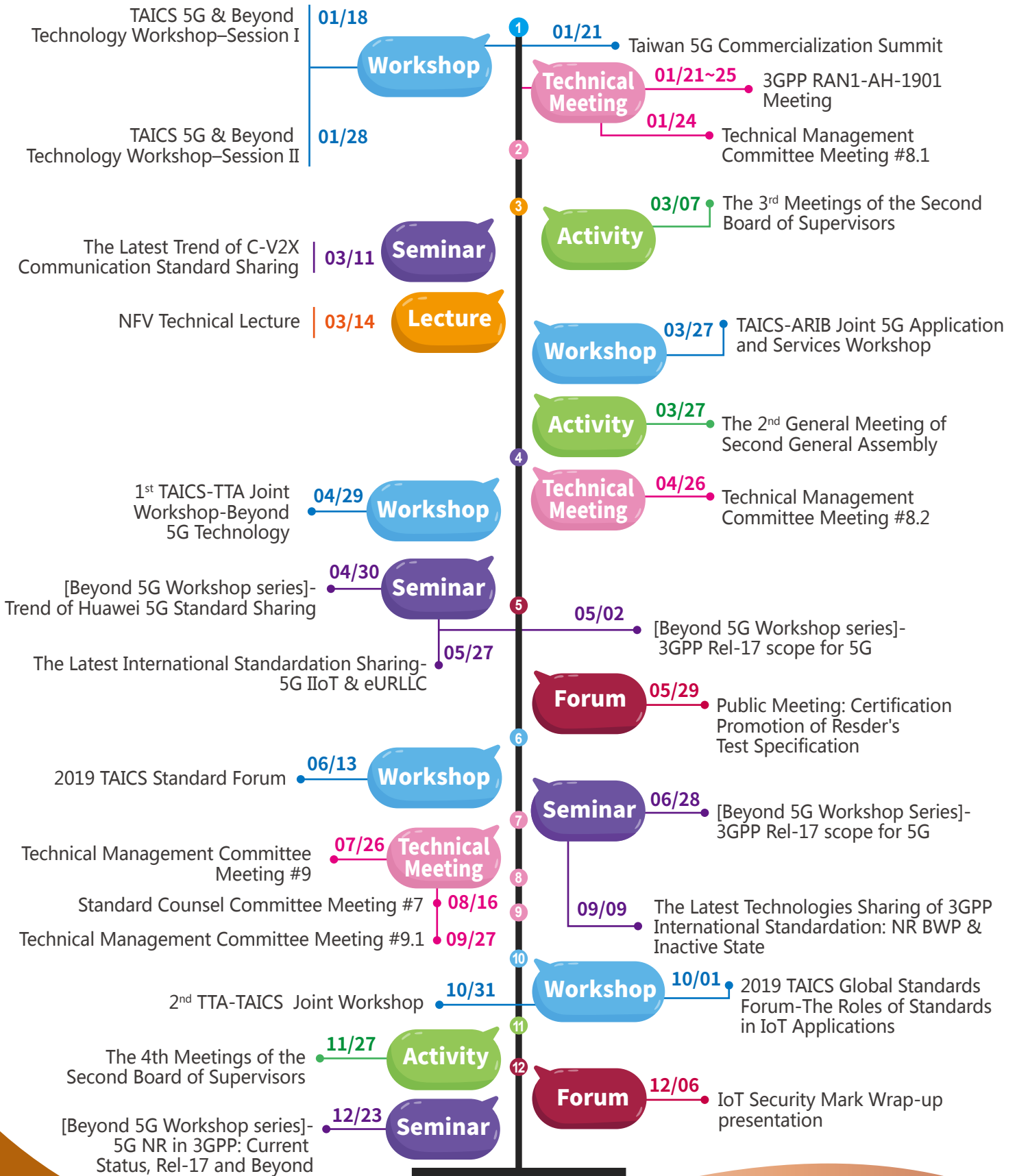




Taiwan Association of Information and Communication Standards

2019

Annual Event



The cover features a central graphic of a globe with a grid of latitude and longitude lines. The globe is rendered in shades of blue and grey. Overlaid on the globe is the text 'TAIICS' in a large, grey, serif font at the top. Below it, '2019' is written in a bold, black, sans-serif font with a white outline. At the bottom of the graphic, 'Annual Report' is written in a bold, orange, sans-serif font with a white outline.

TAIICS

2019

Annual Report

Taiwan Association of Information and Communication Standards

A Message from the Chairman

Thanks to enthusiastic participation from all sides since our establishment in 2015, Taiwan Association of Information and Communication Standards (TAICS) has helped build comprehensive, thorough industry standard establishment processes, and has pro-actively integrated upstream and downstream industries to connect the abilities of information and communication technology companies, successfully assuming the role of a key platform.

Looking at our promotion of information and communication technology standard results, in 2019 we completed 25 industry standards and technology regulations, with many industry standards included in related government regulations. The "Video Surveillance System Security Standard," in particular, was officially published by the Ministry of Economic Affairs (MOEA) as a national standard (CNS 16120). TAICS is also actively involved in communicating with and coordinating government agencies, such as MOEA (including the Department of Industrial Technology, Industrial Development Bureau, Small and Medium Enterprise Administration, and Bureau of Standards, Metrology and Inspection), Ministry of Transportation and Communications, National Communications Commission (NCC), and Ministry of the Interior, as well as connecting legal entities and information and communication technology companies to facilitate practice of industry standards.

On connecting with international standards developing organizations, TAICS worked with MediaTek, Chunghwa Telecom, Far Eas Tone, Foxconn Group, Asia Pacific Telecom Co, the Industrial Technology Research Institute, and the Institute for Information Industry to enable and support standards developing organization 3GPP's hosting of the RAN1 meeting in Taiwan. More than 500 participants attended from around the world, and the event was widely well-received. We also joined together with representatives from MOEA, NCC, and telecom providers and carriers to announce the arrival of Taiwan's 5G age, planning new era developments for the information and communication technology industry in Taiwan, and exercising Taiwan's influence in the global industry. Furthermore, we helped a Taiwan company member achieve the role of 3GPP RAN2 specifications group chairman, a key role in international standards developing organizations that may support new technology standardization work in the global 5G era.





TAICS's international exchanges and cooperation include regular interactions and friendships with various major standards developing organizations. In addition to co-hosting 5G standards workshops with Japan's ARIB and Korea's TTA, we also organized exchange tour groups to Indonesia and Malaysia and signed an MOU with Malaysia Technical Standards Forum Bhd as a basis for forthcoming partnership. In the future, we shall make exchanges on 5G, IoT, and intelligent cities, and jointly promote IoT cybersecurity conformant evaluation, personnel training, and standard trial site collaborations. This is TAICS's first mark of connection with Southeast Asia, and will drive actual industry benefits.

Moving forward, we will spare no effort in promoting industry standards. Internally, we will combine industry strengths and form consensuses, while externally we will leverage critical influence in international standards developing organizations, intensifying collaboration aspects and developing our market globally.

**TAICS Chairman and MediaTek Vice Chairman
Ching-Jiang Hsieh**

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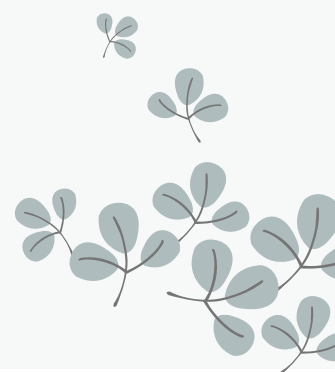
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1

Overview

1.1 Mission

Taiwan Association of Information and Communication Standards (TAICS) is an industry organization founded in June 2015, with the objectives of developing information and communication technology (ICT) standards among Taiwan's industries and engaging them with related international standards to enhance the competitiveness of Taiwan's industry. To achieve such goals, TAICS performs the following tasks:

1

Establish a platform: Establish a platform to facilitate collaborative development of ICT standards among domestic vendors to meet Taiwan's industrial needs;

2

Connect International Standards Organizations: Act as an intermediary for Taiwan in international standardization affairs and strengthen the connections between regional, international standards development organizations;

3

Promote industry standards: Promote the adoption of Taiwan's ICT industry standards by local, regional or international standards bodies.

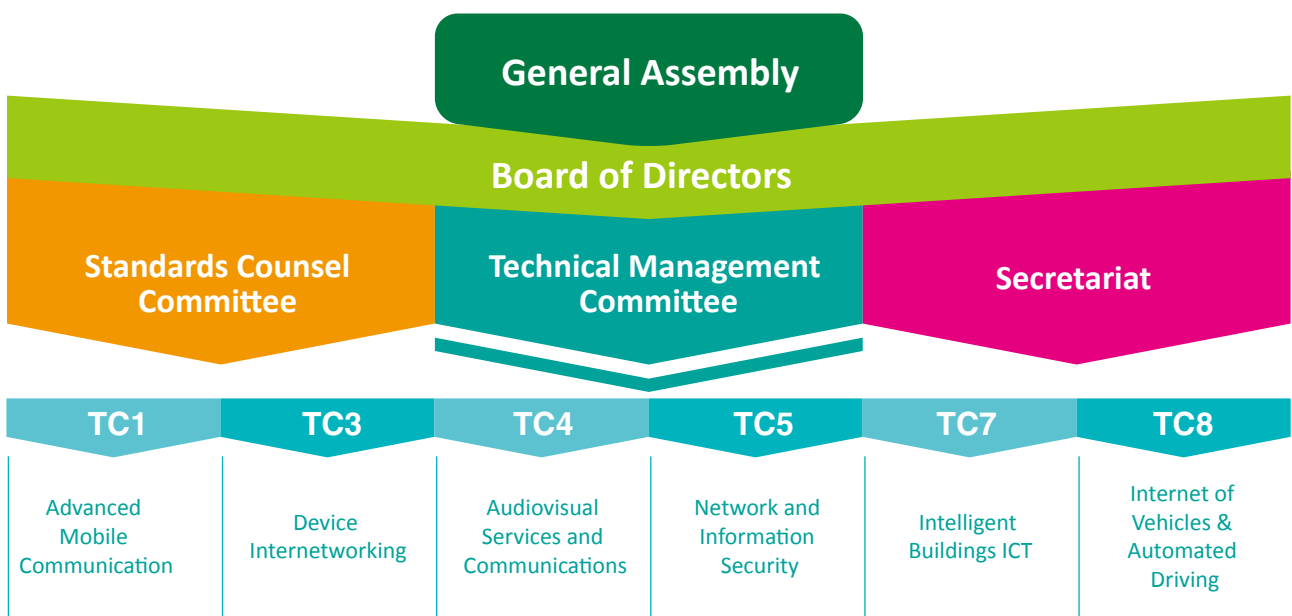
1.2 TAICS Organizational Structure

Three units are established under the Board of Directors: the Technical Management Committee (TMC), the Standard Counsel Committee (SCC), and the Office of the Secretariat.

The Technical Management Committee (TMC), chaired by Albert Chen, Senior Vice President, Inventec Co., is to review the tasks, productivity, personnel appointments, and formation of the technical committees (TC). Also, the TMC coordinates the work among the TCs in the standardization process of the TAICS.

The Standard Counsel Committee (SCC) is to provide concrete recommendations for drafts of standards, standardization plans, and the promotion of standard counseling for TAICS. Dr. Shyue-Ching Lu, Honorary Professor of National Chiao Tung University, is the chair and Dr. Ming-Whei Feng, Vice President and Director General of Smart System Institute (SSI), at Institute for Information Industry (III), is the vice chair.

The Secretary General of the Office of the Secretariat is Sheng-Lin Chou, Chief of Venture Officer, Information and Communications Research Laboratories (ICRL) at Industrial Technology Research Institute (ITRI). The Office of the Secretariat deals with international affairs, partner relations, promotion of achievements, project management, and other administrative tasks. They also provide support for the operation of the TMC and SCC.



(Note: Due to the needs of the TAICS, TC6 has ceased operations in accordance with the decision of the Board on Oct. 26, 2017 and TC2 has ceased operations in accordance with the decision of the Board on Nov. 27, 2019.)

Fig. 1 TAICS Organizational Structure

In addition, 6 Technical Committees (TCs) have been established under the TMC in certain fields in Taiwan according to the urgency of the need to develop technical standards. TCs is where the industry come together to develop ICT industry standards in technical fields.



1.2.1 TC1 Advanced Mobile Communication Technical Committee

The primary focus of TC1 is the new generation of key industry technology in wireless communications, including access technology, network technology, the frequency spectrum of the future, and industry applications. The purpose of this Technical Committee is: The TC1 concentrates the research resources of the domestic industry, academia, and research institutes, and build a consensus, all for the purpose of developing of a new generation of wireless communication technologies. TC1 will become the single channel of communication for Taiwan in related international standard development organizations, e.g. 3GPP, and will thereby promote a connection to related international and regional standards as a precursor to establishing core intellectual properties in the future of international mobile communication standards.



1.2.2 TC2 Network Communications Technical Committee

The primary focus of TC2 is industrial technology for the system integration of the heterogeneous 5G network. This includes the cross-network communications of the next generation heterogeneous networks (5G, 4G, LAN), auto-configuration and performance optimization of network systems, separation of the network control and transmission layers, and network interoperability testing technology. The purpose of this Technical Committee is: To explore heterogeneous 5G network communications technologies, establish technical regulations for cross-network integration, participate in international communication network industry organization activities, and provide technical contributions. Due to the needs of the TAICS, TC2 has ceased operations in accordance with the decision of the Board on Nov. 27, 2019. All the related standard issues are merged into TC1.



1.2.3 TC3 Device Internet Working Technical Committee

TC3 has focused on Internet of Things (IoT) applications and selected fields, such as smart parking, intelligent environmental protection, intelligent cross-equipment monitoring in manufacturing, wireless charging interface standards, and mobile ticketing terminal equipment to specify industry standards and enhance the competitiveness of Taiwan's industry.



1.2.4 TC4 Audiovisual Services and Communications Technical Committee

The goal of TC4 is to consolidate audiovisual services and communications technologies, establish a content-service integration platform, enrich specialty audiovisual channels and content, facilitate development of innovative value-added audiovisual operating and service modes, and drive the development of Taiwan's digital audiovisual software and hardware industry chain.



1.2.5 TC5 Network and Information Security Technical Committee

TC5 promotes the development of industry standards according to the security needs of Taiwan's information communication industry. TC5 keeps track of the latest trends in the region and in the world to promote the development of safe and trustworthy products and services, bolster the influence of Taiwan in international organizations, and facilitate the industry's global market strategy.



1.2.6 TC7 Intelligent Buildings ICT Technical Committee

The mission of TC7 is to develop and promote information communication standards for intelligent buildings. The purpose of TC7 is to act as a platform for communication among industry, government, academia, and research institutions, and for developing and promoting standards with consideration of intelligent buildings information communication standards; to represent Taiwan in activities hosted by the international intelligent building standards alliance and facilitate the development of the intelligent building industry in Taiwan.



1.2.7 TC8 Internet of Vehicles (IoV) & Automated Driving Technical Committee

TC8 was established with the purpose to improve industry competitiveness by developing a common industry standard that follows the global trend in next generation intelligent transportation and the development of automated driving and V2X initiated by the IoV. By creating specifications that is on par with international standards, TC8 can provide Taiwanese companies a reference specification when manufacturing and marketing products. The committee will also serve to introduce foreign technologies that can serve as a reference for the industry, government, academia, and research sectors as they formulate their strategy for the future.

2

Achievements of the TAICS



2.1 Standards Development

With members' eager participation, in 2019 we reached consensus in various sectors through our technical committees and established industry standards and regulations, publishing a total of 25 cases: 11 standards, 10 regulations, 1 technical guide, 1 white paper, and 2 study reports. The results of these standards and regulations were also utilized by related government agencies for creating grant and procurement reference standards.

On advanced mobile communication, we completed the Spectrum Study for 5G Commercial System Report and 5G mmWave Front-End Module Interface White Paper. The Spectrum Study for 5G Commercial System Report is focused on the radio spectrum utilizations and configuration issues relating to IMT-2020, with specific coverage on local and foreign trial, pre-commercial, and commercial provision and operation, as well as the International Telecommunication Union's discussions and decisions about spectrum, and various countries' possible spectrum configuration approaches for policy management and industry development reference. The 5G mmWave Front-End Module Interface White Paper studies 5G mmWave application scenarios and demand, covering the physical layer interface and setup for signal and control, as well as discussions and decisions for various wireless access issues. It also compiles the latest technology, structure, and interface establishment issues within and outside of Taiwan, while consolidating professional opinions from the information and communication technology industry to provide reference for policy

management and industry development, benefiting local and international mobile communication industry growth.

On network communications, we completed the Research on Enterprise Networking Scenarios and Architecture Report. The Research on Enterprise Networking Scenarios and Architecture Report starts with a case analysis of local and foreign business networking and provisioning, and proposes two internal telecom networking architecture types for businesses: standard architecture and private network architecture. Potential business internal networking architecture are analyzed and complied. The study also explores the introduction of multi-access edge computing (MEC), along with the role and applications of self-organization network (SON) within business network architecture. The referential study may help the industry learn more about business networking solutions to accelerate industry development.

On device internetworking, we completed the Test Specification of Readers and Mobile Devices for Ticketing v2 and the Standard of Smart Parking System Data and Interface Requirement. The Test Specification of Readers and Mobile Devices for Ticketing v2 is an amendment of TAICS TS-0019 v1.0 Test Specification of Readers and Mobile Devices for Ticketing, with application sites extending from retail stores to public transportation fields, effectively covering people's everyday life. The specification was created together by 24 related businesses, with the testing, certification, and verification processes now under way. The scope of the Standard of Smart Parking System Data and Interface Requirement includes smart parking system related common data fields, JSON representation architecture, and an application programming interface (API). The common data field is based on the Ministry of Transportation and Communications' parking data standards, published in January 2019, and is at maximum compatibility with current government-issued regulations. Standardizing parking lot information promotes the integration of parking information throughout Taiwan, and facilitates additional extended services such as value-added applications and data analytics.

On network and information security, we completed the Intelligent Bus Telematics System Security Standard and Test Specification and the Intelligent Streetlight System Cybersecurity Standard and Test Specification. The Intelligent Streetlight System Cybersecurity Standard is made up of ten aspects: (1) identity verification, authentication, access control; (2) data confidentiality and integrity; (3) systems integrity; (4) software and firmware update; (5) alerts and recording; (6) known threat security; (7) software applications; and the (8) data availability; (9) privacy protection and (10) cloud platform security that is required for backstage server security monitoring. The intelligent street light industry, as well as intelligent streetlight suppliers and systems integrators, are subject to this standard. Applying the standard will facilitate local testing and certification compliance systems for intelligent streetlight system products, and improve techniques and service quality of information security test providers and test labs, thus broadening information security testing business opportunities.

Furthermore, as member companies received demands for video surveillance product export, we also published the English version of the Video Surveillance System Standard Series and Test Specification, issued in 2018. The Ministry of Economic Affairs (MOEA) declared the IP Camera Standard and Test Specification from the series as national standards in 2019 as well.

On intelligent buildings ICT, we completed the Data Format Standards for Safety and Surveillance Systems in Intelligent Buildings v2. This is the updated version of TAICS TS-0009 v1.0, Data Format Standards for Safety and Surveillance Systems in Intelligent Buildings, and contain data exchange format standards for use between the upper main system integration (MSI) platform and the lower element system integration (ESI) platform for anti-theft security, CCTV surveillance, access control intercoms, parking management, fire monitoring, toxic gas detection, and other systems. Applying these standards will make subsystems integration easier for energy management systems in residential areas, business offices, factories, school institutions, and other buildings, so they may effectively accomplish safety and surveillance data analysis, storage, surveillance, control, and other functions, thus achieving the purpose of surveillance on the premise in safety, comfort, and convenience. Taipei City Government plans on utilizing these standards.

On Internet of vehicles & automated driving, we completed HD Maps Operation Guidelines v2. Based on TAICS TR-0010 v1.0, HD Maps Operation Guidelines, published 2018/12/26, the guidelines give additional regard to unconfined sites and offers principle-based suggestions for corresponding ground control point assisted spacing. The amendment is focused on establishing a comprehensive mapping practice and regulations for the guidelines' applicability and integrity both technically and practically. The guidelines address the mapping industry's quality issues that are caused by "inconsistent work process and precision assessment, lacking unified process reference," and the fact that current mapping process guidelines, whether local or foreign, are not focused on autopilot map precision and requirements. By implementing these guidelines to ensure accuracy, definition, and precision of the map results, environmental change requirements can be accommodated while supporting Taiwan's traffic culture of heterogeneous vehicle types to guarantee high definition map production quality and to effectively connect to autopilot needs.

2.2 TAICS Standards Adoption

IoT information security certification mark initiative result presentation

The National Communications Commission (NCC) and Ministry of Economic Affairs (MOEA) hosted the “IoT information security certification mark initiative result presentation” at Taipei International Convention Center on December 6, 2019, with Taiwan Association of Information and Communication Standards (TAICS) Chairman Ching-Jiang Hsieh as the industry representative and speeches made by Chih-Ching Yang, Deputy Director-General of the Industrial Development Bureau, MOEA, and Chin-Shian Luo, NCC Department Director. Eight IoT information security certificated labs and 22 mark-certified products were awarded at the presentation. Up to January 16, 2020, the total number of certified products was 23, and 20 were still under verification. Over 43 IoT information security mark-certified products are expected to be announced by 2020 Q1.

The whole world is now facing issues on digital transformation, and the demand for vertical IoT application service systems are expected to rise accordingly, bringing on an estimated US\$ 700 billion's worth of business opportunities by 2030. The number of IoT equipment configurations will also surge, and information security issues shall follow closely. The boundless Internet world, while convenient, offers hackers endless opportunities for attack, so no matter what types of IoT equipment are used, one should be highly vigilant on information security protection. Around the world, the EU has started promoting information security certification framework this year, and the US, Japan, Singapore, and Israel have established and are maintaining information and communication technology product verification systems to enhance their information and communication technology product security and ensure the country's leadership in information security.



▲ MOEA Industrial Development Bureau Deputy Director-General Chih-Ching Yang making his speech.



▲ Industry representatives gather together to declare the information security mark's guarantee.

Taiwan led the world in 2015 by selecting “video surveillance systems” as the first line of information security equipment for standard establishment. The scope of these standards have slowly expanded from single-point devices to systems, creating a fine security network. The “Video Surveillance System Security Standard” for web cameras have even become a national standard (CNS 16120). Key infrastructure units under the MOEA, such as for oil, water, and electricity are further in the lead, employing the standards as acquisition product inspection criteria to improve overall security in local application environments and to protect public and national security.

After large-scale information security attacks occurred for years in a row, the IoT information security mark, not just securing us internally, also helped Taiwan’s IoT industry produce quality-assured differentiated products, supporting our businesses in expansion to the international market. To aid mark-certified product manufacturers in receiving more international exposure and attention, TAICS is also planning to promote the IoT information security certification mark along with certified product manufacturers on the ISC WEST(U.S.) trade show from March 17 to 20, 2020. We will present the protective features of Taiwan’s certified products and work together to introduce the IoT information security certification mark to the world.

2.3 International Exchange and Collaboration

■ 3GPP International Standards Meeting (2019.01.21~25) and Taiwan 5G Commercialization Summit (2019.01.21)

TAICS supported the international standards developing organization 3GPP in hosting its RAN1 meeting at Shangri-La's Far Eastern Plaza Hotel, Taipei, on January 21-25 to promote 5G standard establishment. Nearly 500 information and communication technology representatives attended from countries around the world. TAICS spares no effort in participating in and keeping up to date with 3GPP international standards. This 3GPP international meeting was hosted in Taiwan with the assistance and support from MediaTek, Chunghwa Telecom, Foxconn Technology Group, FarEasTone Telecommunications, the Industrial Technology Research Institute (ITRI), and the Institute for Information Industry (III), and was well received by other countries.



▲ TAICS TC1 Chairman I-Kang Fu (MediaTek representative) welcomes participants from around the world during the opening ceremony on the first day of the 3GPP international meeting.

What's more, with the rapid establishment of 5G standards, IoT applications are ready to go, and as a display of Taiwan's determination to advance 5G communications and step into 5G business service development in earnest, TAICS, with guidance from MOEA, co-hosted the "Taiwan 5G Commercialization Summit" with the MOEA Department of Industrial Technology's 5G Office, MediaTek, and Chunghwa Telecom on the first day of the 3GPP meeting (Jan. 21st) at Far Eastern Plaza Hotel's Level B1 East Gate Meeting Room. Telecom carriers from Japan, Korea, and Taiwan were gathered to discuss current 5G application developments.



▲ Launching the 5G era and bringing greater opportunities and expectations to Taiwan's 5G business services through cooperation of different organizations.

Information and communication technology leaders such as Minister of Economic Affairs Jong-Chin Shen, former NCC Chairwoman Nicole T. I. Chan, MediaTek Chairman Ming-Kai Tsai, TAICS Chairman (and MediaTek Vice Chairman) Ching-Jiang Hsieh, Chunghwa Telecom Chairman David Cheng, Non-governmental Advisory Committee Chairman of the Executive Yuan's Digital Nation & Innovative Economic Development Program Tzu-Hsien Tung, and Asia Pacific Telecom Chairman Fang-Ming Lu joined the summit to lay out plans for Taiwan's future 5G development.

TAICS Chairman Hsieh declared in his speech that Taiwan plays a key role in the global information and communication technology industry. With the accumulated technology expertise and foundations laid down in the past, 5G shall be an important development subject for Taiwan. The role of the Association is to leverage Taiwan's strength in the information and communication technology industry to allow Taiwan businesses further participation via 3GPP technology and market platforms. Meanwhile, these standard meetings unite industry ideas and allow different sectors to design overall 5G market development together. Current 5G technology applications were displayed on site, attracting participants' interest and a great deal of media coverage.

■ TAICS-ARIB Joint 5G Applications and Services Workshop (2019.03.27)

Welcoming the new 5G service era, TAICS and Japan's ARIB co-hosted the "TAICS-ARIB Joint 5G Applications and Services Workshop" at Nangang Exhibition Center on March 27th, 2019. The Japanese party arrived to Taiwan led by their Ministry of Internal Affairs and Communications, with participating representatives from 5GMF, ARIB, and Japan's wireless communication industry. Taiwan representatives were TAICS, ITRI, MediaTek, and Chunghwa Telecom. All gathered for discussions and exchanges on future 5G smartphone application services.

During his speech, Director Hsieh said that a regular exchanging and visiting system initiated between TAICS and ARIB when the two signed an MOU in 2016. This was the first time that TAICS hosted the TAICS-ARIB Joint 5G Applications and Services Workshop conjointly with the Smart City Summit & Expo. Besides pro-actively combining business, government, academic, and research efforts, we also look forward to more prosperous growth of Taiwan's future 5G applications.



▲ Event guests and speakers from Japan and Taiwan, including MOEA DoIT Senior Specialist Hao-Chu Lin (4th from the left), TAICS Chairman Ching-Jiang Hsieh (5th from the left), and ARIB Executive Director Shigeki Moriyama (6th from the left).

Our guest, Senior Specialist Lin from MOEA DoIT, also mentioned in his speech that Taiwan's ICT ability is world renowned. Hopefully 5G will allow Taiwan to outgrow existing industry roles and confinements and play a key part in the rising 5C value chain. The surge of demand for vertical application private networks in the 5G age brings us not only advantages in technology breakthrough and cost, but also new opportunities in the vertical applications market. Wireless communication standards and industry exchanges between Taiwan and Japan were initiated in 2016, when MOEA DoIT Director General Ta-Sheng Lo brought TAICS to visit Japan's Ministry of Internal Affairs and Communications and ARIB. In the future we will continue our support of 5G technology development and collaboration issues, and hope to bring enhanced industry results and contributions based on cooperation through learning from and discussion with each other.

■ TAICS Intelligent City and Industry Standards Exchange Tour Group visits

Indonesia and Malaysia (2019.04.14~04.20)

For the past few years, Indonesia and Malaysia governments have been actively promoting intelligent city development. Co-hosting bilateral technology research organizations and standard technology seminars will help Taiwan businesses connect to and open up the South Asia market, initiating reciprocal collaborative opportunities. The TAICS Indonesia & Malaysia Tour



▲ TAICS Deputy Chairman and ITRI Vice President Chang leads tour group on visit with MTSFB Chairman Dato' Ismail Osman and MCMC representatives.

Group, led by Deputy Chairman and ITRI Vice President Pei-Zen Chang, visited intelligent city agencies such as Malaysian Technical Standards Forum Bhd (MTSFB), Malaysian Communication & Multimedia Commission (MCMC), Coordinating Ministry of Economic Affairs, and Jakarta Smart City between April 14th and 20th. They learned about related government policy developments, intelligent city sites and key businesses, and shared Taiwan's intelligent city establishment experiences, communicating Taiwan's industry benefits and possibilities of collaboration. GeoVision, manufacturer of the first certified information security product in Taiwan, also joined in the visit. The official connection promotes TAICS information security standards to Indonesia and Malaysia governments for their approval and procurement of certified products.

■ 1st TAICS-TTA 5G Joint Workshop (2019.04.29)

Greeting the new 5G standard era, TAICS collaborates with Korea's Telecommunications Technology Association (TTA) to host the "1st TAICS-TTA 5G Joint Workshop" together at the III Service Building on April 29th, 2019. This workshop's theme was Beyond 5G Technology. The visiting Korean group, led by TTA's Casey Koo (VP Standard), consisted of industry representatives from LG, Samsung, and Korea 5G Forum. Taiwan representatives included TAICS, ITRI, MediaTek, Foxconn, and National Taiwan University, who came together to present and exchange information on the latest 5G standard developments. The event was sponsored by both the "CHT Pilot Team for the Taiwan 5G Alliance" and Korea 5G Forum. Following the two's execution of an MOU in late January, 2019, this marks another actual support of Taiwan and Korea's 5G technology exchange and collaboration by respective standards developing organizations.



▲ Event guests and speakers from Korea and Taiwan, including TTA's Casey Koo (6th from the right), TAICS Secretary General Sheng-Lin Chou (5th from the right), and TAICS Standard Counsel Committee Chair Shyue Ching Lu.

In addition to presenting the Rel-17 standards and establishing future standards developing organization work, proceeding 5G projects were also discussed in depth during the event. Looking forward, besides continuous support of 5G technology development and collaboration issues, TAICS and TTA hope to bring enhanced industry results and contributions based on cooperation through learning from and discussion with each other.

2019 TAICS Global Standard Forum (2019.10.01)

On October 1st, TAICS hosted the 2019 TAICS Global Standard Forum at NTUH International Convention Center, inviting standards developing organization from different countries to the annual event to exchanges on IoT standard technology.



▲ Standards developing organization representatives and speakers from around the world join Taiwan industry guests in the 2019 annual TAICS event for exchanges regarding IoT standard technology applications.

The forum's theme was "The Roles of Standards in IoT Applications", and standards developing organization representatives from the US, Japan, Korea, and India joined to present related IoT applications. We hope that the event may offer guidance on prevailing international issues like IoT and 5G applications, and thus facilitate the connection of Taiwan companies with the international market to be informed of the latest standard applications and IoT collaboration business opportunities. The event was co-hosted with MOEA Bureau of Standards, Metrology and Inspection, assisted by ITRI, supported by Chunghwa Telecom Research Institute, III, and the TEEMA-Communications Industry Alliance, and sponsored by GCOM Technologies Co. and Airoha Technology Corp.



▲ TAICS Deputy Chairman Pei-Zen Chang (right) and MTSFB Chairman Dato' Ismail Osman (left) sign bilateral MOU.

Execution of the TAICS and MTSFB MOU was also scheduled at the same time, with TAICS Deputy Chairman and ITRI Vice President Pei-Zen Chang and MTSFB Chairman Dato' Ismail Osman as representative executors. In the future, the two organizations will make exchanges on 5G, IoT, and intelligent cities, and jointly promote IoT cybersecurity conformant evaluation, personnel training, and standard trial site collaborations.

Up to now, with government support and industry assistance, TAICS has signed MOUs with international standards developing organizations such as ETSI, ARIB, TTC, TTA, and TSDSI, with regular 5G standards development collaborations and exchanges ongoing. This MOU signing with MTSFB can be seen as the first mark of connection with Southeast Asia. We will be bonding further with Malaysia to drive actual industry benefits.

2nd TTA-TAICS Joint 5G Workshop (2019.10.31)

TAICS and TTA co-hosted this workshop at Seoul, Korea, in the end of October, and by invitation, Secretary General Sheng-Lin Chou led a group consisting of representatives from MediaTek, Chunghwa Telecom Research Institute, ITRI, and National Taiwan University to participate.

The Korean party started the workshop with an introduction of the latest 5G spectrum issues that were currently discussed by the International Mobile Telecommunications (IMT), an organization under the International Telecommunication Union (ITU), in the World Radiocommunication Conference (WRC). Mainly pointed out was that during WRC-19, IMT will establish 26/39GHz as a 5G communications wave band, and countries around the world will determine their own 5G wave bands according to the WRC's decision.

Samsung reported the possible direction of 3GPP R17 Multiple Input Multiple (MIMO), while LGE shared the topic directions in 3GPP R17 Sidelink/Vehicle to Everything (V2X). Hopefully these introductions to MIMO and Sidelink/V2X will help Taiwan and Korea find a technology focus which aligns with standard promotion. Korea's Electronics and Telecommunications Research Institute (ETRI) also explained the preliminary 6th generation (6G) goals that are under way.

The workshop allowed industry, academic, and research institutes from Taiwan and Korea to exchange information on their respective development and planning for communication and standard establishment. Representatives from both sides explained current 5G technology issues while presenting and discussing plans to learn about each other's technology directions, and will maintain regular communication in the future, with further collaborations to be scheduled. With collaboration between organizations, we look forward to enhancing both parties' R&D ability or raising our voices within international standards developing organizations, thus maintaining appropriate technology competition and partnership.



▲ TAICS Secretary General Sheng-Lin Chou states that TAICS and TTA will start regular exchange of 5G information in 2019, which is extremely beneficial for future cooperations development.



▲ TTA Chairman Park JaeMoon thanking the TAICS technological tour group's return visit during welcoming speech.

2.4 Additional Activities

■ 2019 TAICS Standards Forum- Industry AI Application Development Trends (2019.06.13)

With the approaching of the AI age, in order to efficiently keep up to date with current industry trends, TAICS hosted the “2019 TAICS Standards Forum- Industry AI Application Development Trends” on June 13th, inviting experts from various sectors to look into the evidenced results of AI technology development and industries’ AI applications in Taiwan from a global industrial perspective. Supported by ITRI and sponsored by EgisTec, the forum invited representatives



▲ Industry representatives from various sectors were invited to the 2019 TAICS standards forum to commence the AI age’s future development.

from various industry, academic, and research institutes, including the National Center for High-Performance Computing (NCHC), Microsoft Taiwan, MediaTek, BravoAI, Chunghwa Telecom, Machvision, EgisTec, Chain Sea Information Group, Taipei Medical University, ITRI, and Acer, to share global AI industry application trends and examples in smart business, smart manufacturing, smart healthcare, and smart transportation. Focusing on both broadness and depth, the forum helped the local industry stay updated in the latest AI industry trends and guided future strategies.

In his speech, TAICS Secretary General Sheng-Lin Chou talked about “AI industrialization” and “industry AI application” being the two main issues in AI industry development. Although AI industry applications are still under development, Taiwan has unlimited potential for AI application in industries. Besides leveraging the advantages of our own IC designing industry,



▲ Members participated actively in the 2019 TAICS Standards Forum, as people were highly interested in AI issues and pursued discussion with the speakers even after the event.

Taiwan may also combine key technology in niche sectors such as smart manufacturing, smart business, smart healthcare, and smart transportation to build new industry communities.

Looking forward, TAICS will continue to guide industries in keeping up with the latest trends and standards, and in the future also expects to combine various key technologies and find niches for the information and communication technology industry. Following our goal of becoming a platform for industry communication, we will maintain discussion of different new standard issues and exercise better influence on the industry.



Appendix: Membership

NO	COMPANY	WEBSITE
1	MEDIATEK INC.	http://www.mediatek.com/zh-TW/
2	WISTRON NEWEB CORPORATION	http://www.wnc.com.tw/index.php?lang=tw
3	ACER INCORPORATED	http://www.acer.com.tw/ac/zh/TW/content/home/
4	HON HAI PRECISION IND. CO., LTD.	http://www.foxconn.com.tw/
5	ARCADYAN TECHNOLOGY CORPORATION	http://www.arcadyan.com/home.aspx
6	ASUSTEK COMPUTER INC.	https://www.asus.com/tw/
7	CHUNGHWA TELECOM CO., LTD.	http://www.cht.com.tw/
8	KEYSIGHT TECHNOLOGIES INC.	http://www.keysight.com/main/home.jsp?cc=TW&lc=cht
9	BUREAU VERITAS CONSUMER PRODUCTS SERVICES (HONG KONG) LIMITED, TAOYUAN BRANCH	http://www.bureauveritas-adt.com/
10	AUDEN TECHNO CORP.	http://www.auden.com.tw/
11	INVENTEC CORPORATION	http://www.inventec.com/
12	NATIONAL CHUNG-SHAN INSTITUTE OF SCIENCE AND TECHNOLOGY	http://www.ncsist.org.tw/csistdup/main/Default.aspx
13	ACCTON TECHNOLOGY CORP.	http://www.accton.com.tw/
14	GEMTEK TECHNOLOGY CO., LTD.	http://www.gemtek.com.tw/

NO	COMPANY	WEBSITE
15	ROHDE&SCHWARZ	http://www.rohde-schwarz.com.tw/PrecompiledWeb/Index.aspx
16	TATUNG CO.	http://www.tatung.com.tw/b5/index.asp
17	ACBEL POLYTECH INC.	http://www.acbel.com.tw/index.aspx
18	UNITECH ELECTRONICS CO., LTD.	http://tw.ute.com/index.php?rbu=2
19	HWACOM SYSTEMS INC.	http://www.hwacom.com/
20	KBRO CO. LTD.	http://www.kbro.com.tw/mso_index.aspx?B=1
21	SATELLITE TELEVISION BROADCASTING ASSOCIATION R.O.C	http://www.stba.org.tw/
22	TAIWAN DIGITAL TELEVISION COMMITTEE	http://www.dtv.com.tw/index.aspx
23	TREND MICRO INC.	http://www.trendmicro.tw/tw/index.html
24	ONWARD SECURITY CORPORATION	http://www.onwardsecurity.com/
25	SPORTON INTERNATIONAL INC.	http://www.sporton.com.tw/
26	DEKRA TESTING AND CERTIFICATION CO., LTD.	http://www.dekra.com.tw/index.aspx
27	INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE	https://www.itri.org.tw/
28	INSTITUTE FOR INFORMATION INDUSTRY	http://www.iii.org.tw/Default.aspx
29	TAIWAN MOBILE CO., LTD.	https://www.taiwanmobile.com/index.html
30	TAIWAN INTELLIGENT BUILDING ASSOCIATION	http://www.tiba.org.tw/
31	ZYXEL COMMUNICATIONS CORP.	http://www.zydel.com.tw/zh/homepage.shtml
32	CHENG UEI PRECISION INDUSTRY CO., LTD.	http://www.foxlink.com.tw/index_c.php
33	HUA YAN MEDIA LTD.	N/A
34	SERCOMM CORPORATION	http://www.sercomm.com/home.aspx
35	NATIONAL CHIAO TUNG UNIVERSITY	http://www.nctu.edu.tw/
36	TAIWAN SECOM CO., LTD.	http://www.secom.com.tw/
37	HTC CORPORATION	http://www.htc.com/tw/
38	NATIONAL CHUNG CHENG UNIVERSITY	http://www.ccu.edu.tw/
39	INFORMATION SERVICE INDUSTRY ASSOCIATION OF R.O.C	http://www.cisanet.org.tw/
40	ELECTRONICS TESTING CENTER, TAIWAN	http://www.etc.org.tw/default.aspx
41	WEEMA	http://www.weema.com.tw/
42	ANRITSU COMPANY INC.	http://www.anritsu.com/zh-TW/Home.aspx
43	ELITEGROUP COMPUTER SYSTEMS CO. LTD	http://www.ecs.com.tw/ECSWebSite/Index.aspx?MenuID=0&LanID=1
44	KINGDOM COMMUNICATION ASSOCIATED LTD.	http://www.kca.com.tw/tw/
45	GCOM TECHNOLOGIES CO.	http://www.gcomtw.com/index.php
46	TAIWAN INSTITUTE OF ECONOMIC RESEARCH	http://www.tier.org.tw/
47	FAR EASTONE TELECOMMUNICATIONS CO., LTD.	http://www.fetnet.net/cs/Satellite/Corporate/coHome

NO	COMPANY	WEBSITE
48	TELECOM TECHNOLOGY CENTER	http://www.ttc.org.tw
49	NATIONAL INSTRUMENTS	http://www.ni.com/zh-tw.html
50	TAIWAN BROADBAND COMMUNICATIONS	http://www.tbc.net.tw/AboutUs
51	NATIONAL TAIWAN UNIVERSITY	http://www.ntu.edu.tw/
52	NATIONAL CHENG KUNG UNIVERSITY	http://web.ncku.edu.tw/bin/home.php
53	ASIA PACIFIC TELECOM CO., LTD.	http://www.aptg.com.tw/my/index.htm
54	TAIWAN TELEMATICS INDUSTRY ASSOCIATION	http://www.ttia-tw.org/
55	PANASONIC TAIWAN	http://www.panasonic.com/tw/
56	TAIWAN ELECTRICAL AND ELECTRONIC MANUFACTURERS' ASSOCIATION	http://www.teema.org.tw/index.aspx
57	SENAO NETWORKS, INC.	http://www.senao.com/Taiwan/
58	NATIONAL CENTRAL UNIVERSITY	http://www.ncu.edu.tw/
59	ALPHA NETWORKS INC.	http://www.alphanetworks.com/
60	NAN YA PLASTICS CO.	http://www.npc.com.tw/j2npc/zhtw/company_highlights.jsp
61	EGIS TECHNOLOGY INC.	https://www.egistec.com/zh-hant/
62	TAIWAN-CA. INC.	https://www.twca.com.tw/Portal/Portal.aspx
63	SYNOLOGY INC.	https://www.synology.com/zh-tw
64	GAPERTISE INC.	http://www.gapertise.com/
65	TAIWAN TELECOM INDUSTRY DEVELOPMENT ASSOCIATION	http://www.ttida.org.tw/
66	ICP DAS CO., LTD.	http://www.icpdas.com.tw/index_tc.php
67	ARCRAN INFORMATION TECHNOLOGY INC.	http://www.arcran.com/tw/
68	NATIONAL TAIPEI UNIVERSITY	https://www.ntpu.edu.tw/chinese/
69	ALLION LABS, INC.	http://tw.allion.com/
70	NATIONAL DONG HWA UNIVERSITY	https://www.ndhu.edu.tw/bin/home.php
71	SGS TAIWAN LTD.	https://campaigns.sgs.com/zh-tw/taiwan/sgs-in-taiwan
72	TÜV RHEINLAND TAIWAN LTD.	https://www.tuv.com/taiwan/tw/
73	CHICONY POWER TECHNOLOGY CO., LTD.	https://www.chiconypower.com/zh-tw/
74	AUTOMOTIVE RESEARCH TESTING CENTER	https://www.artc.org.tw/
75	TAIWAN POWER RESEARCH INSTITUTE	https://tpri.taipower.com.tw/default.htm
76	DELOITTE TOUCHE TOHMATSU LTD.	https://www2.deloitte.com/tw/tc.html
77	ASKEY COMPUTER CO.	http://www.askey.com.tw/
78	DYLAN - TEK	https://www.facebook.com/dltek/



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Taiwan Association of Information and Communication Standards