



CHAdemo



2018
Activity Report
(1 April 2018 ~ 31 March 2019)



CHAdemo Association

From the President

First of all, I'd like to express my sincere gratitude to all of you for your understanding and continuous support on activities of CHAdeMO association. As you know, our activity has always been focusing on establishing the fast charging standard with technical expandability, while securing safety and interoperability at 1st priority.

And I am also pleased to say that year FY2019 is our 10 year anniversary.

In our history of a decade, the number of CHAdeMO chargers counts 25,300, which is about 80 times as much as that at the first year 2009, and we have now 426 members in 39 countries, 3 times more than 2009. These figures prove that the Association has marked a tremendous growth both qualitatively and geographically.

And FY2018 was also very exciting and dynamic year to us.

Further performance evolution of EVs, as well as vehicle electrification in wider categories of automobiles including large size vehicle are foreseen in near future. With those in mind, in August 2018, the Association engaged an agreement with China Electricity Council to jointly establish next generation ultra-fast charging standard. This standard is designed to be the world unified standard by accommodating variety of fast charging needs in different markets, while securing backward compatibility with existing fast charging standard and maintaining V2X capability. Namely this will be the "Ultimate" fast charging standard.

Stakeholders from both countries have been working together to complete standardization by 2020. The Association decided to adopt this new technology as next generation CHAdeMO protocol.

Moreover, the Association submitted an international specification of pantograph-type high-power charging standard with automatic connecting system for large size vehicles, as well as low-power charging standard for small size vehicles including motorcycles and small vehicles to International Electric Committee (IEC) and we are aiming to publish the protocol in 2019. With this, full line-up of CHAdeMO protocol, covering the variety of vehicle electrification needs, will be completed.



Given the growing demand for promoting the use of renewable energy and stabilizing energy grid, V2X function which enables to incorporate electric vehicles into energy infrastructure is having a crucial role in the global basis. The Association started the new investigations on the items such as the safety requirement for discharging from electric vehicles at higher power, the quality/characteristic of electricity in respective markets, and the specification required, from grid perspective, on electric vehicles upon discharging.

We, CHAdeMO Association, will make more efforts on further development of electric vehicles to be a part of social Eco-System, and on evolution of EV charging infrastructure to make it happen. We would highly appreciate your continuous understanding and support.

Toshiyuki Shiga
President
CHAdeMO Association

Technical Work shop Activities

Following the previous year, the Technical Committee continued to discuss revisions mainly focusing on functionality expansion for high-power charging, and issued a ver.2.0 specification that enables a maximum output of 1kV/400A in May. Furthermore, in August, we agreed with China Electricity Council (CEC) to jointly develop the next-generation charging standard ChaoJi.

As an effort to enhance high-power charging expansion, CHAdeMO had issued ver.1.2 which enables 400A in 2017 and ver.2.0 which enables 1kV in 2018. On the other hand, CEC, an industry group of Chinese electric power companies, decided to work on the development of a 1.5kV 600A ultra-fast charging standard beyond the gradual expansion assuming further future ultra-fast charging technology. CEC also proposed joint research and development to the CHAdeMO, and on August 28, in the ceremony held in Beijing, CEC's Executive President Kun Yang and CHAdeMO's President Toshiyuki Shiga signed the Agreement, which encompasses general collaboration between CEC's GB/T standard and the CHAdeMO standard and more specifically co-operation in the domain of high-power charging.

On 26 October, CHAdeMO participated, together with China Electricity Council (CEC), in the Japan-China Forum on Third Country Business Cooperation held in at the Great Hall of the People (rén mǐn dà huì táng) at Tiananmen Square in Beijing. CHAdeMO's Representative Director, Takafumi Anegawa presented the high-level overview and the objectives of the Agreement between CHAdeMO and CEC, which was incorporated in the official framework of Business Cooperation in Third Countries between the two countries. With strong support by both governments, further acceleration of this joint activity and roll-out of its outcome to third countries are expected.



Furthermore, in order to start the development of new standards for motorcycles and small vehicles, we set up Two-wheeler WG in October and are promoting technology studies and standardization proposals to the IEC. Through these activities, we aim to extend the functionality to cover a wide range of applications from motorcycles to large vehicles and vessels with a unified design concept.

Specifications WG

Specification WG has been deliberating on high power support, and issued the 1kV standard specification ver.2.0 in May, and Test specification ver.2.0 in December. The technical workshop was held at the European General Assembly in October to share information and discuss high-power charging and Plug-and-Charge functional expansion. Eight members of CEC came to Japan on October 30th and 31st to hold the first technology exchange meeting, and in addition to technical discussions, we exchanged views on long-term strategies.

High-power Charging SWG

Following the domestic (UL, Ise) in March 2017, high-power charging tests were conducted in Europe (EVTEC, Switzerland). Five charger manufacturers and four vehicle models (LEAF, Outlander PHEV, Model S with adapter, Soul EV) participated. In addition, in June, we began technical verification of new charging standards in China. The main verification points are the connector mechanical strength and compatibility with current standards. As for verification work, a conference call with China was held monthly from September on the basis of the Japan-China next-generation charging standard ChaoJi joint development agreement. The second technical exchange meeting was held in Changzhou city in March 2019. Fifteen members from CHAdeMO participated, and technical discussions and connection tests of ChaoJi standards were also conducted.

Until now, the Chinese side has been ahead in commercialization, but in 2019, we will also spend 10 million yen on the budget and make prototypes of connectors and adapters, mainly to ensure backward compatibility on the CHAdeMO side.

External Charging SWG

In April, we jointly proposed a pantograph power supply system to the IEC with China. We are working on reflecting the power supply system etc. discussed with the Chinese side in the guidelines.

Connector SWG

Connector SWG evaluated and verified the mechanical strength, dimensional tolerance, and insertion / removal of the coupler and conducted the specification review of the conversion adapter, as the main technical verification items of joint development of ChaoJi.

Plug-and-Charge SWG

As one of the elemental technologies to realize Plug-and-Charge, CHAdeMO standard specification ver.2.0 newly specified CAN communication ID for notifying vehicle ID. In addition, in order to ensure that system inconsistencies do not occur between CHAdeMO and CCS, which use different EV communication methods, SWG activities

have been started by European members from January.

V2H SWG

In fiscal 2018, we have been discussing and revising the V2H guidelines in joint working with EVPOSSA. We issued V2H Guideline 2.1.1 in September, and the verification standard 2.0.1 Japanese edition in December. From January, we have been deliberating a global edition of the guidelines, mainly excluding Japan-specific regulatory items.

Two-wheeler WG

Yamaha Motor became the leader and Two-wheeler WG was established this year as a working group to develop the standard for motorcycles and small vehicles. Both the output voltage range and connector are smaller than CHAdeMO standard specification, and the accuracy of the charging current also becomes strict. Since the technical review within CHAdeMO and the proposal for standardization to the IEC will be carried out in parallel, since the first meeting was held in September, a total of five WGs were held within the fiscal year. With the aim of issuing standards in 2020, we are vigorously promoting standards deliberation, technology development, and dissemination scenario studies.

Activities in IEC standardisation

IEC DC charging standard revision project TC69 MT5 started in 2014, when 61851-23 / -24 were issued. In addition to the establishment of the conformity test standard, which was the initial subject, as with the revised content of CHAdeMO, new items such as high-power charging, multi-arm charger requirement, bidirectional power supply function, etc. have been added and deliberations are still ongoing.

Based on a joint proposal between Japan and China, PT61851-23-1 (automatic connection system, currently discussing mainly large car pantographs), we are discussing the coordination of CHAdeMO, CCS and GB/T.

Activities in IEEE standardisation

In the United States, we have been preparing to launch a project that aims to create a certification common with the CHAdeMO certification following the publication of CHAdeMO-compliant DC charging standard IEEE 2030.1.1 with Nissan, Mitsubishi Motors US, Tritium and UL.

Along with the full-fledged start of the Conformity Assessment Steering Committee in 2019, we plan to revise the CHAdeMO extended functions, such as high-power and bi-directional charging.

Public relations activities

Cooperation to regional events

On April 22nd, we participated in the research facility open event of the Traffic Safety and Environment Research Institute for National Research and Development Corporation of the Ministry of Land, Infrastructure, Transport and Tourism. We introduced demonstrations that supply electricity from EVs, PHEVs, and FCVs as an effort using CHAdeMO technology, and a large number of families were on a tour with great interest.



EV Super Seven feeding tour

The Japan EV Club conducted “Traveling through the Tohoku afflicted area with electric vehicle – EV Super Seven” on May 17-31. The purpose of the event was to run while camping on the Pacific coast from Tokyo to Omazaki, the northernmost tip of Honshu, with a schedule of about two weeks, and to visit the symbolic location of the tsunami affected area.

The electric vehicle accompanying EV Super Seven lights up the monument with CHAdeMO's bi-directional charging function to pray for the quell of the victims, and also appeals the bi-directional charging function (V2X) of EV or PHV at the time of disaster, CHAdeMO co-sponsored as event sponsor.



2018 General Assembly

The general Assembly of 2018 was held on May 30 at Grand Nikko Tokyo in Daiba. As a keynote speech, Mr. Ishikawa, Director Electric vehicle and Advanced Technology Office, METI, made efforts to disseminate next-generation vehicles, and Representative director of CHAdeMO, Tokyo Electric Power Grid Vice President Mr. Okamoto, giving a lecture on the future of the energy industry for decarbonizing "Utility 3.0". Also, at the reception, IEA Senior energy and transport analyst Piepaolo Cazzola introduced the Global EV Outlook 2018, which was released the day before. At the reception hall, eight member companies exhibited technology.



Technical support in Asian countries

CHAdeMO's Representative Director, Takafumi Anegawa and Tomoya IMAZU, the Head of CHAdeMO Technical WG participated in the MOVE (New Mobility Related Conference hosted by Prime Minister Modi) held in India on September 7 and 8 and introduced the technical development of CHAdeMO. From October, the Grand Challenge project has been launched, which calls for AC / DC and charge standards covering a wide range of vehicles from small vehicles to large vehicles for the spread of electric vehicles. CHAdeMO has proposed to support the development of a verification system of the charging system that will lead to the development of standards and the development of industries that are compatible with India's extension plans and regional circumstances. This year, we plan to strengthen our support system locally.

On January 29, the EV Forum of the Indonesian Ministry of Industry was held in Jakarta. Dave Yoshida, Secretary General of CHAdeMO, made a presentation and introduced the world development of CHAdeMO.



EVS31 in Kobe

The EVS 31 event on September 30 was canceled due to the impact of Typhoon No. 24 and it was held for 2 days. The CHAdeMO booth was a joint exhibit by 13 member companies, and introduced the activities of the CHAdeMO Association, such as EVs, chargers, connectors, development tools, and certification systems, in many ways. In addition, we were interviewed by many media, as it has been a short time since the Japan-China ChaoJi co-development press announcement.



Measures for high-power charger installation

The Fire Prevention Ordinance stipulates special measures for installation conditions after evaluating the safety of CHAdeMO certified chargers with an output of 50 kW or less. In June, the Tokyo Fire Department, an observer of CHAdeMO, established a study group to evaluate the safety of the installation of high-power DC fast chargers ahead of the government and other local governments. Dave Yoshida, Secretary General of CHAdeMO, participated as a member of the committee, and several charger manufacturers participated in the work group to conduct technical study.

The points of the examination were whether the increase in internal heat generation and the increase in intake and exhaust of cooling due to the expansion of the opening of the casing would be the risk of firefighting activities as burning matter.

As a result of the examination at the work group and the combustion experiment, a report that no apparent increase in risk was recognized was concluded in March 2019 and the special measures based on the conventional 50kW or less charger will be applied. In addition, similar measures are expected to be deployed nationwide in 2019 under the initiative of the Ministry of Internal Affairs and Communications.

Infrastructure WG Activities

Infrastructure workshops of 2018 held in September, February.

In the 31st in September, the latest trends in the main technical policies of the CHAdeMO Association were introduced: High-power cables, development cases of V2X systems combined with stationary storage batteries and solar power generation were introduced, and the activities of newly started Two-wheeler WG were reported.

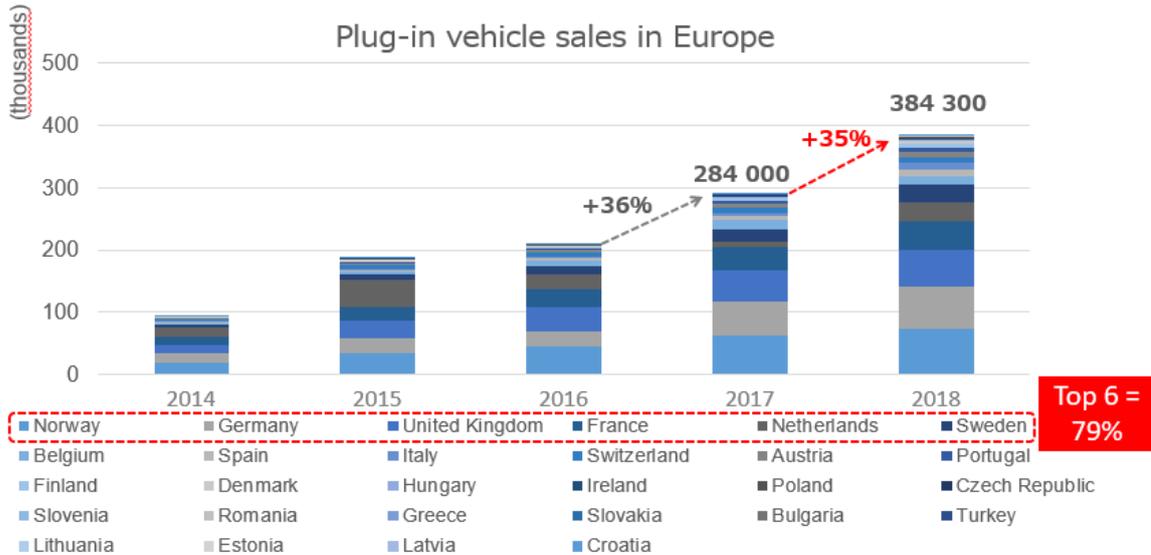
The 32nd in February was held at Toyota Motor Ikekukuro Building. Presentations were made on a wide range of topics such as the spread of electric vehicles, the latest trends in charging infrastructure in the world, development of high-power charging, development tools such as simulators, and charging station search services. There were more than 200 participants, the largest number in the last few years.



CHAdEMO EU Office Report

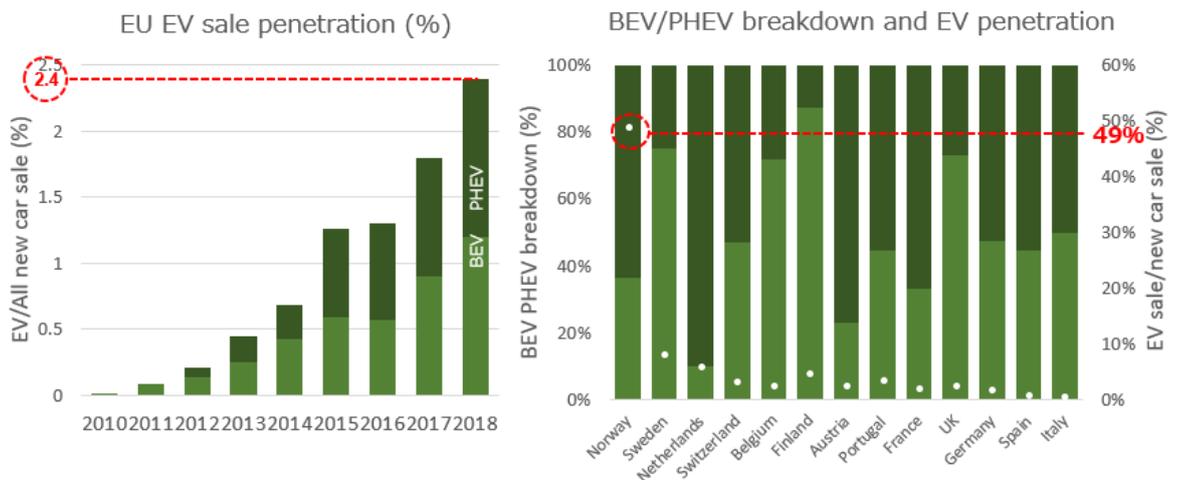
European EV market continues its growth path

The plug-in car sale in Europe has continued its high growth in 2018 with an increase of 35% from 2017, surpassing the 300 000 mark for the first time and achieving a million cumulative EVs on the road. Four out of five of these vehicles were sold in the top six markets, with Norway remaining the market leader.



Note: Passenger cars only. Source: ACEA, IEA EV Outlook 2018, JATO

However, in terms of the penetration rate over all the new car sales, it remains below 3%, with Norway being an outlier with one out of every two new cars sold being a plug-



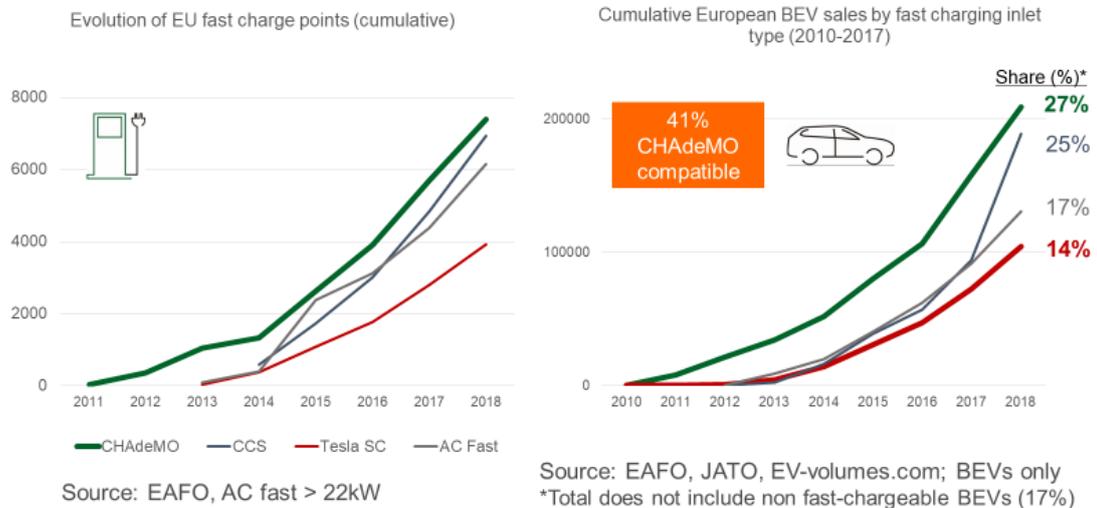
Source: EAFO (EU28+EFTA+Turkey), ACEA (EU24+EFTA)

in vehicle.

CHAdeMO: the most compatible plug in the world and in Europe

Looking at the global fast-chargeable battery EV market (2.4 million cars), vehicles equipped with a CHAdeMO inlet held 22% market share, the same as Tesla. As Tesla vehicles are compatible with CHAdeMO via their adapter, CHAdeMO remains to serve the biggest part of the market both globally and in Europe, where Nissan Leaf and Mitsubishi Outlander PHEV were the top-selling BEV and PHEV respectively in 2018.

CHAdeMO charge points and plug-ins in Europe

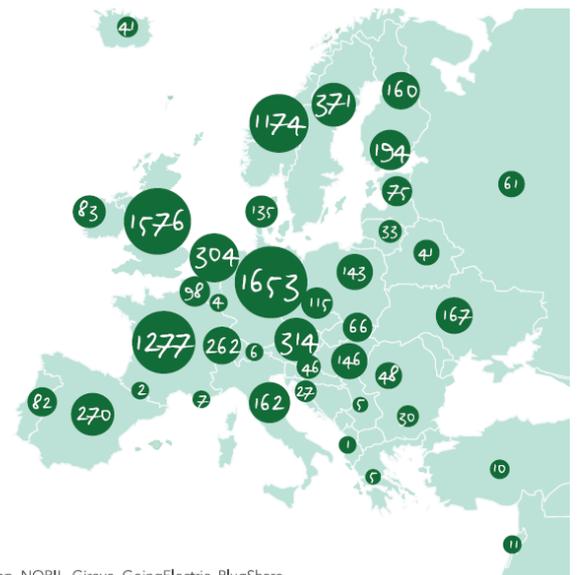


CHAdeMO charge points in Europe cross the 9K mark

DC fast charger installation continues to accelerate in Europe. Europe has overtaken the Japanese installation (7600) last autumn and keeps widening its lead as it crossed the 9000 line.

9200
TOTAL CHADEMO CHARGE POINTS IN EUROPE

In the European market, multi-standard chargers equipped with both CHAdeMO and CCS Combo2 connectors have become the de facto standard. However, in the ultra-high-power category over 150kW many chargers have only CCS plugs.

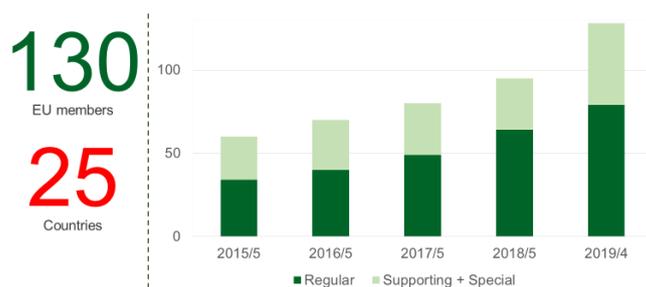


Note: as of April 2019
Source: ChargeMap, EAFO, Zap-Map, NOBIL, Gireve, GoingElectric, PlugShare

EU members grow rapidly

In Europe, the number of CHAdeMO members has grown by 35% in the past 1.5 years. In recent years, we receive more and more enquiries from Eastern European and Middle Eastern countries. With this trend in mind, we adapt the frequency and content of the information we send and continue to improve our communication.

CHAdeMO members in Europe



Various 2018 CHAdeMO events and meetings took place in EU

▪ European annual member meeting #9 (Munich, 17 October)

Our 9th annual member meeting took place on 17 October in Munich. This year, we compacted two meetings (European Technical WG meeting (see below) and Annual Member Meeting 9) in one afternoon. Takafumi ANEGAWA, the Representative Director of CHAdeMO has told the friendly group CHAdeMO's strategy and philosophy, while CHAdeMO EU Secretariat reported the EV and EV charging infrastructure state of the market in Europe. The new member pitches became a tradition at our annual meeting, and were well received again this year, accelerating networking among the CHAdeMO members.

▪ EU Technical WG meeting/HPC connection test event (Lucerne, 19-21 June)

As ultra-high-power charging is a hot topic, CHAdeMO Europe organised a high-power connection test event at EVTEC's office in the outskirts of Lucerne. Four prototype and production vehicles were cross-tested with five ultra high-power chargers (CHAdeMO ver. 1.2 – 2.0) using production type, non-cooled high-power CHAdeMO connectors. All tests were successful and close to 300A and over 100kW of charging using the "boost mode" was observed. Other key functionalities such as



dynamic charging control and V2X were also confirmed.

During the Technical WG workshop that took place on the last day of the testing event, Dave YOSHIDA, Secretary General of CHAdeMO, spoke about CHAdeMO's

global strategy, while Utaka KAMISHIMA, Chair of High-Power Charging SWG reported the activities of the Technical WG as well as the high-power CHAdeMO specification details. Other presentations and demonstrations followed, such as the new high-power CHAdeMO cables (including a liquid-cooled one), V2H energy optimization system for buildings and R&D support tool. Overall, 76 people from 31 companies joined this information sharing and networking event.

- **EU Technical WG meeting (Munich, 17 October)**

The Autumn Technical WG meeting took place on 17 October at Messe München, where a CHAdeMO hosted a joint member stand for the occasion of eMove360°. Tomoya IMAZU, the Head of CHAdeMO Technical WG has reported to the group the results of the testing event, further characteristics of high-power CHAdeMO specs, and explained the details of CHAdeMO's development plans for the new-generation ultra-high-power charging in collaboration with China Electricity Council (CEC), especially around the detailed target specs and how to ensure backward compatibility. There was also a great deal of exchange around the Plug-



and-Charge (PnC) functionality, which led to the PnC Task Force (see below).

- **Plug-and-Charge (PnC) Task Force kick-off meeting (Frankfurt, 15 January 2019)**

In the Technical WG meeting held in Munich, it was decided to create an EU Task Force on CHAdeMO PnC. The Vehicle ID SWG evolved into this new TF, with Uwe LIKAR as the Chair and 13 companies joining. Its kick-off F2F meeting was held on 15 January at Mitsubishi Motors R&D Center, in which the team members examined the six proposals submitted to the TF and agreed on its activity directions. The TF continues to meet every other month, preparing its recommendations for the Specifications WG.

- **CHAdeMO joint stands at trade fairs 2018**

This year, CHAdeMO EU hosted its joint booths, now well-known as the convenient one-stop destination for visitors, at Hannover Messe and emove360°, as requested by our EU members.

- **Electric Transportation Systems, Hannover Messe (Hannover, 23-27 April)**

Six member companies joined in our 54-sqm stand, which was our 6th Hannover Messe participation. Surrounding a Nissan Leaf were various CHAdeMO products, including semi-fast (22kW-25kW) to high-power

(100kW+) chargers, of which one equipped with a PV roof, were displayed along with fast charging and V2G power modules.



- **eMove360° (Munich, 15-17 October)**

At eMove360° 2018, we hosted a compact 32-sqm stand with members from Belgium, Italy, Germany, Netherlands and Portugal. The CHAdeMO-flavoured products on the stand were two V2G power conditioners (one being wall-hanging), a high-power CHAdeMO charger providing 100kW, power modules and R&D testing tool, all of which attracted a great number of visitors. Our member meeting was held during eMove360°.



PR/communication activities continue with PR tool touch-up

As the interest for electromobility intensifies among the general public and the ever-increasing members of the Association, CHAdeMO EU continues to push forward its PR/communication efforts to disseminate information about CHAdeMO with its enhanced tool.

- **Conference presentations**

CHAdeMO speakers were welcomed at numerous key e-mobility events in Europe this year. In April, Tomoko BLECH, CHAdeMO EU Secretary General, was invited to present at **E-mobility Charging Infrastructure Europe 2020** in Berlin. In June, Dave YOSHIDA, CHAdeMO HQ Secretary General, also visited Berlin to present at **EV Momentum**, while Takafumi ANEGAWA, the Representative Board Member, was

one of the guest speakers on the Smart Charging panel at the UK's first ever **Zero Emission Vehicle Summit** in Birmingham in September. He also presented on V2G at the UK's biggest e-mobility event **Genex LCV** in Milton Keynes, where the panel not only filled the room but had the enthused audience sitting on the floor and standing around the spare space. Later in September, Tomoko was summoned for a presentation at **E-Mobility Charging Infrastructure 2020 UK**, again in Milton Keynes, before she presented her poster on the DC fast charging infrastructure deployment post EU's Alternative Fuels Infrastructure Directive at **EVS31** in Kobe. In October in Munich, Tomoya IMAZU, the Head of CHAdeMO's Technical WG presented at **eMove360 World Mobility Summit**, while Tomoko gave further presentations in Risø at the occasion of **VGI Summit** hosted by DTU in November, as well as at **KfW's Development Finance Forum 2018** in Frankfurt at the end of the year.

- **Contributions for international organisation reports and for the standardisation efforts by various governments**

Starting 2018, CHAdeMO took on the reviewer role for international organisations' reports, including the Global EV Outlook published by the International Energy Agency (IEA) based in Paris, as well as the first publication of **Innovation Outlook Smart Charging EV** by the International Renewable Energy Agency (IRENA). At the government level, after responding to the call for public comments by the government of India regarding the charging technology standardisation, CHAdeMO is participating in the Grand Challenge to propose an India-specific charging protocol design. We are also regularly asked for expert inputs by other government organisations. CHAdeMO makes its best efforts to respond to questionnaires and interviews by research companies and newspapers in order to benefit from all and every channel of communication.

- **Brochure design light touch-up**

Celebrating CHAdeMO's decade-long in-market experience, we have given the English brochure a slight face lift. We have created a small 10-year celebration symbol, changed the dark green characters to lighter green, adding further light shades and lightening the pictograms.

The content of the brochure was also updated to cater not only to our members but also to the interest of R&D experts of potential member companies as well as the general public, using simple wording.



Before

CHAdeMO ASSOCIATION & PROTOCOL In a nutshell

Who we are

We are an e-mobility collaboration platform around CHAdeMO DC charging protocol. As an ecosystem of companies offering CHAdeMO-related products and services we work together to promote and enable electric mobility on a global scale.

What we do

-  **WE DEVELOP THE PROTOCOL** adapting it to the market needs and our members' requests.
-  **WE CERTIFY CHARGERS** ensuring compatibility between the infrastructure and the EVs.
-  **WE PROMOTE FAST CHARGERS** by actively disseminating their benefits and data through various communication channels.

About CHAdeMO Protocol

CHAdeMO is a DC charging protocol currently enabling EV charging with power from 6kW to 200kW (400A x 500V) with a possibility from 6kW to 400kW (400Ax1000V) in preparation. It follows 4 principles:



SAFETY

CHAdeMO believes that in the context of high power, electrical safety is crucial and mandates strict guidelines in designing chargers.



FUTURE-PROOF

CHAdeMO is Smart Grid-ready through its bi-directional charging capability. It is also compatible with any local or optional functions beyond charging.



EASE OF APPLICATION

The protocol works with CAN communication, making its integration with the rest of the car easy and reliable.



UNIFORMITY

CHAdeMO connector is identical across the globe and is a stand-alone plug that can be with or without an AC connector. It saves costs for EV makers and enables cross-continental EV travels.

After

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About CHAdeMO Protocol

World's 1st DC charging protocol

Enabling EV charging from 6 to 400kW (400A x 1kV) **preparing for 900kW (900A x 1.15kV)** *COLLABORATION WITH CHINA*

for vehicles of all size 

and various applications 



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Activities in FY 2018

	2018 Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2019 Jan	Feb	Mar
Board of Directors		★	★				★		★			★
Steering committee				★							★	
General Assembly		★(5/30) General Assembly						★(10/17) European meeting				
Technical Workshop		★(5/29) Specifications Ver.2.0		★(6/19-21) HPC test in Europe			★(10/30) ChaoJi F2F Meeting#1@Tokyo		ChaoJi F2F Meeting#2@Changzhou(3/5)★			
						★Japan-Germany JTWG (7/3)	★(9/14) V2H Guideline ver.2.1.1		★(12/12) Test Specification for V2H 2.0.1			
									★(12/17) Test Specification ver.2.0			
Infrastructure Workshop					★(8/9) #31@Yokohama					★(2/9) #32@Tokyo		
International standardization												
IEC TC69/MT5	★Tokyo	★Frankfurt							★Fremont			
IEC PT61851-23-1 (Pantograp	★Tokyo		★Krefeld, Germany						★Kista, Sweden			
TC69/PT63110 (Smart Grid)	★Toronto		★Berlin				★Hangzhou					★Fremont
62196-1, -3 (Coupler)			★62196-3-1@Seoul			★62196-1,-3@Guangzhou			★			
Certification test			★Delta Electronics			★Tsubakimoto(V2H)		★Shindengen		eNovates(V2H)★		
						★IKS(V2H)		★Delta Electronics				
							★Nichicon(V2H)					
PR activity, etc.	★National Traffic Safety Lab.(4/9)					★Cenex LCV@Millbrook (9/13)				★Smart Grid EXPO(2/27)		
	★Hannover Messe(4/23-27)					★EVS31@KOBE (10/1-2)				★AMEICC Automotive WG(3/)		
	★German-Japanese Environment and Energy Dialogue Forum					★eMove360@Munich(10/16-18)						
	★E-mobility Charing Infrastructure Europe(4/24)					★Ministry of the Environment, Singapore (10/18)						
		★EV Momentum19th@Berlin(6/21)				★APEC EV Workshop@Chiang Rai(11/6)						
					★BS Fuji Prime news(8/31)			★Development Finance Forum@Frankfurt(12/18)				
					★Global Mobility Summit@Delhi (9/6-9)			★Indonesia-Japan Automotive Seminar(1/29)				
					★Zero Emission Vehicle Summit@Birmingham(9/12)							

Board meetings/WG

Board of Directors / Steering committie

	date	Main Agenda
9th B Of D	11-May	FY2018report, Action plan, Financial statement
Constituent Mem	30-May	Financial statement, Director appointment
90th SC	6-Jul	PR Activity report, Seminar in India
10th B Of D	9-Oct	Auditor change, Activity report
11th B Of D	21-Dec	Director change, India Grand Challenge
91st SC	1-Feb	Activity report, Japan-China co-development
12th B Of D	8-Mar	Activity report, India Grand Challenge

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

Infrastructure Workshop

Date	Particip ant	Main agenda	Presenter
31st 9-Sep	132	Greetings	Representative Director Takafumi Anegawa
		V2X system integrating stationary battery equipment	DAIHEN ELECTRIC SYSTEM Corporation
		Nichicon Tribid System	NICHICON CORPORATION
		Rated 200A CHAdeMO cable Assembly	Sumitomo Electric Industries
		HPC charging system development	Marubeni Corporation
		Light electric vehicle WG Activity report	Yamaha Motor Powered Products
		Usage situation and problems of QC on highways	Japan Charge Network
		CHAdeMO Association Activity report	CHAdeMO secretary
32nd 9-Feb	209	Greetings	Representative Director Takafumi Anegawa
		Electric vehicle promotion activities at Toyota	Toyota Motor Corporation
		Global Charging Infrastructure Trends	Bloomberg NEF
		V2L system for FC bus	Toyota Industries Corporation
		Development of high power charging	Sumitomo Electric Industries
		CHAdeMO Ver.1.2 EVSE/EV simulator	TOYO Corporation
		TCS experience in Vehicle Electrification and Contribution to CHAdeMO technologies	TATA Consultancy Services
		Higher navigation service according to SOC	Ayudante, Inc.
CHAdeMO Association Activity report	CHAdeMO secretary		

Specifications WG

	date	Main Agenda
33rd	14-Apr	ver.2.0 comment review, Vehicle certification
34th	25-May	ver.2.0 comment review
	29-May	Publicaioin of Specification 2.0
35th	29-Jun	Test Specification 2.0, Technical manual review
36th	14-Sep	IEC MT5 feedback, Test specification review
37th	4-Dec	IEC MT5 feedback, Test specification review
	17-Dec	Publicaioin of Test Specification 2.0
38th	27-Feb	IEC MT5 feedback, Specification 2.0.1 revision

WG members :

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

External charge SWG

	date	Main Agenda
4th	12-Apr	61851ANNEX_AA, EV bus Technology trend

SWG members :

Hasetec(chair), Nissan, TEPCO, SUBARU, Isuzu, Mitsubishi motors, Sumitomo Electric Industries, JET, ENEL

High power charging SWG

	date	Main Agenda
DEMO	6/19-6/21	Europe high-power test event
1st	29-Jun	Schedule, GB/T new coupler Introduction
2nd	26-Aug	Backwar compatibility, new coupler / adapter
WebEx#1	3-Sep	New coupler dimension, Adapter
3rd	26-Sep	Press report, New coupler / adapter evaluation
WebEx#2	9-Oct	Heat management, IEC MT5, voltage deviation
Sino-Jpn Mtg #1	10/30-31	JTWG set up,backward compatibility, Control pilot
4th	20-Nov	Backward compatibility, Adapter evaluation
WebEx#3	5-Dec	CAN, Control pilot, Coupler evaluation
5th	19-Dec	CP, Coupler evaluation, Temperature regulation
WebEx#4	10-Jan	Test progress, Coupler evaluation
6th	30-Jan	Temperature regulation, Coupler DA analysis
WebEx#5	14-Feb	Test progress, Adapter evaluation
Sino-Jpn Mtg #2	3/5-3/6	New coupler / adapter evaluation, Test event
ChaoJi Mtg	27-Mar	ChaJi meeting for Japanese member
Web Conference	28-Mar	ChaJi meeting for overseas member

SWG members :

Nissan(chair), Mitsubishi motors, Toyota, Honda, Isuzu, Yazaki, Fujikura, Sumitomo Electric Industries, Japan Aviation Electronics, Shindengen, NS-Texteng, Nichicon, Hasetec, UL Japan, TUV Rheinland Japan, TEPCO, SUBARU, HYUNDAI MOTOR JAPAN, Jaguar Land Rover Japan, Takaoka Toko, ABB Japan, TE Japan, Toshiba

Connector SWG

	date	Main Agenda
Review(e-mail)	5-Apr	IEC62196-3 comment
Review(e-mail)	3-Jun	New connector technology verification
Review(e-mail)	4-Jul	New connector technology verification
Review(e-mail)	22-Oct	Chaoji connector technology verification
Review(e-mail)	26-Nov	Chaoji adapter technology verification
Review(e-mail)	6-Dec	LEV connector review
Review(e-mail)	26-Dec	Chaoji adapter prototype review
Review(e-mail)	4-Feb	Standards for DC charging cable review
Review(e-mail)	25-Feb	V2H Guideline revision

Connector SWG members :

Yazaki (chair), Fujikura, Sumitomo Electric Industries, Japan Aviation Electronics, DAIDEN, FURUKAWA ELECTRIC, TE Japan, TEPCO

V2H WG

	date	Main Agenda
42nd	17-May	V2.1.1 Draft2 comment
43rd	21-Jun	V2.1.1 Draft2 comment, IEC report
44th	23-Aug	V2.1.1 review, V2H Test specification revision
	14-Sep	V2H Guideline 2.1.1 JP edition published
45th	18-Oct	V2.1.1 review, V2H test Specification, V2.2 revision
46th	29-Nov	V2H Test specification review, V2.2 revision
	12-Dec	V2H Test specification JP edition published
47th	31-Jan	V2.2 review, V2.1.1 Global edition review
48th	7-Mar	V2.2 review, V2.1.1 Global edition review

WG members :

Nissan(chair), Mitsubishi motors, Toyota, Honda, Hitachi, Mitsubishi Electric, Takasago, Nichicon, Hasetec, YAZAKI, Sumitomo Electric Industries, Toyota Industries, Panasonic, Sharp, TSUBAKIMOTO CHAIN, TEPCO, Takaoka Toko, UL Japan, TUV Rheinland Japan, JET, DIGITAL PROCESS

Certification WG

	date	Main Agenda
16th	7-Mar	Cerficiation Test Guideline revision

WG members :

Mitsubishi motors, UL Japan, TUV Rheinland Japan, IDIADA, JET, TEPCO, Nissan(chair, secretary)

Two-wheeler WG

	date	Main Agenda
1st	9-Oct	Appointment of Chair, confirmation of goal
2nd	28-Nov	Draft specification review
3rd	16-Jan	Draft specification review
4th	12-Feb	Draft specification review
5th	12-Mar	Draft specification review

WG members :

Yamaha (chair), TEPCO, Honda, Suzuki motors, Subaru, ADIVA, Takaoka Toko, Nichicon, Hasetec, Shindengen, Kikusui, ASTI, Sumitomo Electric Industries, TUV Rheinland Japan, Chroma Japan (as of end of march 2019)

European SC meetings

date	Main Agenda
16-Apr	HPC test, PR strategy, spring events
10-Jul	Spring event reports, autumn events
10-Oct	Autumn event planning, member meeting
10-Dec	Autumn event reports, communication strategy
7-Feb	Communication strategy, EU tech event

SC members: ABB, ESBeCars, Idiada, Mitsubishi, Nissan
 Observers: Enel/Endesa, PSA

European Tech WG

date	Main Agenda
6-Sep	ISO 15118 telco
15-Jan	PnC Task force #1 meeting
28-Mar	PnC Task force #2 telco

WG participants:

ABB, BP, Delta Electronics, Fortum Plugsurfing, Jaguar Land Rover, Mitsubishi Motor R&D Europe, Nissan, Nuvve, PSA, Subaru Corporation, Shell/the New Motion, Tritium, Vector Informatik, Wallbox

International Strategy WG

date	Main Agenda
3-Dec	Global snapshot, principles of WG

WG participants:

FaBSCo, Honda Motor Company, Mitsubishi Motors Corporation, Nissan, Sumitomo Electric Industries, Takaoka Toko, Tepco UK, Yazaki