CHAdeMO

FY 2020
Activity Report

(1 April 2020 ～ 31 March 2021)

CHAdeMO Association

President’s address

We would like to express our sincere gratitude to all our members for their continued support for the promotion of electric vehicles and fast chargers. We have been working remotely for the past year to achieve our new vision of "Powering global zero emission mobility for the happiness of future generations".

COVID-19, which has been spreading since last spring, has forced us to change the way we work. At CHAdeMO, we have had to cancel all meetings and events that were planned before the pandemic. For ten years, our members from all over the world had been working together to overcome geographical constraints and in that time have achieved a great deal, including the publication of international standards, the certification of more than 100 chargers, and the installation of over 40,000 chargers worldwide. We turned to web conferencing to keep pace with the pandemic, but it has indeed helped us to strengthen our day-to-day activities. We will continue to make good use of various communication tools to promote the Association’s mission of providing a safe, affordable, and interoperable charging experience for EV drivers, through cross-sector cooperation between companies and organisations from a variety of industries.

In terms of technological developments, the ChaoJi protocol, which was launched as a Japan-China joint development project in 2018, has made progress in its technical review and the specification document was issued in April. For the DC charging standard for smaller vehicles, which the Two-Wheeler WG had been working on since 2018, the draft specifications and certification test procedure for two-wheelers were released. I would like to express my sincere gratitude to all the WG members who have continued to work hard and produce results even in this difficult environment. I am immensely proud of their efforts.

The once-in-a-century shift to EVs has accelerated even during the global economic downturn under COVID-19, as the world realised that EVs are the trump card for putting the brakes on global warming and achieving environmental goals. In order to further promote the spread of EVs by reducing the burden on both users and suppliers and improving convenience, it is necessary to ensure the compatibility of charging standards, which is one of the core technologies. CHAdeMO's decision to work with China's CEC to unify the next generation standards is one of the best options for promoting EVs and charging infrastructure. In Europe, CHAdeMO Association was selected this year as one of the 20 expert organisations forming a sub-group of the advisory body (STF) of the European

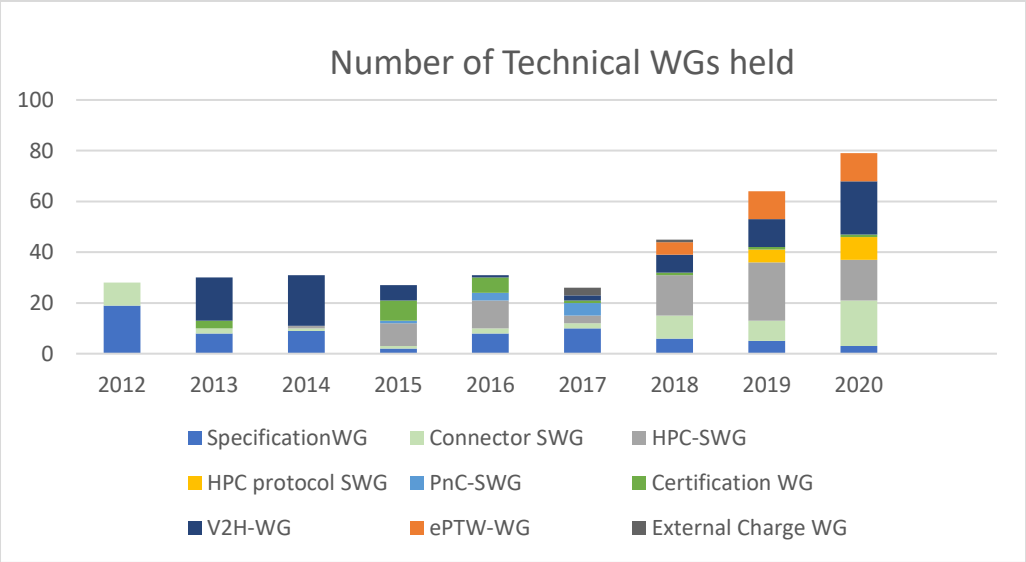
Commission's Directorate-General for Transport. We are honoured to be recognised for our experience and expertise.

We believe that the certification system and the V2X function, which have underpinned the safety and reliability of CHAdeMO, will be a driving force for the global expansion of EVs, and we will continue to strengthen our cooperation with stakeholders around the world to harmonise future EV charging standards. We anticipate that the tough situation due to the pandemic will continue for some time to come, but we will work together with our members to overcome the difficulties. I would like to ask for your continued support.

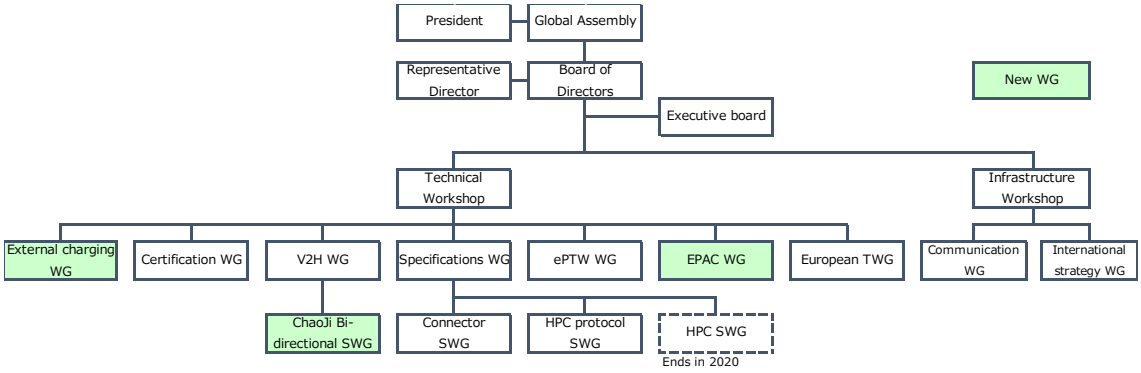
Mr Takafumi Anegawa
President

Technical working group (WG)

Looking back at the activities of the Technical Working Group since 2013, when the WG started its systematic activities, the initial main issues were the proposal of international standardisation and the examination of specifications for bidirectional power transfer, and the Specifications WG and V2H-WG were the main drivers of our activities until 2014. From FY 2015, the two main issues were the development of a certification system with the aim of creating a system for third-party homologation bodies, and the evaluation of high-power charging (HPC) specifications, and the heavy lifting shifted from the Specifications WG to the Certification WG and the HPC SWG. Starting in FY 2016, in order to harmonise activities with the IEC revision project, which started after the publication of the IEC international standard, an ad hoc SWG within CHAdeMO Association was established to study various topics, such as protection coordination and the relaxation of requirements. In FY 2018, the ChaoJi project, which is a Japan-China joint development project, and the Two-Wheeler WG, which is developing a small-capacity charging standard, were newly established, and the activities of the Connector SWG, which is the key enabler technology required for both developments, also intensified. In FY 2020, the spread of COVID-19 made it impossible to hold in-person meetings, but the introduction of web conferencing has led to an increase in the overall number of WG meetings, and this trend continues.



Four changes were made to the organisational structure of the Technical WG in FY 2020. The HPC SWG has achieved its objective with the publication of the CHAdeMO 3.0 specifications in April 2021, and we have decided to consolidate its activities into the Specifications WG. In its place, the External Charging WG, which has been inactive since FY 2018, will be re-activated with new missions. The re-activated External Charging WG will have two sub-groups for different issues: ACD (Automatic Connection Devices) and WPT (Wireless Power Transfer). In addition, a SWG has been established under the V2H-WG to study the bidirectional extension of the CHAdeMO 3.0 (ChaoJi2) specifications. The EPAC-WG was also established, proposed by Bosch, to develop DC charging standards for electrically power assisted cycles (EPACs), and will start its activities in FY 2021.



Specifications WG

In FY 2020, we worked with the Japan Automobile Research Institute (JARI) to harmonise the CHAdeMO specifications with IEC61851-23/24, which are currently under revision. In March 2021, we published a revised version of the manual that specifies operational methods in

response to the introduction of Boost Mode high-power chargers.

In terms of collaborative activities, we launched a joint working group with the Open Charge Alliance (OCA) in June 2020. In order to facilitate linking CHAdeMO with the OCPP, which is a standard communication protocol for managing the billing of charging services and the maintenance and operation of chargers, and which is widely used in Europe and other parts of the world, we worked on defining and matching mutual terminology and creating a diagram of message exchange procedures. The results were published as a white paper and, in December, a web briefing session was jointly held. As a next step, we are planning to collaborate on extended functions such as V2X.

High power charging SWG

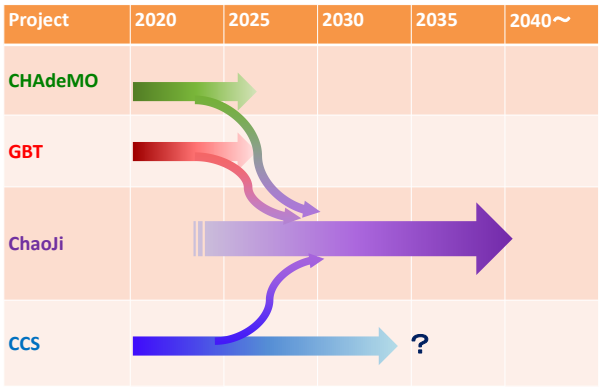
In the development of the standard, we have continued to work with the international ChaoJi TWS set up in 2019. As an interim result, a CHAdeMO 3.0 technical paper was published in April 2020, and a joint press conference and technical briefing was held with the Confederation of Electric Power Companies (CEC) in June. The technical exchange meetings between China and Japan, which had been held continuously since 2018, were held in September 2020 and March 2021 in the form of web conferences, as physical visits were no longer possible.

As part of the ChaoJi demonstration project, two types of inlet adapters, CHAdeMO-ChaoJi (left) and CCS2-ChaoJi (right), were prototyped and verified for the purpose of backward compatibility validation.

Although the Chinese side has so far been ahead in terms of productisation, we allocated 10 million yen for CHAdeMO in FY 2019, mainly for the trial production of connectors and adapters to ensure backward compatibility on the CHAdeMO side.

HPC protocol SWG

In order to realise the integrated protocol, the objective of the HPC Protocol SWG, the biggest question is how to design the transition process from the existing systems of CHAdeMO, GB/T and CCS to the new protocol. To achieve this goal, not only is CHAdeMO's decision making necessary, but coordination with external parties is likewise necessary. We have prepared several roadmap proposals and are continuing to discuss and negotiate matters within and outside the organisation.



Assuming that CHAdeMO will adopt TCP/IP as the final form, a use case research to define functional requirements and an elemental technology study/analysis are being conducted in parallel. These will be continued during the next year.

Connector SWG

Evaluation and verification of the performance, strength, and safety of ChaoJi connectors, inlets and inlet adapters are being carried out in collaboration with the International ChaoJi TWS SWG1. We have evaluated and validated the coupler strength, dimensional tolerances, and insertion/extraction, as well as the specifications of conversion adapters, which are the main technical validation items fin the joint development.

Certification WG

In FY 2020, 1.2 certification testing was terminated with the start of applications for the 2.0.1 certification test. However, as there are no high-voltage vehicles complying with 2.0, we started to receive requests to resume the 1.2 verification tests. We are therefore preparing a response in consultation with the Specifications WG.

The CHAdeMO Protocol test-tool (CPT), developed as a validation system in 2018, has been on general sale in Japan since last year, and work is ongoing to obtain the necessary certification for international sales.

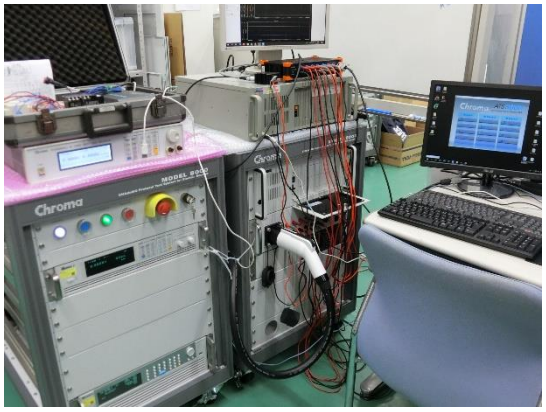
V2H-WG

In FY 2020, deliberations on the revision of the guidelines (to comply with v 1.2 of the Standard Specification) continue, and v 2.2 for both V2H and V2L are expected to be published shortly.

Short-circuit current ad-hoc WG

In October 2020, a short-circuit test was carried out, which had been planned since the year before. The purpose of this test was to verify whether it is necessary to review the assumed value of the short-circuit current and safety standards, which are increasing as the capacity of on-board batteries increases. The test was conducted assuming a short-circuit current of 30kA, and it was confirmed that there was no danger of the connector becoming disconnected or the user receiving an electric shock. Additional experiments are planned for next year to verify the disconnection mechanism of the inlet terminal and terminal holder that occurred in this experiment.

Two-Wheeler WG



In FY 2020, we have been working on the development of a Protocol check sheet and a certification system in parallel with the development of documents for charger specifications, e-PTW-side specifications, charger test specifications, and connector and inlet performance confirmations. IEC 6181-25, the international standard on which the charger specifications are based, was published in December 2020 and a draft of the aforementioned set of documents was released in April 2021, followed by a call for comments from Regular Members and the eventual publication of final versions at the end of June.

IEC Standardisation activities

We are working with countries on technical deliberations for IEC 61851-23/24ED2, the IEC DC charging standards. The main items to be added from ED1 are test specifications, additional safety requirements, protection coordination with the vehicle, high power charging and V2X. Technical issues impacting the CHAdeMO specifications (e.g., relaxation of requirements, harmonisation of specifications with other systems, etc.) are addressed in cooperation with the members of the Specifications WG. In FY 2021, technical discussions will continue, and the Final

Draft International Standard (FDIS) will be published, marking the final phase of this revision project, which started in 2015.

For IEC 61851-23-1ED1, the standard for pantograph charging of heavy-duty vehicles, the technical deliberations related to CHAdeMO have been completed.

IEEE Standardisation activities

In the U.S.A., we are working on the revision of IEEE 2030.1.1, a CHAdeMO-compliant DC charging standard, and preparing a conformity assessment steering committee (CASC) for a project aiming for common certification with CHAdeMO certification.

In FY 2020, we completed the preparation of the revised draft of IEEE 2030.1.1 incorporating the CHAdeMO Standard Specification ver. 2.0 and V2H Guidelines, which was approved by a majority vote. Following additional discussion of the ballot comments, the revised standard is expected to be published in 2021. In addition, preparations are underway to set up a CASC to revise the Test Suite Specification (TSS) issued in 2019, so that the revised standard can also be certified in common with the CHAdeMO certification test.

We are also preparing for the IEEE standardisation of CHAdeMO Standard Specification ver. 3.0, published in April 2021.

PR & Communications

ChaoJi Japan-China joint event

In collaboration with the China Electricity Council (CEC), a joint event was held virtually on 19 June to present the ChaoJi technology overview and its development status. This online event was broadcasted to the world in three languages.

On the day of the event, Tokyo and Beijing were virtually connected, and Mr Liu, CEC Director, and Mr Yoshida, CHAdeMO Secretary-General, mutually reported on the latest status of the next-generation standard, ChaoJi. Mr Ni and Mr Imazu, project leaders of their respective organisations, followed with the technical detail presentations, and other project partners shared their experience of participating in the ChaoJi project and sent congratulatory messages on the achievements.

Technical assistance for the development of charging infrastructure

We are actively promoting charging infrastructure in Asia and India, where the electrification of four-wheeled, three-wheeled, and two-wheeled vehicles is rapidly becoming widespread.

In India, the Automotive Research Association of India (ARAI), the governmental certification body, has joined CHAdeMO's certification network. A testing system has been developed and ARAI has started to fulfil its function as a CHAdeMO certification body using testing equipment. The Indian government, believing that charging infrastructure is essential for the promotion of electrification, joined forces with CHAdeMO Association and is actively promoting charging by incorporating the CHAdeMO standard into its domestic standards, participating in the ChaoJi project, and by jointly developing India-specific standards with CHAdeMO.

In Indonesia, the CHAdeMO standard was officially adopted via Presidential Decree as a domestic standard. The governmental certification body BPPT has joined the Association and is currently preparing to become a certification body. The CHAdeMO Association provides, in return, assistance to Indonesia by disclosing materials, opening up intellectual property, providing equipment, and implementing training programs. Furthermore, we are providing full support for national activities to promote electrification by participating in almost every Japan-Indonesia bilateral governmental meeting.

In April this year, the Association was invited to speak at an online seminar organised by the United Nations Environment Programme (UNEP) for Latin American and Caribbean policy makers and e-mobility stakeholders. Participants from different countries, such as Panama, Chile, and Costa Rica, asked many questions and demonstrated their great interest in electrifying vehicles. We will continue to promote the use of charging infrastructure in these areas through individual meetings and discussions with Latin American countries.

We believe that these activities are the fruits of our localisation promotion and open platform strategy and will continue to promote the CHAdeMO standard by following the same guiding

principles.

Infrastructure Workshop activity report

The Infrastructure Workshop was held virtually in 2020. Due to the spread of COVID-19, the event was delayed until March. However, the webinar setting enabled increased participation, attracting 270 participants out of 320 registrants, as no interregional travel was required.

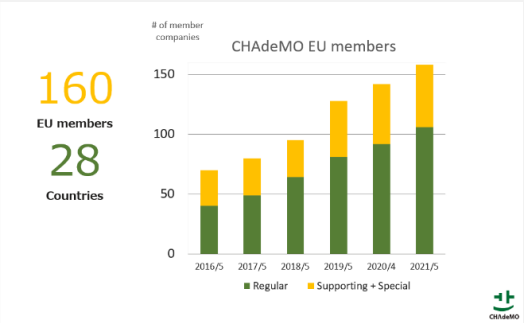
Infrastructure Workshop

Date	Participant	Main agenda	Presenter
34rd 19-Mar	270	Greetings	President Takafumi Anegawa
		Electric vehicle lineup and V2X initiatives	Mitsuibishi motors Corporation
		GE TECHNOLOGY, safer charging technology	GC UNIVERSAL
		Communication protocol (Ethernet) and its evaluation in the next-generation EV charging standard	Keysight Technologies
		Proposal for Electric Pedal Assist Cycles (EPAC) charging WG	Bosch eBike Systems
		CHAdeMO Association Activity report	CHAdeMO secretary

CHAdeMO Europe

In 2020, Europe was shaken by the spread of COVID-19, but amid the contraction of general vehicle sales, the EV market made great strides thanks to Green Recovery-related policies. While various events were cancelled, CHAdeMO Europe made efforts to enhance and improve member services by utilising online tools. Furthermore, the European Commission started a revision of 'Directive 2014/94/EU on the deployment of alternative fuels infrastructure (AFID)'", stipulating the technical requirements for the installation of public charging infrastructure, and we therefore put major effort into communicating with EU stakeholders.

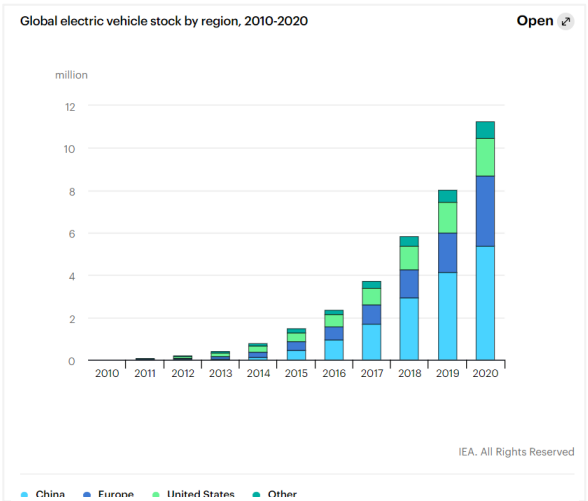
CHAdeMO European members reached 160



The number of CHAdeMO members in Europe has reached 160, and it continues to grow steadily. If the number of our members doubled in the last five years it is thanks to the market's trust and expectations for the development of V2G and next-generation ultra-high power charging standards.

Worldwide EV stock on a steady rise

According to the International Energy Agency's (IEA) Global EV Outlook 2021, global EV stock has reached 10 million units, up a healthy 41% on the previous year, despite a slowdown in new car sales due to the pandemic. China accounts for 5.4 million EVs, followed by Europe, where EV stock reached 3.3 million units.



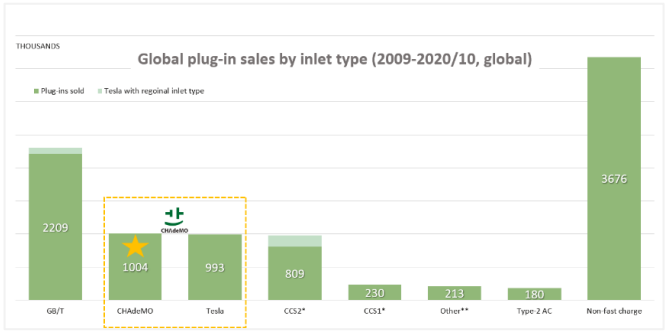
Source: IEA analysis based on country submissions, complemented by ACEA (2021); CAAM (2021); EAFO (2021); EV Volumes (2021) and Marklines (2021).

The number of EVs sold worldwide exceeded 3 million units in 2020, with particularly strong growth in Europe. The factors behind this strong performance seem to be the strengthening of key regulatory frameworks such as CO2 emissions reduction targets, as well as additional public support such as the Green Recovery Fund to

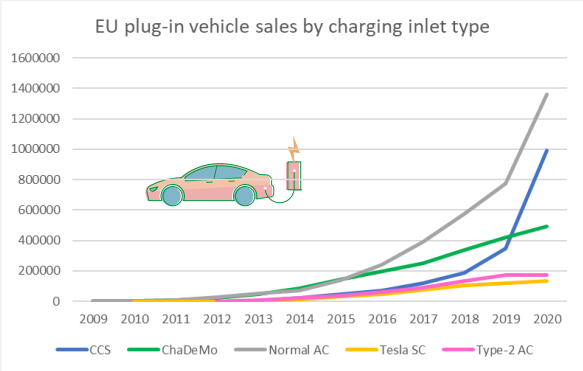
safeguard EV sales from the economic downturn.

CHAdeMO reaches 1 million sales worldwide, half of which are in Europe

Looking at the global plug-in market (cumulative) by DC charging inlet type, the total number of electric vehicles (BEV and PHEV) with CHAdeMO inlets reached 1 million in October 2020. CHAdeMO achieved 1 million sales next to vehicles equipped with Chinese GB/T inlets. As CHAdeMO chargers can serve Tesla vehicles (not the regional inlet ones) via their CHAdeMO adapter, CHAdeMO chargers can now serve over 2 million plug-ins across the world. In the European market, CHAdeMO-equipped vehicles (BEV + PHEV) have reached nearly 500,000 units in total. While CCS is steadily growing its market share, 2020 also saw the launch and announcement of a number of new CHAdeMO cars, such as the Mitsubishi Eclipse Cross PHEV, Toyota Lexus UX 300e and Xpeng G3, for the European market.



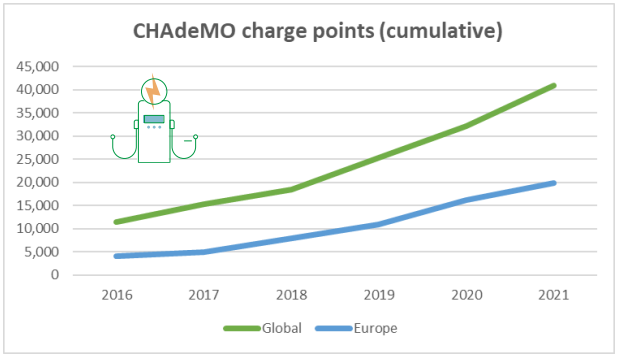
Source: EV-Volumes.com, BEV + PHEV, including LCV; Global total = 9.8 million vehicles (as of Oct 2020) Note: *CCS1 and CCS2 breakdown unknown. We assumed the Americas = CCS1, and Europe, Africa & ME = CCS2, and prorated the Asia Pacific (80K).



Source: EV-Volumes.com (as of Dec 2020)

CHAdeMO surpassed 40k charge points worldwide and 19k in Europe

CHAdeMO continued its strong growth and expanded its global reach in the past year, reaching a global total number of over 40,000 charge points. With 19,200 charge points, Europe remains home to the biggest number of CHAdeMO charge points.



Activities related to EU's AFID revision

The European Commission is revising 'Directive 2014/94/EU on the deployment of alternative fuels infrastructure (AFID)' (the proposal is scheduled to be submitted in mid-July). In this regard, CHAdeMO Association released its position papers and public comments to call for non-discriminatory treatment of CHAdeMO users by advocating CHAdeMO's technological advantages and its important role in the European market. In addition, the Association joined forces with other stakeholders such as EURELECTRIC and the Platform for Electromobility, a Brussels-based lobbying group to reach a wider European audience. Such longstanding efforts and our impeccable track record in safety resulted in the appointment of CHAdeMO Association as a member of the EU Sustainable Transport Forum's (STF) sub-group. STF is a platform for cooperation and coordination between the EU member states and expert stakeholders, and the sub-group is tasked with defining principles and a governance framework for the efficient management of digital communications in the electromobility ecosystem in Europe.

European meetings and events

▪ 11th CHAdeMO EU Annual Member Meeting (10 November, online)

Due to the COVID-19 outbreak, the 11th CHAdeMO EU Annual Member Meeting was held online for the first time ever. The meeting attracted 90 participants from 19 countries from Asia and Africa, beyond Europe.

At the beginning of the meeting, Mr Anegawa, CHAdeMO President, gave a presentation on his personal impressions from an EV trip and on the Association's new vision of putting environmental considerations to the fore. He also called for the active support of member companies regarding CHAdeMO's mission of bringing safe, affordable, and interoperable charging to EV drivers. Mr Imazu, the Technical Committee Chair of the Association, reported on the activities of the Technical WG, such as progress in ChaoJi development, and Ms Perry of Nissan Europe explained the company's business strategy, reiterating its commitment to CHAdeMO. The last part of the member meeting comprised short introductions by new members: Rectifier Technologies, Tata Elxsi, i-Charge and Webasto. This year, we also included a short pitch by the students of ETH Zurich (the Swiss Federal Institute of Technology in Zurich) on their exciting electric aircraft project using CHAdeMO.

Presentation by Mr Anegawa

▪ EU Technical Workshop Meeting (10 November, online)

The EU Technical Workshop meeting was held on the same day as the European Annual Member Meeting. The heads of the Connector WG, HPC protocol WG, and HPC WG reported on their activities focusing on the development status of the ChaoJi project. Furthermore, Mr Yamada, the head of the Specifications WG, reported on the revision status of the CHAdeMO protocol as well as on the collaboration project with the OCA, and Mr Haida, IEC technical leader, updated members on the progress in international standardisation work. The meeting offered an opportunity for the Association's members not only to be better informed of technical updates but also to deepen their knowledge about the activities of the CHAdeMO WGs' activities.

PR activities

Although the events were mainly held online in 2020, CHAdeMO ensured its visibility by speaking at events all over Europe and contributing to international initiatives.

▪ Lectures and presentations at events

CHAdeMO President Mr Anegawa participated in AVERE's e-mobility conference (AEC) on 19 November. He made a strong appeal to European stakeholders on the importance of a free market and encouraged free competition for the common goal of accelerating EV uptake.

Event screenshot courtesy of AVERE

Ms Tomoko Blech, Secretary General of CHAdeMO Europe, participated as a speaker in the eMove Europe conference on 21 October. In a presentation titled "Good charging infrastructure for sustainable E-mobility," she talked about what "good" DC charging infrastructure should look like according to CHAdeMO.

Upon the invitation of the Cenex LCV (low carbon vehicle event), the biggest e-mobility event in the U.K., Mr Tomoya Imazu, the Chair of CHAdeMO's Technical Committee, spoke of the added-value of EVs and challenges related to the development of ultra-high-power charging technology.

Contribution to international organisations and cooperation

In addition to the Global EV Outlook published annually by the International Energy Agency (IEA), the Association's European Secretariat participated in peer reviews of the International Transport Form's (ITF) report 'Role of urban delivery vehicles for electric mobility', as well as the STF's report 'Recommendations for public authorities on: procuring, awarding concessions, licenses and/or granting support for electric recharging infrastructure'. In addition, we continued to be actively involved in sharing the expertise of CHAdeMO and its members, including via our participation in the EV-grid integration research project commissioned by the DG ENER of the European Commission.

Activities in FY 2020

	2020 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2021 Jan	Feb	Mar
Board of Directors	★		★			★		★			★	
Steering committie	★			★					★	★		★
General Assembly			★ （6/4） General Assembly					★(11/10) European meeting				
Technical Workshop	★3.0Technical paper issue								★3.0 Specification draft2 issue(12/26)			
			★ChaoJi online Press release (6/19)									★Technical manual revision
						★Sino-Jpn technical Mtg#5 (9/24-25)				ChaoJi2 Webinar(3/23)★		
									Sino-Jpn technical Mtg#6 (3/29-30) ★			
Infrastructure Workshop											Web mtg#34(3/19) ★	
International standardization			★TC69/MT5#14(6/15-19)			★TC69/MT5#17(8/3		★TC69/MT5#20(11/4		★TC69/MT5#23(1/11-13)		
				★TC69/MT5#15(7/6-10)		★TC69/MT5#18		★TC69/MT5#21		★TC69/MT5#24(1/27-29)		
				★TC69/MT5#16(7/20-21)			★TC69/MT5#19(1		★TC69/MT5#22		★TC69/MT5#25(1/17-19)	
Certification test	★Wallbox Chargers(V2H)			★Delta Electronics(100kW)			★ABB(180kW)		★Kyuden Technosystems(V2H)			
	★Tsubakimoto chain(V2H)			★Hasetec			★IKS(V2H)					★Shindengen(90kW)
		★ABB(100 k W)			★Takaoka Toko			★JFE technos(100kW)				
						★Nichicon		★Shindengen(60kW)				
						★Shindengen(150kW		★Ampere Energy(V2H)				
						★ABB(100kW)		★ABB(V2H)				
PR activity, etc.	★eMobility Asia								★AEC/eMove360/Cenex			
			★ChaoJi online Press release (6/19)									★India Smart Grid Forum
					★Japan-Thailand EV seminar							★MOVE EV ; Asia
						★Smart Grid week@Osaka						
							★eMove360°Europe (10/21)					
								★AVERE ACE (11/19)				
								★Cenex LCV (11/19)				

Board meetings/WG

Board of Directors / Steering committie

	date	Main Agenda
17th B 0f D	24-Apr	Financial statement, 2020 budget
18th B 0f D	4-Jun	2020 Action plan, Director appointment
96th SC	17-Jul	NA Action plan, AFID measures
19th B 0f D	4-Sep	Next gen protocol, ChaoJi prototype
97th SC	2-Oct	IEEE/SAE activity, CjaoJi prototype
20th B 0f D	6-Nov	ChaoJi prototype, Next gen protoco
98th SC	18-Dec	Activity report, public relations plan
21st B 0f D	5-Feb	Activity report, 2021 budget
99th SC	12-Mar	Activity report, 2021 budget

Boad members : TEPCO, Nissan, Mitsubishi motors, Toyota, Subaru, HONDA, HITACHI, Panasonic, Dave Yoshida(secretary)

Specification WG

	date	Main Agenda
43rd	26-Jun	Over load current protection
44th	15-Sep	3.0 vehicle requirements, MT5 feedback
45th	8-Feb	1.2.X revision, MT5 feedback
Publishment	5-Mar	Tschnical Manual revision

WG members :
TEPCO(chair), Nissan, Mitsubishi motors, Toyota, Subaru, Honda, Suzuki motors, Mazda, Isuzu, Tesla, Takaoka Toko, Nichicon, Hasetec, HITACHI, Takasago, NS-Texeng, YAZAKI, Sumitomo Electric Industries, Shindengen, Kikusui, Denso TEN, Vector Japan, UL Japan, TUV Rheinland Japan, Mitsubishi Fuso, Mercedes-Benz Japan, Hyundai motors, Yamaha

International High power charging SWG

	date	Main Agenda
6th	27-May	Review of comments for CHAdeMO 3.0 TP
7th	8-Jul	Review of CHAdeMO 3.0 full spec. draft one
8th	31-Aug	Review of CHAdeMO 3.0 full spec. draft two
9th	23-Oct	Review of CHAdeMO 3.0 full spec. draft two
10th	14-Dec	Review of CHAdeMO 3.0 full spec. draft two
11th	12-Feb	Review of CHAdeMO 3.0 final draft
12th	16-Mar	Review of CHAdeMO 3.0 final draft

SWG members :
Nissan(chair), ABB, Vitesco, Tritium, Mitsubishi Fuso, Mercedes-Benz Japan, Delta electronics, TCS, TERTEC, Ekoenergetyka, PSA, GM, COMEMSO,TEPCO, MMC

High power charging SWG

	date	Main Agenda
19th	20-Apr	2020 action plan, technical paper review
	24-Apr	Publication of 3.0 Technical paper
20th	27-May	Ptorotype planning，3.0 draftzero review
21st	6-Jul	Ptorotype planning
22nd	31-Aug	CHAdeMO 3.0 draft 2 review
Sino-Jpn Mtg #5	9/24-25	ChaoJi1/2 study
23rd	16-Oct	CHAdeMO 3.0 draft 2 review
24th	3-Dec	CHAdeMO 3.0 draft 2 review
Publishment	1-Feb	Publication of 3.0 Final Draft
25th	3-Feb	CHAdeMO 3.0 Final draft review
Publishment	20-Feb	CHAdeMO 3.0 Final Draft v2 extract
Webinar	23-Mar	CHAdeMO3.0/ChaoJi2 Webinar

SWG members：
Nissan(chair), Mitsubishi motors, Toyota, Honda, Isuzu, Yazaki, Fujikura, Sumitomo Electric Industries, JAE, Shindengen, NS-Texeng, Nichicon, Hasetec, UL Japan, TUV Rheinland Japan, TEPCO, SUBARU, Mitsubishi Fuso, Mercedes-Benz Japan, HYUNDAI MOTOR JAPAN, Jaguar Land Rover Japan, Takaoka Toko, ABB Japan, Toshiba

HPC protocol SWG

	date	Main Agenda
6th	16-Apr	Action plan
7th	10-Jul	ChaoJi SWG3 report，Use case survey
8th	4-Aug	ChaoJi SWG3 report，Use case survey
9th	1-Sep	ChaoJi SWG3 report，Use case survey
10th	12-Oct	ChaoJi SWG3 report，Use case survey
11th	13-Nov	Communication roadmap
12th	17-Dec	ChaoJi SWG3 report，Use case survey
13th	27-Jan	ChaoJi SWG3 report，Use case survey
14th	25-Feb	ChaoJi SWG3 report，Use case survey

SWG members：
SUBARU(chair), Nissan, TUV Rheinland Japan, Shindengen, Panasonic, Chroma Japan, Suzuki motors, Tesla Japan, TEPCO, Keysight technologies, Isuzu, Vector Japan, Denso Ten, Mitsubishi Electric, Deleta Electronics

ChaJi bi-directional SWG

	date	Main Agenda
Kick-off	29-Oct	Activity planning
2nd	15-Dec	Grid connection, extend function

SWG members：
Nissan(chair), SUBARU, Mitsubishi Electric, Honda, Sumitomo Electric Industries, , DIGITAL PROCESS, TEPCO,

V2H WG

	date	Main Agenda
60th	15-Apr	Guideline2.2 review
61st	19-May	Guideline2.2 review
62nd	10-Jun	Guideline2.2 review
63rd	1-Jul	Guideline2.2 review
64th	8-Jul	Guideline2.2 review
65th	28-Jul	Guideline2.2 review
66th	19-Aug	Guideline2.2 review
67th	27-Aug	Guideline2.2 review
68th	10-Sep	Guideline2.2 review
69th	23-Sep	Guideline2.2 review
70th	6-Oct	Guideline2.2 review
71st	20-Oct	Guideline2.2 review
72nd	11-Nov	Guideline2.2 review
73rd	24-Nov	Guideline2.2 review
74th	2-Dec	Guideline2.2 review
75th	24-Dec	Guideline2.2 review
76th	18-Jan	Guideline2.2 review
77th	2-Feb	Guideline2.2 review
78th	24-Feb	Guideline2.2 review
79th	11-Mar	Guideline2.2 review
80th	24-Mar	Guideline2.2 review

WG members :
Nissan(chair), Hitachi(vice-chair), Nichicon(vice-chair), Honda, Panasonic, Mitsubishi Electric, DIGITAL PROCESS, Sumitomo Electric Industries, TSUBAKIMOTO CHAIN, TEPCO, Takaoka Toko, Mitsubishi motors, Toyota, UL Japan, TUV Rheinland Japan, JET, Idiada, Toyota Industries, Mercedes Benz Japan, ABB, GS Yuasa

Certification WG

	date	Main Agenda
18th	27-Jul	2.0.1 Cerficiation

WG members :
Nissan(chair, secretary), Mitsubishi motors, UL Japan, TUV Rheinland Japan, IDIADA, JET, TUV Sud Japan, Toyo corporation, Chroma Japan, TEPCO, Digital process, Yamaha

Short-circuit current Ad Hoc WG

	date	Main Agenda
Web mtg	7-Nov	Short circuit test plan
Web mtg	26-Nov	Short circuit test plan
Test experiment	28-Nov	Test implementation @ Mitsubishi Electric
Web mtg	17-Jan	Test result evaluation
	26-Feb	Test result report

WG members :
Nissan(chair), Honda, YAZAKI, Fujikura, Sumitomo Electric Industries, Japan Aviation Electronics, Mitsubishi Electric, Mitsubishi motors, Toyota, Isuzu, SUBARU, Shindengen, TEPCO, JET, DIGITAL PROCESS, DAITO Communication(Observer)

Connector SWG

	date	Main Agenda
Review(e-mail)	21-Apr	ChaoJi Water seal measures for ChaoJi
Review(e-mail)	26-May	Connector Performance confirmation for ChaoJ
Review(e-mail)	11-Jun	V2H Guideline
Review(e-mail)	15-Jun	IEC 62893-4-2 commenting
Review(e-mail)	14-Jul	ChaoJi Water seal measures for ChaoJi
Web mtg	30-Jul	Connector Performance confirmation for ChaoJ
Web mtg	19-Aug	3.0 Mating point review
Web mtg	2-Sep	ChaoJi adaptor
Web mtg	18-Sep	ChaoJi Water seal measures for ChaoJi
Web mtg	14-Oct	Inlet Performance confirmation
Web mtg	30-Nov	Modify 3 design proposals
Web mtg	16-Dec	Connector/Inlet Performance confirmation
Web mtg	25-Dec	Connector strength deliberation
Web mtg	25-Jan	Strength evaluation test results
Web mtg	2-Feb	ChaoJi adaptor
Web mtg	19-Feb	ChaoJi lock pin deliberation
Web mtg	5-Mar	Connector/Inlet Performance confirmation
Web mtg	16-Mar	Connector/Inlet Performance confirmation

Connector SWG members：
Fujikura（chair 2021.3～），Yazaki（chair ～2021.3），Sumitomo Electric Industries，Japan Aviation Electronics，SWS, FURUKAWA ELECTRIC

Two-wheeler WG

	date	Main Agenda
18th	14-Apr	Certfication, Protocol check sheet review
19th	12-May	Certfication, Protocol check sheet review
20th	16-Jun	Certfication, Protocol check sheet review
21st	14-Jul	Certfication, Protocol check sheet review
22nd	25-Aug	Connector performance sheet, certification
23rd	13-Oct	Vehicle requirements, Test system
24th	10-Nov	Vehicle requirements, Test system
25th	8-Dec	Vehicle requirements, Test system
26th	12-Jan	Test system, 2021 activity plan
27th	9-Feb	Test specification, Connector performance shee
28th	9-Mar	Test system development schedule

WG members：
Yamaha (chair), TEPCO, Honda, Suzuki motors, Subaru, Takaoka Toko, Nichicon, Shindengen, Kikusui, Sumitomo Electric Industries, TUV Rheinland Japan, Chroma Japan, Aidea, ASTI, Keysight technologies, UL Japan, JET, Digital process

European SC meetings

date	Main Agenda
22-Apr	CHAdeMO PR activity plan 2020, spring event
7-Jul	AFID, CHAdeMO communication strategy, event
12-Dec	AFID, CHAdeMO communication strategy, event
12-Jan	AFID, Tech WG, SC enhancement, event
23-Mar	AFID, Tech SG, SC enhancement, event

SC members: ABB, Idiada, Mitsubishi, Nissan
Observers: Enel, PSA

European Tech WG

date	Main Agenda
10-Nov	Technical updates from each WG leaders

ABB, Alpitronic, AMPERE, APTIV, ARAI, BMW, Chaevi, Circontrol, Daimler, dSpace, Eface, Ekoenergetyka, Enel, Energicamotor, IEEE, Exicom, Fenfeo, Exicom, Fimer, Fujikura, GM, Harting, i-Charge, IDIADA, IES Synergy, Jabil, JAE, Keysight, Lear, Magnumcap, Man, Metasystem,Mitsubishi Motors, Porsche, RTL, Renault, Bosch,SCAME, SGS, Siemens, T-Online, Subaru, Tertec, Tataelxsi, Tesla, Vector, Continental corportation, Wallbox, VGJ, Webasto, Yamaha Motor, Yazaki Europe, TEPCO