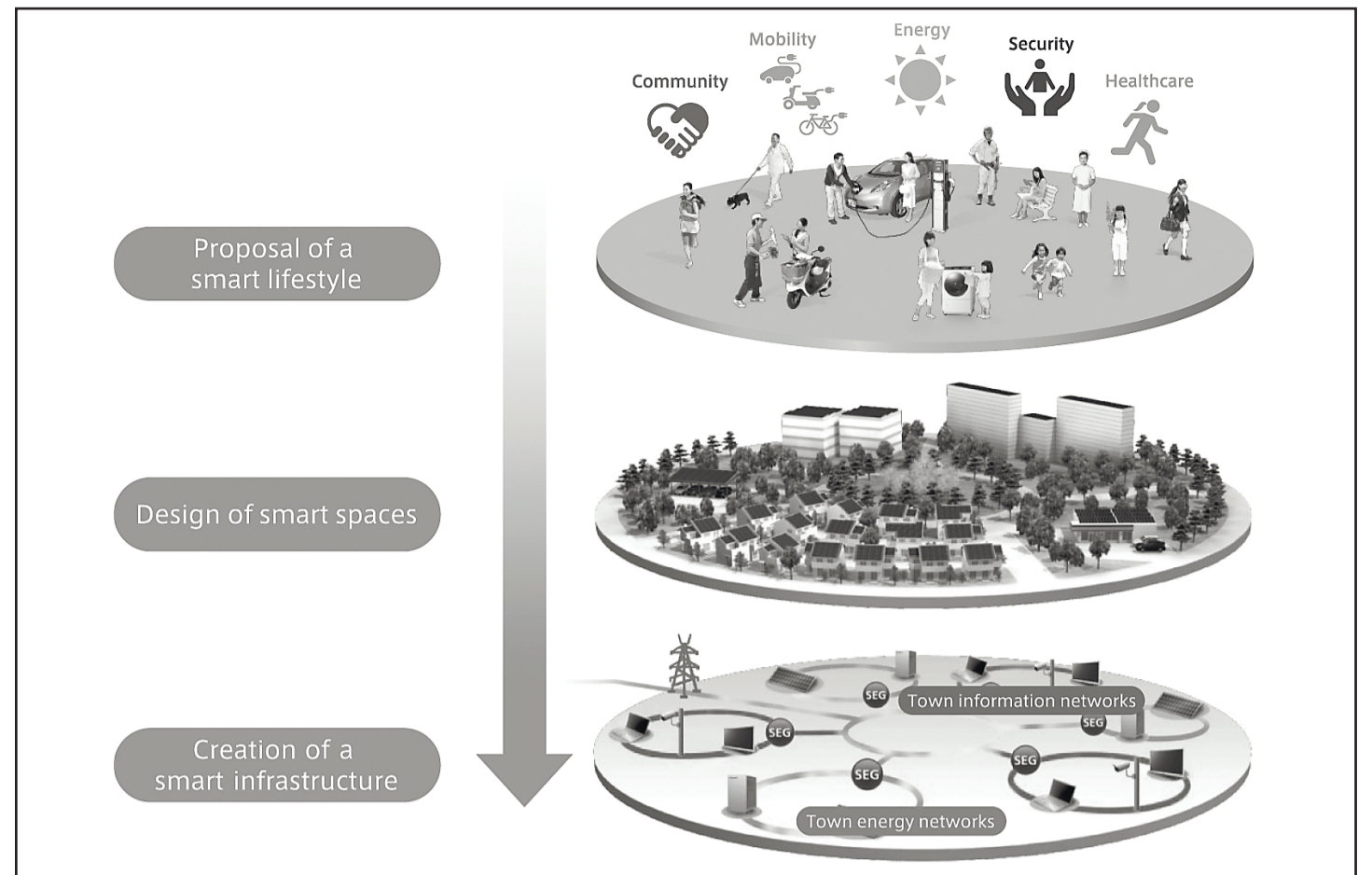
Today, Panasonic is expanding its "smart" solutions beyond the home. In Fujisawa, Kanagawa Prefecture, a city about 50 kilometers from Tokyo, Panasonic is constructing the Fujisawa Sustainable Smart Town, and people are already living there. For this smart town, the company has set very aggressive environmental targets: To reduce CO2 emissions by 70 percent, cut daily water consumption by 30 percent and reach a renewable energy utilization ratio of over 30 percent — all without lowering quality of life. Panasonic's initiatives in this unique town will be showcased at an exhibit set up at the Tokyo International Forum during the IEC General Meeting.

Currently, we see a variety of Smart City projects being developed in many

parts of the world. But to expand Smart City initiatives beyond national borders, it is essential to establish international standards. Consequently, the company is resolved to work in close collaboration with the IEC on this vital task.

Furthermore, to effectively address global issues such as water shortages, increasing greenhouse gases and air pollution, Panasonic is fully engaged in a variety of research and development projects. These new, greener technologies include, for example, water purification systems that incorporate a photo catalysis method as well as artificial photosynthesis systems. By advancing this work, the company is aiming to further contribute to better lives of people and a better society.

**Concept of Fujisawa Sustainable Smart Town: The Fujisawa Sustainable Smart Town is designed to offer a smart and sustainable environment that harmonizes ecology, comfort and peace of mind for the residents. In the graphic, SEG stands for smart energy gateway. PANASONIC CORP.**



## Yaskawa Electric: Leader in factory equipment protocol

Yaskawa Electric Corp. is the developer of Mechatrolink, a communication platform used in industrial automation that was certified by the International Electrotechnical Commission, or IEC, this summer.

Communication platforms, or protocols such as Mechatrolink, are used in computerized management of equipment in a wide variety of factories. The standardization of protocols is important because, otherwise, factory equipment makers would have to produce different equipment to be compatible with different protocols.

Yaskawa Electric began using the term Mechatrolink in late 1990s, Corporate Senior Vice President Hiroshi Ogasawara said.

Prior to that, factories used analog communication between factory equipment and the computers managing the equipment. However, as the equipment and computers' functionality improved, one computer became able to manage many pieces of equipment, requiring cumbersome cabling and causing other problems. To solve



**Hiroshi Ogasawara, senior vice president, Yaskawa Electric Corp.**  
YASKAWA ELECTRIC CORP.

these issues, digitizing the communications platform was necessary.

Equipment makers around the world began realizing the need for a digital communication platform

around the late 1990s, Ogasawara said.

Yaskawa Electric made the Mechatrolink specifications available to the public in 2003, effectively making it an open protocol available to anybody in the world.

The company began lobbying to have Mechatrolink certified by the IEC three or four years before it finally received certification. The protocol underwent strict scrutiny in IEC technical committees before certification.

Mechatrolink commands a 20 to 30 percent global market share in factory equipment management protocol, Ogasawara said.

Meanwhile, Mechatrolink's strength is speed, being specially designed for machines that move at high speeds, he said.

Ogasawara also stressed that Mechatrolink has a reputation of reliability in noise resistance and other areas. Mechatrolink retries automatically when an error caused by noise occurs, he said.

There are two versions of Mechatrolink currently commercially available, with Mechatrolink-II having a top speed of up to 10 Mbps and Mechatrolink-III being able to handle up to 100 Mbps.

Yaskawa Electric and other companies are together developing Mechatrolink-IV, which they hope to launch in a few years, with a speed of 1 Gbps per second.

"Speed is all that matters in communication. Therefore, we will continue to try to make it faster," he said. "We will never be perfect, but we have to continuously try."

Ogasawara also said his company would like to expand Mechatrolink's market share, but he is aware it is difficult for the protocol to dominate the market because there are so many different kinds of factory equipment and levels of speed required.

"If the speed is high, the price is high. The world is full of many different kinds of equipment. After all, customers choose equipment based on user friendliness and cost in addition



**Mechatrolink is a communication protocol used in computer systems to manage robots and other factory equipment.** YASKAWA ELECTRIC CORP.

to communication speed," he said.

There are about 2,000 member companies in the Mechatrolink Members Association, of which about 100 actually make products using Mechatrolink, he said.

Mechatrolink is used in many kinds of machines, such as robots and mounting equipment, which are used

in many kinds of factories.

The Mechatrolink Members Association's headquarters are in Yaskawa Electric's office in Iruma, Saitama Prefecture and the association has seven offices outside Japan, one each in the U.S., Germany, South Korea, India and Taiwan, and two — in Shenyang and Shanghai — in China.



Exterior of the Tokyo International Forum seen from the Yurakucho side. TOKYO INTERNATIONAL FORUM CO.

## Nihon Dempa Kogyo working to standardize crystal device business

Nihon Dempa Kogyo Co., the world's largest maker of quartz crystal devices, has long experience with the global standardization of the International Electrotechnical Commission, or IEC.

In 1985 NDK Chairman & CEO Toshiaki Takeuchi joined the IEC's Technological Committee 49 for the first time. Since then, Takeuchi has been a global leader in the standardization of crystal devices, which are used in smart phones, cars, computers, communication infrastructure, game consoles and many other digital appliances.

"We make components used in circuitry boards, which have many different components. Therefore, size and shape are very important. If they are wrong, the engineers will be in big trouble," he said, explaining why standardization is so important for his company.



**Toshiaki Takeuchi, chairman & CEO of Nihon Dempa Kogyo Co.**  
SATOKO KAWASAKI

While he has contributed greatly to creating standards for crystal devices, he didn't do it just for his company, but for the entire industry.

"If the level of the standard goes up, it will encourage the entire industry to enhance technology, and that will benefit everybody, including makers and users," he said.

He also contributed to developing methods to measure product quality, which is an important marketing strategy for Japanese makers known for the high quality of their products. In other words, Japanese products will not be considered high quality without appropriate quality measurement methods.

"It's important to make products that everybody knows are high quality. At the 78th IEC General Meeting in Tokyo, we don't intend to impose Japanese (technology) on the world. We just want everybody to understand what's good," he said.

In addition, Takeuchi said: "Japanese companies should participate in creating standards, rather than following standards someone else has created. That would benefit not only Japanese companies but also the world, as they would share good technology with the world."

"Global business cannot function without appropriate technological standards," Takeuchi, who began his career with IBM Japan before entering NDK, said.

"The world is small now as countries trade with each other and hold influence over others. Unless there are appropriate technological standards, there will be many (business) conflicts," he said.

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# IEC General Meeting in Tokyo

## Tours, events show city, culture



Tokyo Skytree YOSHIAKI MIURA

The Tokyo Metropolitan Government is welcoming all guests to the IEC, and is happily offering a variety of complimentary programs to let registered guests from overseas enjoy Japan and Tokyo to the maximum.

Those have been specially tailored to provide registered participants with various experiences of Tokyo and its vicinity; from food and culture to other attractions, so that they won't miss the opportunity to enjoy visiting the country rather than only doing business and attending conferences.

Registered guests should sign up for the tours and cultural programs at the "Tokyo City Information Desk" on the first basement floor of the Tokyo International Forum. This desk will open from 8 a.m. to 6 p.m. every day during the meeting from Nov. 4 to 14. Bookings will be accepted on a first-come, first-served basis.

### Tokyo tours

One program offers complimentary bus tours that will run from Nov. 7 to 14.

Each of these half-day tours, which include the services of an English-speaking guide, take people to some of the most popular sightseeing areas in Tokyo. Each of the day tours takes about three hours and the evening tours take two hours.

For example, on Nov. 11 from 9 a.m. and Nov. 14 from 1:30 p.m., a tour bus will make its way to Tokyo Skytree. Attendees will be given a genuine insider's look at the capital's latest icon and world's tallest broadcasting tower at a height of 634 m, in Sumida Ward, where Edo culture thrives to this day.

They will board an elevator that travels at a top speed of 600 meters per minute, taking them to the main structure consisting of a steel skeleton employing steel frames to double the standard strength, to the glass-enclosed 360° observation deck 350 m above the ground.

From here tourists can see many of the famous features of the Tokyo cityscape, including the Rainbow Bridge in the bay area, and, on a clear day, Mt. Fuji in the distance.

On Nov. 11 and 14 from 1:30 p.m., another tour to Sensoji Temple in Asakusa will be offered. The temple is truly a historical haven in modern Tokyo, a gem of the old Edo period (1603-1868).

The capital's most famous and oldest Buddhist temple was founded here in 628. The famed gate *Kaminari mon* (Thunder Gate) is a popular sight with its huge red lantern. After entering the gate, people have the chance to browse 200 meters of stalls selling traditional goods and souvenirs that line the way between the gate and the temple.

It is recommended that people on this tour bring small denominations of yen along for purchasing souvenirs.

Other venues to visit are Hama-rikyu Gardens, Tokyo Tower, Tokyo National Museum, Meiji Jingu Shrine, Edo-Tokyo Museum and Tokyo Night View Tour.

### Cultural Programs

The free cultural programs conducted in English will also give guests an opportunity to get a real feeling for Japanese culture and traditions. Each of these cultural programs will be offered

from Nov. 11 to 14, and each lasts between 1.5 and 2 hours.

Guests can try wearing kimono, flower arrangement, Ukiyo-e, wood-block printing and tea ceremony.

On Nov. 11 and 12, the dress in kimono program will be offered. The kimono is an internationally recognized symbol of Japan with a distinctive T-shape, wide sleeves and a sash called an obi that secures the gown around the body. Kimono is still commonly worn today on formal occasions and men and women alike are welcome to participate in this memorable cultural program.

At the tea ceremony offered on Nov. 14, guests can learn from an English-speaking host how the traditional *sado* (tea ceremony) experience expresses the Zen philosophy of living in the moment. An elaborate ritual performed in a peaceful setting, *sado* offers an exercise in contemplation and conversation as much as an opportunity for refreshment — exquisite utensils and bowls are employed to heighten the aesthetic experience, and sweets are served as accompaniments.



Tokyo Tower in Minato Ward; The tour will visit the main observatory 150 m above the ground. MAYUMI KOYAMA



The gate of Sensoji Temple in Asakusa SATOKO KAWASAKI



Rainbow Bridge crosses Tokyo Bay.



Hama-rikyu Gardens



Registered guests from overseas attending the IEC General Meeting in Tokyo will have an opportunity to participate in cultural programs, including a tea ceremony and kimono wearing. WIKIMEDIA

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## IC cards aid in accessibility

In line with the IEC (International Electrotechnical Commission) meeting, the industry organization Japan Business Machine and Information System Industries Association (JBMA) will hold a special event, "Card with the Support Request," which makes equipment easier to use, at the Tokyo International Forum from Nov. 4 to 14.

Held in the reception area in the business center, this is a demonstration to show solutions to establishing a suitable man-machine interface, in which visitors can experience using a "support request card" which makes machines and equipment easier to use.

As for modern electronic equipment, operations are getting more complicated as functionality improves. While personal computers and smartphones have special accessibility features. However, when aged people and people with disabilities try to choose a support function from some equipment's accessibility features, it is not always a simple task.

As a solution to this, JBMA has proposed storing the special needs information be stored in media (like an IC card) for the person, it becomes possible to perform tasks more easily by sharing the contents of the media to the machine or at the initial processing phase. The machine or equipment can then support the person in executing their task using available features of the equipment suitable for the special needs of the person.

That is, the automatic setting of an individual's exclusive use accessibility features becomes possible. In this demonstration, an IC card and a smart phone (by using "card emulator mode") will serve as the media.

The "support request card" represents an IC card equipped with "Enhanced Terminal Accessibility" (ETA), which is defined as a standard of ISO/IEC 12905: Enhanced Terminal Accessibility using cardholder preference interface. ETA is a set of data elements to be personalized into an IC card, encoding cardholder preferences based on their needs regarding user interfaces such as language preferences and enlarging letters for those who are farsighted.

The card is independent of the physical interface and is applicable to situations where an individual operates card-accepting equipment (cash dispenser, ticket machine, vending

An elderly person who has difficulty reading an ATM screen can use an IC card with ETA, and the card automatically instructs the machine to display larger letters.

At the venue, when inserting the IC card with recorded special needs into the ATM, people can experiment, using imitation money, with the specified languages (Japanese, English, French and German) as indicated by special needs instructions embedded in the card.

Special needs instructions, which make machines easier to use for the elderly or visually impaired, such as making the displayed characters larger, allowing more time to complete an operation or providing verbal instructions are automatically set.

machines).

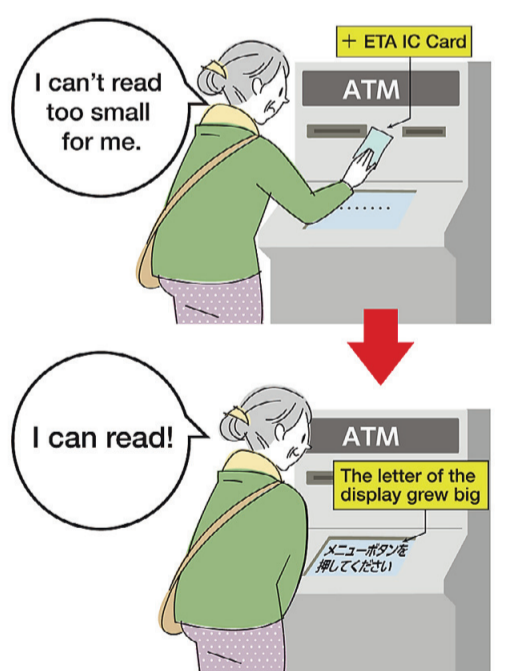
Demonstration attendees will be requested to enter their names and email address at the reception desk. Next, they can choose a contactless IC card, which is used for both digital signage and an electronic restaurant menu. Such a card has been imbedded with a special-needs combination of language and support for their experience. Attendees can borrow more than one card if they want to experience the different combination of special-needs accessibility.

Inside the Tokyo International Forum, they can experience seeing displays change according to the various languages and the support imbedded as special needs on the cards at the digital signage, as the contents of the displays will change depending on the information contained on the card.

IC automated teller machine cards are used extensively around the world now. For the management of the cards in the ATM area of the demonstration, people will receive cards from the presenter directly and return them after the experience.

The restaurants of the demonstration of the electronic menu are in a separate area from the reception desk, but their location and information are

### Automated Teller Machine (ATM)



indicated with digital signage in the venue. When people touch the Card with the Support Request to the reader, the language (Japanese, English, French, German, Chinese and Korean) on screen will change according to the special needs embedded on the card. Also, it automatically sets your preference for the display, including enlarged characters or increased contrast instead of the default characters of the equipment.

After the demonstration, all cards are required to be returned to the collection desk when the demonstration ends. Special souvenir cards will be distributed and visitors will receive a pamphlet describing the demonstration in detail.

Another demonstration will be conducted; Tactile Identifier Mark (TIM). For the cards for this demonstration, visually impaired cardholders can identify the card by touching a braille mark on the lower right of a card. Elderly people and the visually disabled people can feel the mark on the card and feel safe and confident in using the card because they will know the direction to insert the card based on knowing where the braille mark is on the card. This mechanism is based on ISO/IEC 7811-9: Tactile Identifier Mark.