VCCI DAYORI

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Contents

Contribution

The Story of Me, EMC, and VCCI
(and Life's Twists and Turns)

Masateru Tagami

In March 2023, I left my post at the VCCI Council after a tenure of over 16 years. Here, I'd like to look back on my involvement in the EMC business since my first manufacturing job fresh out of college, and the events leading up to my employment at the VCCI Council.

When I first joined Company F, I was assigned to a department that was developing memory devices for electronic switching systems. This was during a transition period from conventional wired logic circuits using relays to control systems using electronic circuits and software. At the time, memory devices used a plane structure with a woven 3-mm-diameter ferrite core, where single bits were visible to the naked eye. Before long, the age of IC memory chips had arrived, and memory volume had expanded from 1 kbit to 4 kbit. During this period, I participated in the design and engineering of memory devices of D10 electronic switching systems and DIPS-11 Model 30 for NTT. Later, when the emergence of 16 kbit elements led to memory components being mounted on CPU circuit boards, memory-device engineers lost their jobs. While some of those engineers went into sales, I became a component specialist working on LSI deployment assessments.

After that, circumstances led to my assignment as point of contact for product-safety-standard (UL) accreditation tests conducted on switching systems for the US market. My main responsibilities were to create documents for UL accreditation, assist with on-site testing, and coordinate with test supervisors from the UL Santa Clara office who would visit several times a year. I also attended inspections of factories manufacturing accredited equipment. I had to read and understand standards documents in English, and sometimes even debate interpretations with test supervisors, so the job itself was a training course in the English language. I was also asked by an equipment manufacturing department to assist in their compliance with the FCC Part 15 standards. This was when I first learned that digital circuits emitted electromagnetic waves whose radiation levels were regulated by the law. I learned everything from the basics: electromagnetic interference standards, regulation, measurement methods, countermeasure design methodologies, and so on. I visited development departments to assist and provide guidance on EMC countermeasures and measurement, and was involved in the Bellcore NEBS-standard testing of switching systems for central offices. During this time, my senior colleagues and I were able to collaboratively translate and publish1) a US reference book on EMC countermeasure design methodologies.

The VCCI Council (known at the time as the "Voluntary Control Council") was founded at the end

of 1985. I was fortunate to have been working with EMC at my company job around that time. I started working with VCCI when I joined the Public Relations Subcommittee, after which I moved to the International Relations Subcommittee. Due to the background work of EMC and product safety at product development departments, it was a pleasure, both personally and professionally, to have monthly meetings where I could exchange information with industry peers at other companies.

After a roughly ten-year stint in EMC and product safety, I was transferred to the design quality control department. At the time, it was popular to obtain ISO 9001 certification, so I was going around assisting at various business divisions and affiliated companies involved with switching systems. As part of this work, I took business trips to a switching-system-manufacturing joint venture in Suzhou, China. Had this been a simple manufacturing company, ISO 9002 would have been enough, but because the company name included the words "Technology Company", they had been recommended to also obtain ISO 9001 certification. For this reason, I visited them four times to assist the engineering department, which led to me being assigned to the manufacturing department as the quality control manager. However, one year later, just when I'd gotten used to my job and life there, I was asked to return to Japan immediately by my new supervisor. While I was grateful, having been prepared to spend five years overseas, my return ended up being postponed by a year so I could assist with a yearlong plan to move switching-system manufacturing from Japan to the Suzhou factory.

The original reason for my return lay in the excessively strict CISPR 24 standard. The immunity testing standards for radiated interference from telephones were so strict that when CIAJ (the Communications and Information Network Association of Japan) bought and tested telephones on the Japanese, US, and European markets, very few products passed. One reason these standards were so strict was the lack of involvement from expert CIAJ committee members in the decision, so CIAJ had been looking for someone knowledgeable in both EMC and English; hence, they appointed me. In the seven years leading up to my leaving Company F, I participated in the CISPR committee. During that time, I was able to relax restrictions in the relevant part of the CISPR 24 standard, and participate in deliberations on new standards such as CISPR 32 and CISPR 35. In addition to my position at CIAJ, I had returned to my position at VCCI's International Relations Subcommittee.

Around one year before I left Company F, the new Chair of the Market Sampling Test Subcommittee, with whom I'd collaborated at CIAJ and the International Relations Subcommittee, was looking for a new Liaison Secretariat. Because the previous Chair's company was based in Osaka area, so was the Liaison Secretariat, which had apparently caused some hiccups. When I enthusiastically volunteered for the position, Company T, who had been taking on secretariat work for a domestic CISPR committee, was also looking for a successor, so I joined Company T, taking on both jobs at once. I stayed with Company T for four years, after which I worked at the VCCI Council to focus on my secretariat duties at the Market Sampling Test Subcommittee.

My activities at the Market Sampling Test Subcommittee involved streamlining operations and alleviating member workloads while maintaining the standard of sampling tests. This included promoting a transition from actual-equipment tests of registered Class A equipment to document inspections, and increasing the number of actual-equipment tests of registered Class B equipment through purchasing rather than borrowing. In addition to this, I helped improve the Product Conformity Registration System. After more than 16 years at VCCI, I have now finished handing over my duties to my successor and retired from the VCCI Council before my 77th birthday. People often say that life has its "twists and turns", and that has certainly been my experience. Although I have rarely been able to choose the content of my work, the end result has been a happy one. I feel I have been truly fortunate in my career.

[References]

1) Hirokazu Deguchi, Masateru Tagami: "EMC design of printed circuit", Ohmsha, Ltd. (1st ed. 1997, revised 2nd ed. 2010)
Hirokazu Deguchi, Takehiro Takahashi, Masateru Tagami: "Electromagnetic Compatibility Engineering" TDU Press (2013)

Masateru Tagami

1969 Graduated from the School of Engineering, Kyushu University, majoring in communication engineering. He joined Fujitsu Ltd., working on the development and engineering of memory devices, product safety compliance and EMC countermeasures, and design quality control.

1998 - 1999 Jiangsu Fujitsu Telecommunications Technology Co,. Ltd (Suzhou City)

2000 - 2006 Worked as a CISPR SC/I expert, EMC and product safety compliance

2006 Left Fujitsu
In December that same year, he joined TELECOM ENGINEERING CENTER, where he served as Liaison Secretariat of the Market Sampling Test Subcommittee, VCCI Council and Secretariat of a domestic CISPR working group.

2011 Secretariat of the Market Sampling Test Subcommittee, VCCI Council (until March 2023)

Committee Activities

●Board

Date	November 28, 2023
Reported items	Reported item Report on the activities of the first half of FY 2023

●Steering Committee

Date	November 15 and December 20, 2023
Agenda items	● Agenda item 1 Report on the activities of the first half of FY 2023 (draft) ● Agenda item 2 "Guidance for Rules for Voluntary Control Measures" VCCI 32-1-J:2023 (draft) ● Agenda item 3 "Guidance for Preparing Test Report (for VCCI-CISPR 32)" VCCI 32-1-A:2023 (draft) ● Agenda item 4 Subcommittee business plans for FY 2024 (draft)
Continuing agenda items	● Agenda item 4
Decisions and reported items	● Agenda items 1 to 3 Approved ● Reported item 1 VCCI Proposal for Organized Session Tutorial APEMC 2024 Okinawa ● Reported item 2 Report on the EMC Europe 2023 Symposium ● Reported item 3 Report on the REDCA business trip ● Reported item 4 2024 Technical Symposium program (draft) ● Reported item 5 Report on VCCI Seminar 2023 (available for on-demand viewing) ● Reported item 6 Subcommittee (Technical, International Relations, Market Sampling Test, Public Relations, and Education) activities from October to December ● Reported item 7 Secretariat work (such as member entry and withdrawal trends, the number of compliance verification reports, and income and expenditure)

●Technical Subcommittee

Date	October 12 and November 29, 2023
Agenda items	● Agenda item 1 On the Technical Subcommittee's planned activities for FY 2023 ● Agenda item 2 Creation of guidance documents on uncertainty of measurement using hybrid antennas ● Agenda item 3 Verification of voltage/current conversion ratio and impact of EUT impedance on transformer-type AANs when measuring conducted emissions ● Agenda item 4 Examination of evaluation methods for sites using 18 GHz to 40 GHz ● Agenda item 5 Activities for standardization of mains cable termination conditions ● Agenda item 6 Revision to "GUIDE ON PREPARING TEST REPORT" ● Agenda item 7 2024 technical symposium ● Agenda item 8 Tutorial held by VCCI at APEMC 2024 Okinawa
Continuing agenda items	● Agenda items 1, 2, 3, 4, 5, 6, and 7
Decisions and reported items	● Reported item 1 Report on participation in EMC Europe 2023 (see page 16) ● Agenda item 8 Decision for Tutorial held by VCCI at APEMC 2024 Okinawa

●International Relations Subcommittee

Date	October 11, November 8, and December 13, 2023
Agenda items	● Agenda item 1 Survey on trends in EMC standards ● Agenda item 2 On the International Relations Subcommittee's planned activities for FY 2024 ● Agenda item 3 Preparation for the FY 2023 International Forum
Continuing agenda items	● Agenda items 1 and 2
Decisions and reported items	● Agenda item 1 Updates to the website for surveys on trends in world EMC standards on October 11, November 8, and December 13 ● Agenda item 2 Confirming and finalizing the International Relations Subcommittee's planned activities for FY 2024 ● Agenda item 3 Mailing-service distribution of the first report on the FY 2023 International Forum

●Market Sampling Test Subcommittee

Date	October 12, November 13, and December 14, 2023	
Agenda items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3	Market sampling test report Document inspection report Planned activities (draft) for FY 2024
Decisions and reported items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3	Up to 99 products were decided upon to be purchased and borrowed for FY 2023 sampling tests, and tests are being performed. The results show 1 new product failure, which is being investigated by the applicable member. For one product that failed in the first half of the fiscal year, an additional test report was provided by the applicable member, after which the product passed. In the FY 2023 document inspection, 42 documents were selected, of which 37 (excluding cancellations) were decided upon, whose inspections are now underway. Discussion and approval of planned activities (draft) for FY 2024

●Public Relations Subcommittee

Date	October 13, November 10, and December 1, 2023	
Agenda items	● Agenda item 1 ● Agenda item 2 ● Agenda item 3	CEATEC 2023 Vision for regional cities Planned activities and budget draft for FY 2024
Continuing agenda items	● Agenda item 3	
Decisions and reported items	● Reported item 1 ● Reported item 2	Report on participation in CEATEC 2023 held in October (see page 20) Reports on Takamatsu English Rose Vision held for two weeks in October, Okayama Momotaro Vision held for one week in November, and the VCCI Council's broadcasting of the 30-second PR video. The video is planned for broadcast at Fukuoka JR Hakata City Vision from December 18 to 24.

●Education Subcommittee

Date	October 19, November 13, December 6, and December 18, 2023
Agenda items	● Agenda item 1 Status of preparations for FY 2023 education and training ● Agenda item 2 Confirmation of task force progress in FY 2023 ● Agenda item 3 Results of FY 2023 education and training ● Agenda item 4 Proposal of planned activities for FY 2024
Continuing agenda items	● Agenda items 1, 2, 3, and 4
Decisions and reported items	● Agenda item 1 – Applications are now open for "The level up of the EMI measurement technique" (held on January 26) and "EMI measurement instrumentation uncertainty (MIU)" (held from February 1 to 2). ● Agenda item 2 – Of the three task forces (TFs), two have been reflected in seminars, and TF 2 (Discussing the enhancement of calculation exercises and explanations of "EMI measurement instrumentation uncertainty (MIU)") is now preparing to hold a seminar. ● Agenda item 3 – "The basic technique of EMI measurement (held on October 6)" was held online (livestreamed) for 12 attendees, who received attendance certificates. – Regarding "The basic of electromagnetic waves, EMI measurement technique" (classroom lectures from November 30 to December 1, hands-on training from December 7 to 8) and "The basic of electromagnetic waves, EMI measurement technique" (classroom lectures from November 30 to December 1, hands-on training from December 14 to 15): Classroom lectures were available online (livestreamed), and hands-on training was held in person at TELEC and KEC. There were a total of 15 attendees, who received completion certificates. ● Agenda item 4 – Four seminars have been planned for FY 2024. The following lectures will be held: (i) The basic technique of EMI measurement [planned for the first and second half of the fiscal year] (ii) The basic of electromagnetic waves, EMI measurement technique [planned for the first and second half of the fiscal year] (iii) The level up of the EMI measurement technique [planned for the second half of the fiscal year] (iv) EMI measurement instrumentation uncertainty (MIU) [planned for the second half of the fiscal year]

●Registration Committee for Measurement Facilities

Date	October 16, 2023
Agenda items	● Reviewed the results of deliberations by the Measurement Facility Examination WG.
Decisions and reported items	Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 25 companies Radiated emission measurement facilities below 1 GHz: 14 AC-mains-ports-conducted emission measurement facilities: 11 Wired-telecommunication-port-conducted emission measurement facilities: 12 Radiated emission measurement facilities above 1 GHz: 13 Applications returned with comments: None Applications carried over to the next meeting: None
Date	November 22, 2023
Agenda items	● Reviewed the results of deliberations by the Measurement Facility Examination WG.
Decisions and reported items	Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 27 companies Radiated emission measurement facilities below 1 GHz: 18 AC-mains-ports-conducted emission measurement facilities: 12 Wired-telecommunication-port-conducted emission measurement facilities: 12 Radiated emission measurement facilities above 1 GHz: 14 Applications returned with comments: None Applications carried over to the next meeting: None
Date	December 18, 2023
Agenda items	● Reviewed the results of deliberations by the Measurement Facility Examination WG.
Decisions and reported items	Conformity certified (including cases certified with qualification comments after checking of supplementary papers): 20 companies Radiated emission measurement facilities below 1 GHz: 15 AC-mains-ports-conducted emission measurement facilities: 12 Wired-telecommunication-port-conducted emission measurement facilities: 13 Radiated emission measurement facilities above 1 GHz: 9 Applications returned with comments: None Applications carried over to the next meeting: None

36th instalment

A Brief History of the Research of Masamitsu Tokuda, Serial Contributor to VCCI Dayori (Part 1)

From my birth to the events leading up to my optical fiber cable research

Masamitsu Tokuda

1. Foreword

Since the July-2015 edition (No.117) of VCCI Dayori, I have been publishing a series of contributions on international EMC organizations and their international and domestic standards, which I plan to conclude with the October-2024 issue (No.154). International EMC organizations include CISPR (International Special Committee on Radio Interference), which relates to VCCI's voluntary control, and TC 77 of the IEC (International Electrotechnical Commission), which creates basic EMC standards and common standards. There is also the ACEC (Advisory Committee on Electromagnetic Compatibility), whose aim is to promote mutual coordination among CISPR, TC 77, and the IEC product committees, including: TC 9 (Electrical equipment and systems for railways), TC 22 (Power electronic systems and Equipment), TC 47 (Semiconductor devices), TC 62 (Medical equipment, software, and systems), TC 65 (Industrial-process measurement, control and automation), and TC 69 (Electrical power/energy transfer systems for electrically propelled road vehicles and industrial trucks). Regarding the protection of telecommunication equipment from electromagnetic interference, there is SG 5 (Environment, climate change and circular economy) of the ITU-T (ITU Telecommunication Standardization Sector). Additionally, for automobile immunity measurement methods, there is TC 22 (Road vehicles) of the ISO (International Organization for Standardization). Here, I will explain the overall structure of these organizations along with their international and domestic EMC standards and stipulation methods.

This is Part 1 of my series of articles outlining a brief history of my research as the author of the aforementioned serial contributions.

2. From my birth to the events leading up to my optical fiber cable research

(1) My birth in Manchuria and the Soviet Union's declaration of war against Japan

I was born on October 19, 1944 in Qiqihar, Manchuria, and am now (as of December 2023) 79 years old. Since World War II ended on August 15, 1945, I was a wartime baby, born in a rural part of Manchuria that is no longer a territory of Japan. The town of Qiqihar was on the border with the Soviet Union, so if I'd been living there until the war's end, I might have ended up a stranded orphan living in China. Fortunately, at the end of the war, we were living in Mukden (now Shenyang), so we were able to return to Japan in June 1946. However, because my father was a soldier stationed at the Manchurian railway, he was interned in Siberia by the Soviet Army for about five years, returning to Japan in the

summer of 1950. At the dawn of August 9, 1945, near the end of World War II, the Soviet Union declared war on Japan, breaking the Soviet-Japanese Neutrality Pact. About 580,000 Japanese in Manchuria, the northern Korean peninsula, southern Sakhalin, the Kuril Islands, and other regions were interned, and my father was one of them. Interned Japanese were forced into grueling labor, which about 10% did not survive, but thanks to my father's physical fitness combined with good luck, he made it safely back to Japan. While my impression of the Soviets was far from positive due to my father's internment, the 2022 unilateral invasion of Ukraine by Russia, the main constituent of the Soviet Union, only worsened this impression. My father has always liked new things, often buying products that had just appeared on the market, and I suspect this enthusiasm for novelty is what brought him to Manchuria. I believe that this temperament, some of which he passed on to me, has served me well in my career researching unexplored fields. The physical and emotional strength, and good luck I inherited from him might have played a role in my success in the two fields of optical fiber cables and EMC.

(2) Our return to Japan, and life in Iwamizawa

When the remaining four members of our family - my mother, elder sister, elder brother, and me – returned to Japan in June 1946, the first place we lived was in the suburbs of my father's hometown of Iwamizawa, Hokkaido. At first, I lived in a separate house from my mother and siblings, with childless relatives on my father's side, so I grew up lavished with affection. Meanwhile, my brother lived with relatives of my father who had many children, and he tells me he was bullied quite a lot. This was just after the war, when families all over Japan were struggling to put food on the table even for themselves, so it must have been quite difficult for them to care for us in our father's absence. After that, my mother's younger brother, who was renting a tenement house with just two rooms, let the four of us move into one room, his own family living in the other. Even now, I'm grateful to them for taking us in. That tenement house had once been a brothel, but by the time we were living there, it was so old it looked ready to collapse. At the time, however, the surrounding buildings were just as old, so we didn't feel miserable – that was just normal life.

(3) My father's return to Japan and my enrollment in university

In the summer of 1950, the year before I entered elementary school, my father returned from his internment in Siberia. I still vividly remember those times. At first, my father worked in carpentry with my uncle (my mother's younger brother), after which he was luckily hired at the city hall's Sorachi branch where my mother was working as a cleaner. Thus, he began working as a local public servant in Hokkaido. Over time, my father earned recognition for his work, rising up the ranks with every transfer. In 1953, he was transferred from Iwamizawa to Muroran, and in 1958, from Muroran to Wakkanai, while I transferred schools along with him. I went to four different elementary schools and two junior high schools, though I was at least able to attend Wakkanai High School from 1960 all the way until

graduation in 1963. Later that same year, I successfully enrolled in Hokkaido University, and attended their Sapporo campus from Zenibako, Otaru, where my aunt on my father's side lived. Looking back, I made good progress in my studies, though when my father first became a local public servant, his career prospects were still murky, and it was doubtful whether I'd even get into high school. After he was transferred to Muroran, high school became a likely prospect as my sister and brother made it into high school themselves. After my father's transfer to Wakkanai, even tertiary education became a possibility, and my brother enrolled in Hokkaido University. I was allowed to follow suit, but only on the condition that I helped run my aunt's clothing store. This meant I had to travel to the wholesale district in southern Otaru to stock up on inventory and collect money from customers to whom we sold on credit. While I advanced straight from Wakkanai High School to Hokkaido University, I was one of only three students who were able to that year. Of course, none of us got into even more prestigious universities like Tokyo University. At Wakkanai High School, we didn't have mock exams to help us practice for Hokkaido University's entrance exams, so the only way to test our abilities was to take the general mock exams held by Hokkaido University students. It really was a lonely struggle studying for the entrance exams alone. When I transferred from Muroran to Wakkanai South Junior High School, my homeroom teacher, Mr. Shinya, was so worried I'd be bullied for my frail-looking physique in a fishermen's town like Wakkanai that he recommended I join the *judo* club. I decided to join since Mr. Shinya himself was its manager, but whenever the older third-years were practicing, I was their punching bag - those were tough times! They beat me up so much I had a bit of memory loss, but I got a lot stronger physically, which proved useful later in life. I also learned how to land properly when thrown, which has saved my life on more than one occasion.

(4) Life as a student at Hokkaido University

At Hokkaido University, I started out in liberal arts, and studied hard until the fall of my second year, when my final major would be decided. Thanks to my efforts, I was able to enter the Electronics Engineering Department, the most popular of the sciences. Meanwhile, for my extracurricular club activities, I joined the rather new cycling club, which was only four years old at the time. That meant I had to buy a bicycle, so early in the summer break of my first year, I got a part-time job on a team of geological surveyors for the construction of Taisetsu Dam at Sounkyo Gorge in eastern Asahikawa. We used dynamite to trigger small earthquakes, whose vibrations were detected by multiple sensors to survey the geological features. It was a hard job hiking up dirt mountain trails lugging reels of detection cables for the sensors in a mountaineering backpack, but it paid well, and I was eventually able to buy my first bicycle. Later that summer break, I joined the cycling club's bicycle tour around eastern Hokkaido. Our 20-day itinerary took us from Sapporo to Cape Erimo in Hidaka and all the way to Nemuro, then swinging around Notsuke Peninsula, Lake Mashu, Lake Akan, Obihiro, and Takikawa, returning to Sapporo. We traveled in a formation of over 20 cyclists, staying the night at community halls, temples, and youth hostels. We cooked most of our dinners ourselves. I'd never been on a school

trip before, not even in high school (as I was busy studying for my university entrance exams), so this was my first time on a group tour, and it was a fantastic learning experience. On summer break in my second year of university, I went on a group cycling tour of northern Hokkaido, leaving from Sapporo and passing through Asahikawa, Kitami, Rausu, Abashiri, Wakkanai, Rumoi, then back to Sapporo. In my third year of university, the cycling club toured southern Hokkaido, but I couldn't join them. Instead, I planned and executed my own bicycle tour coinciding with my third-year job-hunting activities (such as attending company orientation sessions) over spring break, from Osaka down the San'yōdō (and ancient province and road roughly corresponding to the San'yō region). I would then cycle all the way around Kyushu. This time, I would be alone, not with a group, so my father was against it, but I was determined to go. Unfortunately, my second day after leaving Osaka, I collided with a mini truck in Fukuyama, which sent my flying about 10 meters. Thanks to my *judo* training, I did a somersault and landed on my feet. The bike was thrown about 5 meters, leaving the front wheel twisted into a crescent-moon shape, and the fork holding the front wheel bent backwards. The cause of the accident: I'd been cycling alongside a large truck on San'yōdō as a mini truck in the opposite lane tried to make a right turn. The mini truck didn't see me beside the large truck, so it turned right after passing the truck, hitting me in the process. Believe it or not, the driver of the mini truck happened to work at a bicycle repair shop, and the crash occurred right in front of that repair shop. I asked them to replace the front wheel and bend the fork back into shape, and headed for Onomichi, where I was staying the night. The next day, I went back to the shop to find my bicycle fully repaired, and resumed my journey from the site of the accident towards Kyushu. The accident had left my balance a little shaky, and I had to concentrate to avoid veering off the center line, but I somehow made it all the way around Kyushu according to plan. I've never told my father about the accident.

(5) My job-hunting failures and enrollment in graduate school

On summer break in my fourth year of university, I did some on-the-job training in semiconductor elements at an electrical testing laboratory in Tanashi. The owner, Dr. Tarui, took a liking to me and offered me a job on the condition I pass the national civil service exam. Unfortunately, I underestimated the exam and barely studied for it, causing me to fail and lose out on the job opportunity. In the fall after the corporate job-hunting season, I hurried off to take an exam for an electrical manufacturer, but I failed, that, too. Flummoxed, I consulted with Prof. Maeda, my graduate research advisor, who recommended I take the second round of exams for graduate school. I passed, but Prof. Maeda knew I was in a financial bind, and told me about a scholarship offered by NTT. Thanks to Prof. Maeda's support, I received the NTT scholarship, and was able to get through my graduate-school research without having to work part time. Then, in 1969, I got a job at NTT. Again, it was thanks to Prof. Maeda's firm support that I landed that job, and I'm sincerely grateful to him to this day.

(6) My graduate research and research for my master's at Hokkaido University

I did my graduate research and research for my master's under Prof. Maeda, who lectured in solid-state electronics in Hokkaido University's School of Electronics Engineering, Faculty of Engineering. My research was on the magnetic properties of electrodeposited permalloy thin films, and its purpose was to measure and clarify the magnetic properties by forming permalloy layers electroplated on buffed copper plate. At first, I was conducting experiments under the guidance of the assistant lecturer Dr. Mukasa, but Assistant Prof. Sato took over as lecturer partway through, so I was able to receive guidance from both. The lectures used Charles Kittel's *Introduction to Solid State Physics*, and we attended seminars as well. While Prof. Maeda was at the university, he strongly urged me to conduct experiments, but I preferred to spend time with two of my peers, Sato and Inagaki, holding secret study sessions on condensed-matter theory. Most scholarly texts I have at home were bought back when I was studying for my master's; I've hardly bought any since I joined NTT's laboratory[1].

(7) Joining NTT's Electrical Communications Laboratories

I completed my master's degree in Electronics Engineering at the Graduate School of Hokkaido University in 1969, and immediately went on to join NTT's Electrical Communications Laboratories. I was assigned to the Ibaraki branch of a radiation and telecommunication line materials lab in Tokai Village, Ibaraki Prefecture. A facility of the Atomic Energy Research Institute is also located in Tokai Village. Around the time of its opening, NTT Electrical Communications Laboratories, the lab of a telephone and telegraph public corporation, had just founded its Ibaraki branch in 1960 to research radiation. The director of the radiation and telecommunication line materials lab was Dr. Yoshida, and assistant director Dr. Kato was researching low-loss polyethylene used in insulation material for coaxial cables in the CS-36M submarine coaxial cable system. I was assigned to Dr. Kato's research team. The Ibaraki branch was researching component materials at the time, so they didn't have any staff with electrical backgrounds. I was the first electrical expert they hired.

(8) Developing a tan δ measuring instrument for polyethylene

The subject of my research, polyethylene, is a dielectric, whose dielectric properties are expressed in terms of permittivity ε and loss; that is, tan δ. The outer conductive diameter of a submarine co-axial cable is 38.1 mm, with an insulator thickness of 14.85 mm, and a high transmission band reaching just under 36 MHz. This means that the tan δ of polyethylene can affect the transmission properties of co-axial cable. For this reason, Dr. Kato's research team was researching how to minimize the tan δ of polyethylene. My role in the research team was to develop a measuring

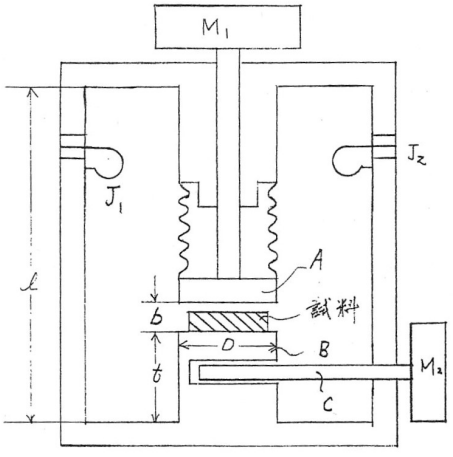

Fig.1 Structure of a semi-coaxial cavity resonator[2]

instrument that could measure tan δ accurately up to high frequencies of about 200 MHz. At the time, Ando Electric had released measuring instruments that could measure a dielectric's tan δ up to several MHz, but there was no device on the market that could measure tan δ at higher frequencies. Therefore, I was developing[2] a measuring instrument using a semi-coaxial cavity resonator shown in Fig.1 that could measure permittivity ε and tan δ from several to several hundred MHz. This research not only taught me the methodology of measuring instrument development and piqued my interest in the field, but also proved highly influential to subsequent research on the topic.

(9) Research on new transmission media

In 1971, the Ibaraki branch of NTT's Electrical Communications Laboratories was promoted to the NTT Ibaraki Electrical Communications Laboratory, and established its Telecommunication Line Research Department and Component Materials Research Department. I was assigned to the Telecommunication Line Lab of the Telecommunication Line Research Department, where I would find myself tackling new research topics. Let me explain the story behind that. The director of the Telecommunication Line Lab was Dr. Marubayashi from the Transmission System Research Department. Dr. Marubayashi's motto was "Something New", so he would encourage us to find new research topics to pursue. My assignment was to research new topics in transmission media, and find the optimal one. At the time, the strongest media for relay transmission was a standard co-axial cable consisting of a bundle of 18 standard co-axial cores with an outer diameter of about 10 mm, which could form nine transmission systems. Back then, the latest relay transmission system using a standard co-axial cable that was being studied for commercialization was the PCM400M relay transmission system, which could transmit on about 5,700 phone lines simultaneously[3]. Because one standard co-axial cable could form nine transmission systems, the system allowed transmission on a total of about 51,000 phone lines. For media to be considered "new transmission media", we needed to find something especially promising that could accommodate transmission on over 200,000 phone lines, four times that of standard co-axial cable. In this research, I was in charge of investigating new transmission media and conducting estimates of applicable transmission systems. I worked with Mr. Nitta, who'd been assigned by the business department to research and estimate construction methods and costs for new transmission media, and Mr. Hamade, also assigned from the business department as an AC engineer. The research took about one and a half years. We researched the millimeter-waveguide transmission system, which the laboratory was considering for practical use, and six types of transmission media. These media included thick co-axial cables with twice the outer diameter of standard co-axial external media (from the standard 10 mm to 20 mm), thin co-axial cables, and Clogston cables. Unfortunately, we couldn't find any transmission media that could beat the standard co-axial cable. However, this research made one thing clear: Systems that could not use existing underground conduits, and systems that at first seemed economical, with their larger capacities, but either could not use or were not economical to use in small-capacity system configurations, could not beat standard-co-axial-cable transmission systems.

(To be continued in the next issue)

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(1) Masamitsu Tokuda: "From embryotic Optical-Fiber-Cable Development To the Establishment of EMC Research On Communication Devices: My Thoughts As a Commercialization Researcher", Japan Management Association, pp.1-40 (2023)
(2) Masamitsu Tokuda, Masaaki Kawase: "Low-Loss Dielectric Material Measuring Instruments in VHF-UHF", IEICE, CPM72-32 (1972)
(3) Tetsuya Miki, Hiroyuki Kasai, Haruo Yamaguchi: "Properties of Experimental 400-Mbps Co-Axial PCM Relay Transmission", Electrical Communication Laboratory technical journal, Vol.23, No.4, pp.653-671 (1974)

Masamitsu Tokuda

1967 Graduated from Electronics Engineering Department of Hokkaido University
1969 Completed Electronics Engineering, Faculty of Engineering, Graduate School of Hokkaido University
Joined NTT, assigned to the Electrical Communications Laboratories
1987 Leader of EMC Study Group, NTT Telecommunication Networks Laboratories
1996 Professor of Electric Engineering Department, Kyushu Institute of Technology
2001 Professor of Electronic Communication Department, Musashi Engineering University
2010 Professor emeritus of Tokyo City University
Visiting co-researcher of the Graduate School of Frontier Sciences, The University of Tokyo

Major prizes received
1986 Merit award – IEICE
(on the design theory and evaluation method for optical fiber cables)
1997 Information communication merit award by MPT
(on EMC technology development)
2003 Industrial standard merit award by the minister of METI
2004 IEICE fellow
2007 Promoted to IEEE fellow

Report on the EMC Europe 2023 Symposium

Technical Subcommittee

This is a report on the EMC Europe 2023 Symposium.

- Venue: The Congress Centre of the Qubus Hotel in Kraków, Poland
- Trip duration (participation in the symposium): September 5 (Tue) to 6 (Wed), 2023
- Academic conference period: September 4 (Mon) to 8 (Fri), 2023
- Participants: Nozomi Miyake, Technical Subcommittee (NEC Corporation)
  Hidenori Muramatsu, Technical Manager (VCCI Council)

1. Overview of EMC Europe 2023 Symposium

The symposium was held in face-to-face format, as was the case last year.

The VCCI Council participated to conduct surveys on the submission of technical papers, as an activity of the Technical Subcommittee.

There were 629 participants, with four keynote presentations, 19 oral presentations, 14 workshop sessions, and 218 paper presentations (165 oral presentations, 53 poster sessions), an increase of about 50 since last year. 25 countries and 1 region presented papers, with 40 from Germany, 21 from Japan, 20 from the Netherlands, and 18 from Austria.

2. Keynote overview

Session: Keynote 2

- Title: Current and Future Challenges in Automotive EMC
- Presenter: Dr. Marco Klingler
- Country: France
- Affiliation: Stellantis, TECH / E&S / AEES / SCIC, EMC Expert
- Overview: In this lecture, the presenter reported on important EMC issues in three challenges faced by automobiles today (carbon neutrality, advanced connectivity, autonomous driving). EMC issues are becoming extremely complex; for example, in addition to existing emissions and immunity, there is human exposure to electromagnetic waves, immunity to in-vehicle antennas, EMC in automobiles, protection of radio receivers, compliance in residential, commercial, and light industrial environments, and protection from ESD. For autonomous driving, the future goal is to ensure a safety level of 10^{-9} to 10^{-11} simultaneous failures of hardware, data, and software per hour. The presenter suggested that to tackle these challenges, international standards will need to be amended to comply with new demands and tests. We will need to establish more robust EMC designs (optimization by dedicated tools, machine learning, and simulation methods), and develop and verify new testing methods and testing facilities. Measures in other areas such as wireless communication, safety, and cybersecurity will also be

needed.

3. Technical Session overview

(1) Measurement Techniques and Instruments 1

- Title: Comprehensive Evaluation of Novel Light-QP and Statistical-QP Methods for Superharmonic Disturbances from EV Chargers
- Presenter: Mr. Alexander Gallarreta
- Country: Spain
- Affiliation: University of the Basque Country (UPV/EHU)
- Overview: For low-frequency conducted emissions (9 to 150 kHz) from EV chargers, the new Light-QP and Statistical-QP measurement methods were proposed. Because laboratories are expected to use the current CISPR-16-1-1-based QP measurement method, AANs will need to be used. The two proposed measurement methods were compared to the current measurement method, and results showed that similar results to the method based on CISPR 16-1-1 could be achieved while reducing computation costs and memory resources in measurement devices by over 90%. The presenter reported that the Light-QP and Statistical-QP measurement methods are planned to be discussed as potential new methods for the 9- to 150-kHz bands in IEC SC77A WG9.
- Impressions: CISPR 32 is also considering 9- to 150-kHz conducted emissions, which might affect the outcome of discussions around these proposed new measurement methods. We will be keeping an eye on trends in SC77A WG9 discussions.

(2) In-situ Electromagnetic Emissions Measurements: Challenges and Solutions for Assessing Atypical Equipment

- Title: Efficient In situ Assessment of Radiated Emissions using Time-Domain Measurements
- Presenter: Mr. Jordi Sol´e-Lloveras
- Country: Spain
- Affiliation: EMC Electromagnetic BCN, S.L.
- Overview: Regarding efficient in-situ assessments of time-domain measurements of radiated emissions, the presenter reported the results of verification using solar-power generation systems, passenger planes, pallet washers as EUT. The frequency ranges for radiated emissions were 150 kHz to 30 MHz, and 30 MHz to 1 GHz.

  Findings showed that ambient levels change over time, increasing the likelihood of large differences between two consecutive radiated interference waves from the EUT. It is important to identify a variety of noise sources in the spectrum and minimize impacts on the operation of nearby electronic and electrical equipment. FFT-based receivers with real-time functionality are effective in this measurement. Due to the relatively high field strength of broadcast and communication services in the surrounding environment, certain bands are well above the limits. According to CISPR 11, to determine whether the EUT complies with emission requirements when conducting measurement in these circumstances, the field strength of frequency bands that exceed limits must be compared to see whether the strength increases during EUT operation.

- Impressions: This was informative on what precautions to take when conducting measurements in actual in-situ experiments. In-situ test standards are currently being discussed, and we hope to stay abreast of trends in CISPR's discussions in the future.

(3) In-situ Electromagnetic Emissions Measurements: Challenges and Solutions for Assessing Atypical Equipment

- Title: Experimental Evaluation Result of Preliminary Measurement for In-Situ Test Method in CISPR 37
- Presenter: Mr. Kimihiro Tajima
- Country: Japan
- Affiliation: NTT Advanced Technology Corporation
- Overview: Among the ISMs subject to CISPR 11, discussions are underway to establish CISPR 37 as a new standard for measuring large and high-powered devices that are difficult to measure in measurement facilities such as anechoic chambers and open sites. The presenter reported on testing methods under discussion and their associated challenges. He reported that measurement requires further discussion, including measurement distance, height scan, azimuth, EUT operation mode, background noise, and reflections from the surrounding environment, and reported issues such as mains cables of incompatible thickness with current probes for conducted emissions. Another issue is the cost of testing, because this is not a formalized test, and each piece of installed equipment has to be measured. He reported that these issues will need to be considered in future discussions of CISPR 37.
- Impressions: Standards on in-situ testing are stipulated in "In-situ measurement" VCCI 32-1-5:2016 in the interpretation of the VCCI Council's Rules for Voluntary Control Measures. Considering this, we will keep an eye on trends in discussion of CISPR 37 going forward.

(4) Poster Session 1

- Title: Radiated Noise Measurement from Multiple LED Lights Using Reverberation Chamber
- Presenter: Dr. Ifong Wu
- Country: Japan
- Affiliation: National Institute of Information and Communications Technology (NICT)
- Overview: The total radiated noise power from multiple LED lights was investigated using RVC. Results showed that the frequency spectrum of total radiated noise power changed according to the position of the LED light on the duct rail. It was also observed that increasing the number of LED lights did not show linear increases in the noise power spectrum. The band power of total radiated noise across a variety of frequency ranges was also assessed, and noise power included in the bandwidth of all kinds of wireless systems susceptible to interference was estimated. The spectrum density of total radiated noise power was integrated across a variety of frequency ranges and changes in the band power of total radiated noise were compared with the number of LED lights. Reported results showed that integration across particular frequency ranges caused total radiated noise to increase linearly with the number of LED lights.

- Impressions: In its discussions, CISPR is reviewing limits and measurement methods. Under CISPR 32, emissions testing is performed in systems consisting of multiple pieces of equipment. This presentation was informative on the verification methods and limit calculations for equipment consisting of more than one of the same module or interface.

4. Exhibition overview

While the focus was on trends in companies that have already been participating in the symposium thus far, 43 companies exhibited this year; 10 more than last year.

5. Impressions

The results of our survey showed there were fewer sessions on mobile communications such as 5G, of which there were many last year. There were more than the usual number of sessions on EMC in automobiles including self-driving.

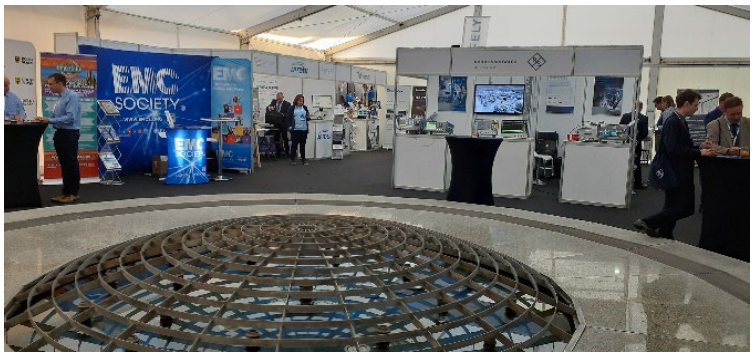
Sessions on multimedia equipment frequently covered in-situ and RVC measurement. In radiated emissions testing using semi-anechoic chambers, the maximum EUT size during measurement using the 10-m method is 5 m, and larger EUTs are tested in situ. For this reason, in-situ measurement methods are being discussed. Regarding RVC, due to the high costs associated with investment in semi-anechoic chamber installation, a cheaper method of radiated emissions measurement using RVC has been proposed. Additionally, in view of equipment using wireless functionality on high-frequency bands, assessment of measurement facilities and measurement devices and limits are being considered for the 18-GHz-to-40-GHz band.

Considering this, we felt the Technical Subcommittee's activity topics needed to include in-situ, RVC, and 18-GHz-to-40-GHz band verification methods, and emissions measurement methods for large EUTs, which are being discussed for the next CISPR-32 revision and for new CISPR topics.

As for trends in the content of presented papers, many proposed new measurement methods and novel research results while comparing and verifying simulated and actual measurement results to test the validity of simulations.

Going forward, we will focus on trends in the discussion of CISPR-32 revisions and submit papers at APEMC Okinawa, IEEE EMC+SIPI, and EMC Europe in 2024. Topics will include research results such as on the verification of mains-cable termination devices and modified AANs for improving measurement-result reproducibility.

Entrance



Exhibition venue

Report on CEATEC 2023

Public Relations Subcommittee

This is a report on the CEATEX 2023 exhibition.

Exhibition name: CEATEC2023
https://www.ceatec.com/ja/

Makuhari Messe venue

- Exhibition period: October 17 (Tue) to 20 (Fri), 2023
- Number of exhibitor companies: 684 companies and organizations (compared to 562 in 2022)
- Number of exhibitor companies from overseas: 195 companies and organizations from 21 countries and regions (compared to 146 from 27 countries and regions in 2022)
- Number of exhibitor startups and academic research institutions: 153 companies and organizations (compared to 81 in 2022)
- Number of new exhibitor companies: 305 companies and organizations (compared to 266 in 2022)
- Number of visitors: 89,047 (compared to 81,612 in 2022)

Until FY 2022, the exhibition was also held online as a measure against the spread of the COVID-19 pandemic, but this year's online portion consisted only of exhibitor information pages showcasing the attractions of actual booths in the venue.

1. Introduction to CEATEC

Held by the Communications and Information Network Association of Japan (CIAJ), the Japan Electronics and Information Technology Industries Association (JEITA), and the Computer Software Association of Japan (CSAJ), CEATEC is Asia's largest international exhibition for IT technology and electronics.

At this year's exhibition, conferences were also held at the venue for the first time in four years.

The VCCI Council exhibited a booth in the Advanced Technology Area.

2. Makuhari Messe venue

The booth showcased materials such as membership information, three types of panels, and introductory videos about the VCCI Council.

VCCI Council booth

●Materials:

- Introduction to the VCCI Council (triple-folded pamphlet)
- Information on VCCI enrollment
- Annual Report 2022
- Guide to the VCCI Council's education and training
- Scope of the international standard CISPR 32

●Introductory videos (Japanese):

Videos on the three topics "Do you know VCCI mark?", "Acquiring the VCCI mark", and "Scope of VCCI" (approx. 7 minutes)

●Booth visitors:

The booth received 260 visitors during the exhibition period. Of these, 202 completed the questionnaire.

Desk calendars for 2024 and ball-point pens were handed out to the visitors as novelties.

3. Online: Exhibitor information page

We published our page according to the designated format.

Mockup of the exhibitor information page
The header image is only in Japanese.

4. Impressions

The venue was bustling with visitors, and many visitors stopped by the VCCI booth.

Many people did not know about the VCCI Council in detail, so the event felt like a good opportunity to get people interested in the VCCI Council's activities and the VCCI mark.

Feedback from visitors included the following: "The explanations were easy to understand." "I often saw the VCCI mark on products in my home, so I was glad to learn about it."

We plan to continue exhibiting at the event, which is an excellent PR opportunity for the VCCI Council's activities and the VCCI mark.

46th REDCA Meeting: Business Trip Report

Steering Committee

Date and time: November 9, 2023 (Thu), 9:00 to 17:00 and November 10, 2023 (Fri), 9:00 to 12:30
Venue: The Sana Metropolitan Hotel, Portugal
Participants: About 70 individuals (members and observers) from Europe, the US, Canada, Japan, and other countries participating in person, and online participants (about 220 participants total)
Chairman: Mr. Holger Bentje
Secretariat: Mr. Nick Hooper
Participants on business: Taihei Otsuka, Chair of the Steering Committee (Sharp Corporation)
Akira Oda, Executive Director (VCCI Council)
Yoko Inagaki, Project Manager (VCCI Council)
Reference: REDCA membership (as of November 1, 2023) of 284 groups (full members, observers)
Full members: 276 groups (among which 15 are Japanese)
Observers: 8 groups (among which 2 are Japanese, such as the Ministry of Internal Affairs and Communications)

1. Introduction

The Radio Equipment Directive Compliance Association (REDCA) was formed based on the requirements of Radio Equipment Directive 2014/53/EU, and holds biannual general meetings for members on radio equipment compliance with EEA (European Economic Area) regulations and technical standards. These meetings also address compliance in countries that have signed mutual recognition agreements such as EU countries, the US, Canada, Japan, New Zealand, and Australia.

The VCCI Council is a member of REDCA. VCCI has been participating in this exhibition since 2011 to stay abreast of the latest trends in European standards and market monitoring status, and disseminate that information to VCCI members.

2. Operational overview

REDCA's operations are reported to be in sound financial health, with appropriate membership fees. The number of members is as shown in the preceding information.

3. Reports from each organization

3.1 Update from the EU Commission

- European delegated regulation 2022/30 was published on January 12, 2022, on which CENELEC began the standardization process. At the time, these standards were expected to be applied in August 2024, but European delegated regulation 2023/2444 was published on October 27, 2023,

European delegated regulation 2022/30 was partially corrected, and the application period was extended to August 2025. This was because the proposed CENELEC standards at the time needed to be changed. When these standards apply, the following conditions will need to be met.

Scope of European Radio Equipment Directive Article 3.3 Cybersecurity:

- Internet-connected radio equipment must not cause damage to networks or their functions, abuse networks or resources, or cause unacceptable deterioration of services.
- Internet-connected radio equipment must incorporate measures to ensure the protection of users' and subscribers' personal information and privacy.
- Internet-connected radio equipment must support certain functions that protect against unauthorized acts.
- There are misunderstandings around the concepts of "tolerance" and "measurement uncertainty", which hinder the adoption of standards. One example is EN 301 489. This is currently being discussed, and as a result of this discussion, additions have been planned for the RED Guide. A new RED Guide is planned to be published around June 2024.
- The following devices are subject to the standard "chargers (common chargers) must be USB type C": cell phones, tablets, digital cameras, video-game consoles, headphones, headsets, portable speakers, e-readers, keyboards, mice, portable navigation systems, wireless earphones, and laptops.

  Compliance with this standard will be mandatory for devices other than laptops from December 28, 2024. Compliance will be mandatory for laptops from April 28, 2026.

  Note that this list of devices is planned to be expanded by 2025.

3.2 Report on CISPR activities

- Report on the status of CISPR and SC77A/B activities
- According to reports, a definition of VHF-LISN devices will be added to CISPR 16-1-4 Ed.5, which is expected to be internationally standardized around December 2024. 15 general standards are being discussed for CISPR 32 Ed.3 (such as mains cable termination, WPT, and in situ).

3.3 Update on Japan Regulation

- Mr. Sugino of the Electromagnetic Environment Division of the Ministry of Internal Affairs and Communications spoke on the latest news on standards for radio equipment in Japan.
- There are 16 registered accreditation bodies in Japan, and 18 overseas.
- *Guideline for Utilization of European and U.S. Standard Test Data for 2.4GHz Band Wireless LANs* is a guidelines document for using European- and US-standard test data, such as for versions of 2.4-GHz-band wireless LANs to be used with current regulations. This compiles concepts relating to accredited tests of registered accreditation bodies, and was published in June 2023.
- Reports gave an overview of trial-purchase test results. Of 408 samplings, 605 products were identified that failed the test (there were multiple failing products per sampling). Failing test reports contained information indicating a lack of understanding of Japan's technical standards, with areas where the data and results do not match.
- Regarding frequency assignments for Japanese cell phones; two additional 3-MHz channel bandwidths were decided upon for the 700-MHz band.

- There was a presentation on "MIC MRA Workshop 2024", which is planned to be held in Japan in March 2024.

3.4 Report ADCO (Administrative Co-operation Working Group) RED chairman

- On September 12, 2023, France's national frequency agency (ANFR) announced that the specific absorption rate (SAR) for the iPhone12 does not meet European regulations.
- Specific numbers from market surveys were not given this time (REDCA presented them last time in May).
- Market surveys in FY 2024 are planned for radio-controllable toys.

3.5 Update on USTEL MRA Activities

- The following recently published document proposes a "Cyber Trust Mark":

  "NPRM proposing a voluntary labelling program for cybersecurity of IoT devices" (2023/8/10)

  (Note: NPRM stands for "Notice of Proposed Rulemaking".)

3.6 Summary TCB Council updates and associated topics

- All variations of hardware ought to be tested. Even if products are in the same product family, if their radio modules are different, they must be newly accredited.
- Specific cases of product defects mentioned in test reports were presented.
- The next new standard has been issued (2023/10/30).
  - ANSI C63.25.1-2018, "Test Site Validation; 1 GHz to 18 GHz"
  - ANSI C63.4a-2017, "Unintentional radiator measurements; 9 kHz to 40 GHz"

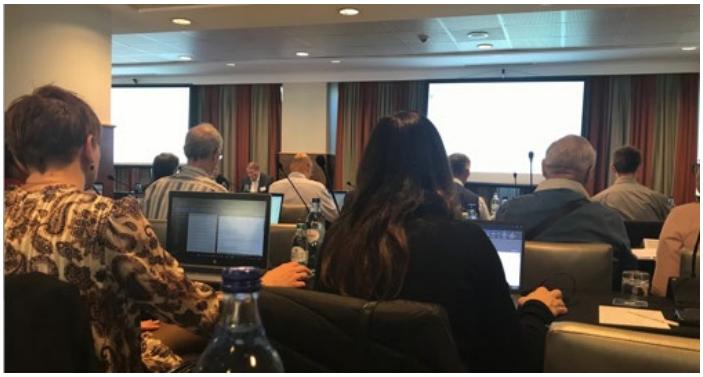
4. Next meeting

The next meeting will be held in the week of May 13, 2024.

5. Impressions

In the EU, there is high interest in cybersecurity and common chargers. Europe and the US also face the same challenges as Japan regarding issues in test reports such as fake data.

Mr. Holger Bentje, Executive Director
Oda and Steering Committee Chair Otsuka



Scene of the venue

Report on VCCI Seminar 2023

Following from last year, VCCI hosted VCCI Seminar 2023, an event for reporting on VCCI's activities and announcing the latest news to overseas members.

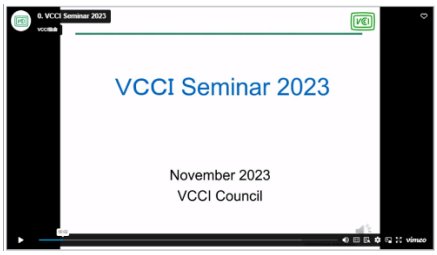
The seminar was held face to face for the first time in four years on July 7, 2023 (Fri), at the Kikai Shinko Kaikan. The seminar provided English translations of the VCCI seminar given for the Info-Communications Promotion Month event hosted by the Ministry of Internal Affairs and Communications. The following introductory videos were released to applicants from November 13 (Mon) to 24 (Fri). We are truly grateful to our viewers.

(41 people applied for participation: 12 from Taiwan, 8 from the US, 5 from South Korea, 4 from China and Germany respectively, 1 from Canada, Hong Kong, Singapore, and Denmark respectively, and 4 from Japan.)

[Program]

	Theme	Lecturer
1	Overview of VCCI Council	Mr. Akira Oda Executive Director
2.1	Market Survey –1 (Market Sampling Test)	Mr. Minoru Hirata Secretariat, Market Sampling Test Subcommittee
2.2	Market Survey –2 (Document Inspection / Marking Survey)	Mr. Minoru Hirahara Secretariat, Market Sampling Test Subcommittee
3	Introduction of Each Guidance	Mr. Masahiro Hoshino Secretary General
4	Frequently Asked Questions Sent to VCCI Council	Mr. Masahiro Hoshino Secretary General

[Presented video]



Status on FY2023 Market Sampling Tests

Market Sampling Test Subcommittee

As of December 27, 2023

Planned number of market sampling tests	Loan-based	35	100
	Purchase-based	65	

Terms of sampling tests	Selected samples	Cancelled (Not shipped, etc.)	Testable samples	Test completed (breakdown below)	Judgment			
					Passed	Failed- tentative		
						Finally passed	Finally failed	Pending
Grand total	104	4	99	75	70	1	1	2

Loan-based testing total		38	3	35	27	26	0	0	1
Term (breakdown)	1st Quarter	9	2	7	7	7	—	—	—
	2nd Quarter	9	—	9	9	8	—	—	1
	3rd Quarter	10	1	9	9	9	—	—	—
	4th Quarter	10	—	10	2	2	—	—	—

Purchase-based testing total		66	1	64	48	44	1	1	1
Term (breakdown)	1st Quarter	10	—	10	10	9	–	1	–
	2nd Quarter	16	1	15	15	14	1	—	—
	3rd Quarter	20	—	20	17	16	—	—	1
	4th Quarter	20	—	19	6	5	—	—	—

Passed	Failed	Pending
71	1	2

Document inspection	Selected samples	Cancelled (withdrawal, etc.)	Inspectable samples	Pre-check completed	Judgment completed	Judgment	
						Cleared	Problems identified
	42	2	37	34	33	32	1

Failed at Market Sampling Test - FY2023

As of December 2023

Company name	Tobii AB
Model/Type	Tobii Eye Tracker 5
Measurement	Radiated EMI measurement Hor.: 11.9dB excess at 180.04MHz Ver.: 7.6dB excess at 180.04MHz
Result	Cause: The root cause was an inadequate connection between the cable shield and the chassis of the product. Although the product had passed conformity confirmation test, there was only a small margin left. Measures to take on stocked and shipped products: The old design units were stopped shipment to Japan. A notification was sent to all customers through e-commerce site or directly via mail. The stocked products at e-commerce site have been returned. Prevention: - We have updated the design process to decrease the electromagnetic emission of the product Following have been made; (1) A component (EMC gasket) will be added to ensure the connection between the cable shield and the chassis. (2) The non-anodized area on the chassis side will be expanded to improve connection with the gasket. (3) A test point on the bottom part of the chassis has been added to be able to verify galvanic connection and perform test on sample level at production. - We have improved the development process by introducing check points. - We will strengthen our system for product compliance management throughout the product life cycle.

Report from the Secretariat

● List of Members (October 2023 - December 2023)

New members

Membership	Member No.	Company Name	Country
Regular	4337	Maruenu Co., Ltd.	JAPAN
Regular	4338	ComWorth Co., Ltd.	JAPAN
Regular	4343	Ricoh Industrial Solutions Inc.	JAPAN
Regular	4348	Hakusan Inc.	JAPAN
Regular	4335	HONGFUJIN PRECISION ELECTRONICS (CHONGQING) CO., LTD.	CHINA
Regular	4336	DASAN Networks, Inc.	KOREA
Regular	4339	Acer (Chong qing) Ltd.	CHINA
Regular	4340	Swissbit AG	SWITZERLAND
Regular	4345	XGIGA COMMUNICATION TECHNOLOGY CO., LTD	CHINA
Regular	4346	Ping Services Pty Ltd	AUSTRALIA
Regular	4347	LK Ventures Seoul HeadQuaters	KOREA
Regular	4349	KanDao Technology Co., Ltd.	CHINA
Supporting	4334	SGS North America, Inc.	USA
Supporting	4341	CETECOM Inc.	USA
Supporting	4342	Sushi TOWE Wireless Testing (Shenzhen) Co., Ltd.	CHINA
Supporting	4344	TestReal Quality Testing Technology (Shanghai) Co., Ltd.	CHINA

Company name change

Membership	Member No.	Company Name	Country	Old company name
Regular	3730	Vmware LLC	USA	Vmware, Inc.
Regular	4305	FSN Medical Korea Inc.	KOREA	Advanced Display Technology Co., Ltd.

Note: Please fill out and submit "Form 9 Change Notification" on the website when a company name has been changed.

● FY 2024 schedule of VCCI events and training seminars

April	May	June Release VCCI Dayori No. 153
July TECHNO-FRONTIER 2024	August Release Annual Report	September Release VCCI Dayori No. 154
October CEATEC 2024	November	December Release VCCI Dayori No. 155
January	February Technical Symposium (plan)	March Release VCCI Dayori No. 156

● Status of Compliance Test Notifications

October 2023—December2023 (Product names are examples and are not limiting)

Classification of MME (Product types are not limited to only the following examples.)				Classification code		October 2023			November 2023			December 2023		
				Class A	Class B	Class A	Class B	Total	Class A	Class B	Total	Class A	Class B	Total
ITE	Computer	Large	Super computer, Server, etc.	A 2	a 2	31	2	33	21	0	21	27	5	32
		Stationary	Workstation, Desktop PC, etc.	B 2	b 2	6	18	24	10	10	20	5	18	23
		Portable	Laptop PC, Tablet PC, etc.	C 2	c 2	0	59	59	0	42	42	0	59	59
		Other computers	Wearable computers, Wearable device, Smart watch, Smart glass, etc.	E 2	e 2	4	2	6	0	4	4	2	3	5
	Peripheral / Terminal	Memory device	HDD, SSD, USB Memory, Media drive, Disk device, NAS, DAS, SAN, etc.	G 2	g 2	4	21	25	10	25	35	7	11	18
		Printer device	Printer including multifunction machine, etc. (portable)	H 2	h 2	3	9	12	7	3	10	1	1	2
		Display device	CRT display, Monitor, Projector, etc.	J 2	j 2	7	53	60	9	55	64	2	52	54
		Other I/0 devices	Image scanner, OCR, Pen tablet, Stylus pen, etc.	M 2	m 2	0	8	8	0	2	2	3	5	8
		General purpose terminal	Display controller terminal, etc.	N 2	n 2	3	1	4	2	0	2	1	1	2
		Special purpose terminal	POS, Terminal for finance, insmance, etc.	Q 2	q 2	9	4	13	8	6	14	8	4	12
		Other peripheral	PCI Card, Graphics Card, Mouse, Keyboard, Cradle, etc.	R 2	r 2	14	41	55	8	27	35	9	54	63
		Copying machine / Multifunction copying machine	Copying machine, Multifunction copying machine, etc. (Stationary)	S 2	s 2	0	0	0	1	1	2	3	2	5
	Communications equipment	Terminal equipment	Mobile phone, Smart phone, PHS phone, etc.	T 2	t 2	0	0	0	0	1	1	0	3	3
			Telephone device such as PBX, FAX, Key telephone systems, Cordless phone, etc.	U 2	u 2	2	0	2	1	0	1	0	0	0
		Network-related equipment	Communication line connecting device including Modem, Digital transmission unit, DSU, TA, Media converter, etc.	V 2	v 2	2	3	5	3	0	3	2	9	11
			LAN-related device, including Router, HUB, etc. Local switch, etc.	W 2	w 2	64	21	85	37	14	51	80	24	104
		Other communication equipment	Other communication equipment	X 2	x 2	10	1	11	5	3	8	12	6	18
Broadcast receiver equipment			TV, Radio, Tuner, Video recorder, Set-top box, etc.		k 2		0	0		0	0		0	0
Audio equipment			Speaker, Amplifier, IC recorder, Digital audio player, Headset, DTM, AI speaker, etc.	L 2	l 2	1	17	18	0	9	9	0	4	4
Video equipment		Video equipment	Digital video camera, Web camera, Network camera, Video player, Photo frame, Digital camera, Drive recorder, etc.	I 2	i 2	4	7	11	18	9	27	3	11	14
		Other video equipment	VR goggles, Scan converter, etc.	P 2	p 2	2	0	2	1	0	1	2	0	2
Entertainment lighting control equipment			Entertairunent lighting control equipment, etc.	Z 2	z 2	0	0	0	0	0	0	0	0	0
Other MME	Entertainment / Education	Electronic stationery	Electronic dictionary, e-book reader, Translator, Calculator, etc.	D 2	d 2	0	0	0	0	1	1	0	0	0
		Electronic toy	Game console, Game pad, toy drone, etc.	Y 2	y 2	0	3	3	0	0	0	0	2	2
		Other Entertainment / Education equipment	Navigator, AI robot, etc.	F 2	f 2	0	0	0	0	0	0	0	0	0
	Other MME		MME other than the above	O 2	o 2	10	6	16	25	2	27	2	4	6
Total						176	276	452	166	214	380	169	278	447

●Registration Status of Measurement and Other Facilities

The following table indicates the status on registration of measuring facilities in the most recent three months.
Facilities listed here are only those made open by members of application for registration in principle. Members with those facilities whose valid period expired are kindly advised to contact VCCI to inform of the status they are in. Status to choose from are, renewal application being filed, new application being filed, waiting for the next issue to carry, or terminating the registration (all facilities are posted in the Web site).
Facilities in Japan are listed in Japanese.

List of newly registered or renewed facilities (October 2023 – December 2023)

R: Radiated EMI measurement facilities below 1GHz C: AC-mains-ports-conducted EMI measurement facilities
T: Telecommunication-port-conducted EMI measurement facilities G: Radiated EMI measurement facilities above 1GHz

Company name	Equipment name	3 m	10 m	30 m	Dark 3m	Dark 10m	Registration number	Effective date	Location	Contact to:
BTL Inc.	SH-CB02	-	-	-	-	-	G-20188	2026/10/15	No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai, China	+86-21-6176-5666 ext 103
BTL Inc.	SH-CB02	-	-	-	○	-	R-20194	2026/10/15	No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai, China	+86-21-6176-5666 ext 103
TÜV SUD Asia Ltd., Taiwan Branch	Shielded Room A	-	-	-	-	-	T-20153	2026/10/15	No. 31, Dinghu Road, Guishan District, Taoyuan City, R.O.C. Taiwan	+886-3-328-2512 #204
TÜV SUD Asia Ltd., Taiwan Branch	Shielded Room A	-	-	-	-	-	C-20151	2026/10/15	No. 31, Dinghu Road, Guishan District, Taoyuan City, R.O.C. Taiwan	+886-3-328-2512 #204
TÜV SUD Asia Ltd., Taiwan Branch	Chamber A	-	-	-	-	-	G-20191	2026/10/15	No. 31, Dinghu Road, Guishan District, Taoyuan City, R.O.C. Taiwan	+886-3-328-2512 #201
TÜV SUD Asia Ltd., Taiwan Branch	10 m Chamber	-	-	-	-	○	R-20198	2026/10/15	No. 31, Dinghu Road, Guishan District, Taoyuan City, R.O.C. Taiwan	+886-3-328-2512 #205
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Chamber D	-	-	-	-	-	G-20192	2026/10/15	Room 204, Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, Guangdong Province, China	+86-769-3381-7110
Nemko Canada Inc.	Nemko Ottawa-Radiated Emissions Above 1 GHz	-	-	-	-	-	G-20195	2026/10/15	303 River Road, Ottawa, ON, Canada	+1-613-737-9680
Kiwa Netherlands B.V.	Kiwa Netherlands B.V.	-	-	-	○	-	R-20197	2026/10/15	Wilmersdorf 50, The Netherlands	+31-88-998-3600

Company name	Equipment name	3 m	10 m	30 m	Dark 3m	Dark 10m	Registration number	Effective date	Location	Contact to:
Shenzhen Huatongwei International Inspection Co., Ltd.	Shielded Room	-	-	-	-	-	C-20152	2026/10/15	Building 7, Baiwang Idea Factory, No. 1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	+86-755-2674-8058
Shenzhen Huatongwei International Inspection Co., Ltd.	Shielded Room	-	-	-	-	-	T-20154	2026/10/15	Building 7, Baiwang Idea Factory, No. 1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	+86-755-2674-8058
Shenzhen Huatongwei International Inspection Co., Ltd.	SAC1	-	-	-	○	-	R-20199	2026/10/15	Building 7, Baiwang Idea Factory, No. 1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	+86-755-2674-8058
Shenzhen Huatongwei International Inspection Co., Ltd.	SAC2	-	-	-	-	-	G-20193	2026/10/15	Building 7, Baiwang Idea Factory, No. 1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	+86-755-2674-8058
Shenzhen Huatongwei International Inspection Co., Ltd.	SAC3	-	-	-	-	○	R-20200	2026/10/15	Building 7, Baiwang Idea Factory, No. 1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	+86-755-2674-8058
Sporton International Inc.	KunShan 3 m Semi-anechoic Chamber 03CH02-KS	-	-	-	○	-	R-20201	2026/10/15	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu province, China	+886-0512-5790-0158
Sporton International Inc.	KunShan 3 m Semi-anechoic Chamber 03CH02-KS	-	-	-	-	-	G-20194	2026/11/21	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu province, China	+886-0512-5790-0158
BTL Inc.	DG-CB17	-	-	-	○	-	R-20203	2026/11/21	Room 102, Building 3, No. 9, Jinshagang 1st Road, Dalang, Dongguan, Guangdong, China	+86-769-8318-3000
BTL Inc.	DG-CB17	-	-	-	-	-	G-20196	2026/11/21	Room 102, Building 3, No. 9, Jinshagang 1st Road, Dalang, Dongguan, Guangdong, China	+86-769-8318-3000

Company name	Equipment name	3 m	10 m	30 m	Dark 3m	Dark 10m	Registration number	Effective date	Location	Contact to:
Bureau Veritas Consumer Products Services, (H.K.) Ltd., Taoyuan Branch	Semi-anechoic chamber No. 8	-	-	-	-	-	C-20154	2026/11/21	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)	+886-3-264-1529
Bureau Veritas Consumer Products Services, (H.K.) Ltd., Taoyuan Branch	Semi-anechoic chamber No. 8	-	-	-	-	-	T-20156	2026/11/21	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)	+886-3-264-1529
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Shielding Room B	-	-	-	-	-	T-20155	2026/11/21	Room 204, Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, Guangdong Province, China	+86-769-3381-7110
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Shielding Room B	-	-	-	-	-	C-20153	2026/11/21	Room 204, Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, Guangdong Province, China	+86-769-3381-7110
UL Verification Services (Guangzhou) Co., Ltd., Song Shan Lake Branch	Chamber D	-	-	-	○	-	R-20202	2026/11/21	Room 204, Building 10, Innovation Technology Park, Song Shan Lake Hi-tech Development Zone, Dongguan, Guangdong Province, China	+86-769-3381-7110
DEKRA Testing and Certification Co., Ltd.	FS-SR01	-	-	-	-	-	T-20157	2026/11/21	No. 85, Wenlin St., Linkou Dist., New Taipei City, Taiwan, R.O.C.	+886-2-8601-3788
DEKRA Testing and Certification Co., Ltd.	FS-SR01	-	-	-	-	-	C-20155	2026/11/21	No. 85, Wenlin St., Linkou Dist., New Taipei City, Taiwan, R.O.C.	+886-2-8601-3788
DEKRA Testing and Certification Co., Ltd.	FS-CB04	-	-	-	○	-	R-20205	2026/12/17	No. 85, Wenlin St., Linkou Dist., New Taipei City, Taiwan, R.O.C.	+886-2-8601-3788
DEKRA Testing and Certification Co., Ltd.	FS-CB04	-	-	-	-	-	G-20197	2026/12/17	No. 85, Wenlin St., Linkou Dist., New Taipei City, Taiwan, R.O.C.	+886-2-8601-3788
DEKRA Testing and Certification Co., Ltd.	HY-SR09	-	-	-	-	-	C-20156	2026/12/17	No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan, R.O.C.	+886-2-8601-3788
DEKRA Testing and Certification Co., Ltd.	HY-CB05	-	-	-	○	-	R-20204	2026/12/17	No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan, R.O.C.	+886-3-275-7255
DEKRA Testing and Certification Co., Ltd.	HY-SR09	-	-	-	-	-	T-20158	2026/12/17	No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan, R.O.C.	+886-3-275-7255

Company name	Equipment name	3 m	10 m	30 m	Dark 3m	Dark 10m	Registration number	Effective date	Location	Contact to:
Guangdong Global Testing Technology Co., Ltd.	CE B-1	-	-	-	-	-	C-20157	2026/12/17	Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong Pr., China.	+86-186-6665-6060
Guangdong Global Testing Technology Co., Ltd.	RE B-1	-	-	-	○	-	R-20206	2026/12/17	Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong Pr., China.	+86-186-6665-6060
Guangdong Global Testing Technology Co., Ltd.	RE B-2	-	-	-	-	-	G-20199	2026/12/17	Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong Pr., China.	+86-186-6665-6060
Guangdong Global Testing Technology Co., Ltd.	CE B-1	-	-	-	-	-	T-20159	2026/12/17	Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong Pr., China.	+86-186-6665-6060
GRG Metrology & Test Group Co., Ltd.	Semi-anechoic chamber #SA210603-01 (Radiation 3 meter site)	-	-	-	○	-	R-20207	2026/12/17	No. 1301 Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen, 518110, People's Republic of China	+86-0755-6118-0008
GRG Metrology & Test Group Co., Ltd.	Conducted disturbance shielded room #6 (Wired network Ports)	-	-	-	-	-	T-20160	2026/12/17	No. 1301 Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen, 518110, People's Republic of China	+86-0755-6118-0008
GRG Metrology & Test Group Co., Ltd.	Conducted disturbance shielded room #6 (AC Mains Ports)	-	-	-	-	-	C-20158	2026/12/17	No. 1301 Guanguang Road, Xinlan Community, Guanlan Street, Longhua District, Shenzhen, 518110, People's Republic of China	+86-0755-6118-0008
KSIGN TESTING CO., LTD.	KSIGN TESTING CO., LTD.	-	-	-	-	-	G-20200	2026/12/17	Buidling 5, No. 316, Jianghong South Road, Binjiang District, Hangzhou, 310052, China	+86-131-7508-8000
BTL Inc.	DG-CB17	-	-	-	-	-	G-20198	2026/12/17	Room 102, Building 3, No. 9, Jinshagang 1st Road, Dalang, Dongguan, Guangdong, China	+86-769-8318-3000

Closing words

As a lover of tonkatsu – Japanese deep-fried pork cutlets – I go out to eat tonkatsu almost every week.

Here, I'd like to introduce the rare delicacy "Nakijin Agu" that can only be eaten on special occasions.

In Okinawa, ancestor-worshipping events known as "ugan" have been held since ancient times. Examples include the Kyu-Bon and Shimi festivals for commemorating one's ancestors, mainly held in the central and southern parts of the main island of Okinawa. In these festivals, food is prepared in stacked boxes and offered to the gods.

These stacked boxes are filled with dishes made of "birds that fly in the sky", "pigs that run on the land", and "fish that swim in the sea". Traditionally, this food is eaten by the entire family after being offered to the gods. Nakijin Agu, offered as "pigs that run on the land", is a precious ingredient that can only be eaten during worshipping events.

Nakijin Agu is a pig originating in Asia, of which many were imported and reared during Okinawa's period of trade with China (1368 to 1644).

With black fur, long faces, droopy ears, concave backs, saggy bellies, straight (not curly) tails, and rear hooves that touch the ground, they retain many aspects of their native ancestors' appearance. (They're not very cute compared to your typical Western pig. Look them up yourself!)

One major difference is the number of vertebrae – the Nakijin Agu has 19 vertebrae (same as a wild boar) compared to 22 to 23 in a Western pig. This smaller number of vertebrae results in a shorter body with a thicker mass of fat.

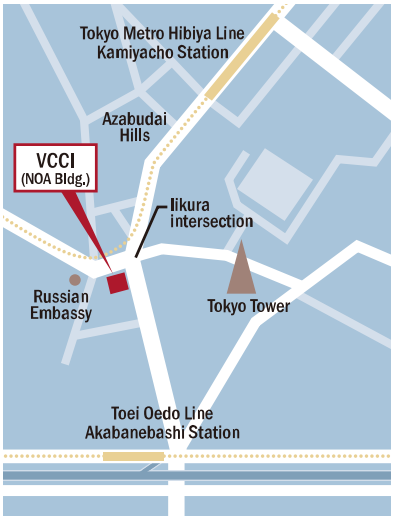
The pigs are raised with a carefully controlled diet in the natural environment of Nakijin Village, with plentiful wind, rain, water, and sun. For their health, sows are let loose to graze on grassy fields, enjoy the sea breeze, and play in the wet mud.

One sow apparently gives birth to about ten piglets a year, which take 12 to 18 months to bring to market. One Western sow gives birth to 30 piglets a year, which take six months to bring to market; significantly faster and less labor-intensive.

The Nakijin Agu is a different species from the (Okinawan) Agu, with DNA originating from both the Asiatic pig and wild boar. Apparently, Nakijin Agu constitute only about 1% of Agu pigs produced on all islands, and constitute only a handful of pigs called "Agu" in Okinawa.

Nakijin Agu has multiple times the amino acid content of regular pigs, and its fat has a low melting point, giving the meat a very sweet flavor. The texture is quite chewy due to the high elasticity of the muscle fibers, with ample umami. Despite this, the meat does not feel heavy on the stomach.

I have nothing but immense gratitude toward the restaurants' head chefs with their masterful cooking skills, and the producers who rear the animals with such care, for bringing such delicious pork to the table.? (J.I.)



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