CHAdeMO

2012 Activities Report

(April 1, 2012 - March 31, 2013)

CHAdeMOAssociation

From the President

First, I would like to extend my deepest gratitude for your continual support of CHAdeMO Association's EV promotion activities.

In accordance with our 2012 fiscal year objective titled "Enhanced Transparency", we have made every effort to ensure that all of our activities are as transparent and open as possible. In addition, we have successfully registered CHAdeMO specifications as a JIS TS (technical specification) and expect to be published as an IEC international standard later this year.

We have also created a CHAdeMO Association common communication package which served to reinforce our message during a series of PR tours to various stakeholders in Europe.

In January 2013, we were proud to announce the attainment of the 2,000 mark of DC fast charger installations. A large part of the 1,000 unit increase over the past year came from outside of Japan, notably from Europe. We expect this number to double to 4,000 worldwide by the end of 2013.

CHAdeMO Association will continue to push forward with the deployment of charger infrastructure to help bolster the diffusion of electric vehicles for the cause of global warming prevention.

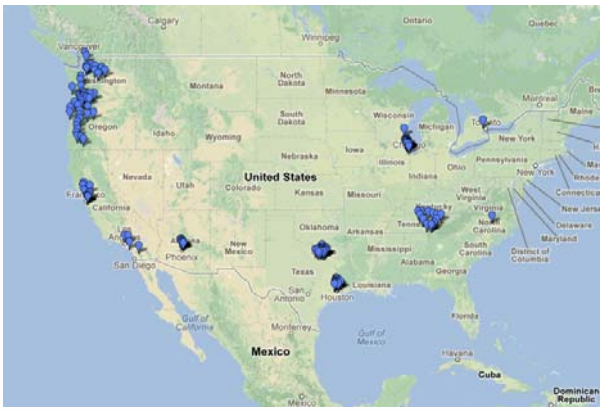
Your continued understanding and support will be greatly appreciated.

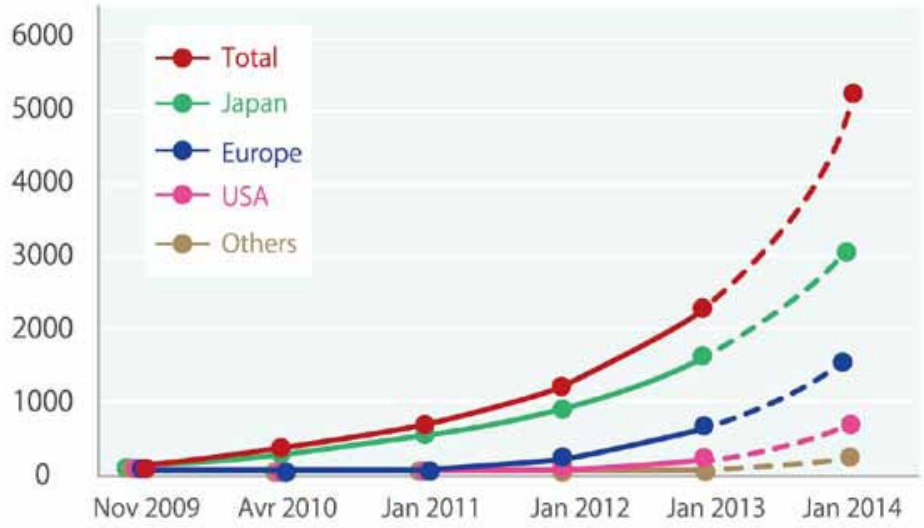
Toshiyuki SHIGA
President
CHAdeMO Association

2,500 CHAdeMO units installed

CHAdeMO charger installation accelerated this year in Europe and North America, as it is today the only commercially available fast charge technology; 2,500 units have already been installed as of March 2013

It took us 2 years to achieve the 1,000th mark since our inauguration, and most of those initial 1,000 units were installed in Japan. However, after this, the majority of the 1,500-unit installations took place in Europe and North America. We expect the pace of installations to further accelerate and exceed 4,000 units by the end of the year.





Fast charge infrastructure: indispensable to EV diffusion

As of March 2013, 40 fast charger manufacturers have been globally developing and distributing fast chargers. Depending on the installation site or the users' needs, a wider variety of products are developed, such as smaller chargers, separate chargers, medium-sized chargers, and chargers with storage batteries.

								
ABB (Switzerland)	EVTRONIC (France)	Efacec (Portugal)	Aerovironment (America)	Aker Wade (America)	ECOtality NA (America)	SGTE (France)	Delta Electronics (Taiwan)	Petrotec (Portugal)
								
GH Electrotermia (Spain)	MAGNUM CAP (Portugal)	Siemens (Germany)	Schneider (France)	IES Synergy (France)	DBT (France)	Circontrol (Spain)	EVTEC (Switzerland)	Andromeda (Italy)
								
SIGNET Systems (Korea)	JoongAng Control (Korea)	PNE SOLUTION (Korea)	Enegate	DENGEN				
								
Hasetec	Takaoka	Takasago	NS-ELEX	Kyuden Technosystems	RELIANCE ELECTRIC	Fuji Electric	SINFONIA TECHNOLOGY	NEC
								
Nichicon	Nissan	GS Yuasa	JFE Engineering	Kikusui	NTT Facilities	HITACHI	San-Eisha	YASKAWA Electric

CHAdeMO-compatible EVs

During Fiscal Year 2012, we counted 8-CHAdeMO compatible EVs in Japan, including fleet use. In FY2013, the global EV market is expected to undergo significant growth. For example, in Europe, PSA Peugeot Citroën has already started the assembly of their new EVs (Partner / Berlingo) at their plant in Spain.

Mitsubishi MINICAB MiEV

Mitsubishi i-MiEV

Nissan LEAF

Mitsubishi MINICAB MiEV Truck

Peugeot iOn

Citroen C-ZERO

Citroen Berlingo

Peugeot Partner

MAZDA DEMIO EV

HONDA Fit EV

TOYOTA eQ

Mitsubishi Outlander PHEV

BD Otomotiv eFiorino

BD Otomotiv eKANGOO

BD Otomotiv eSCUDO

BD Otomotiv eTRAFIC

BD Otomotiv eDUCATO

Micro-Vett Ducato

Micro-Vett Fiorino

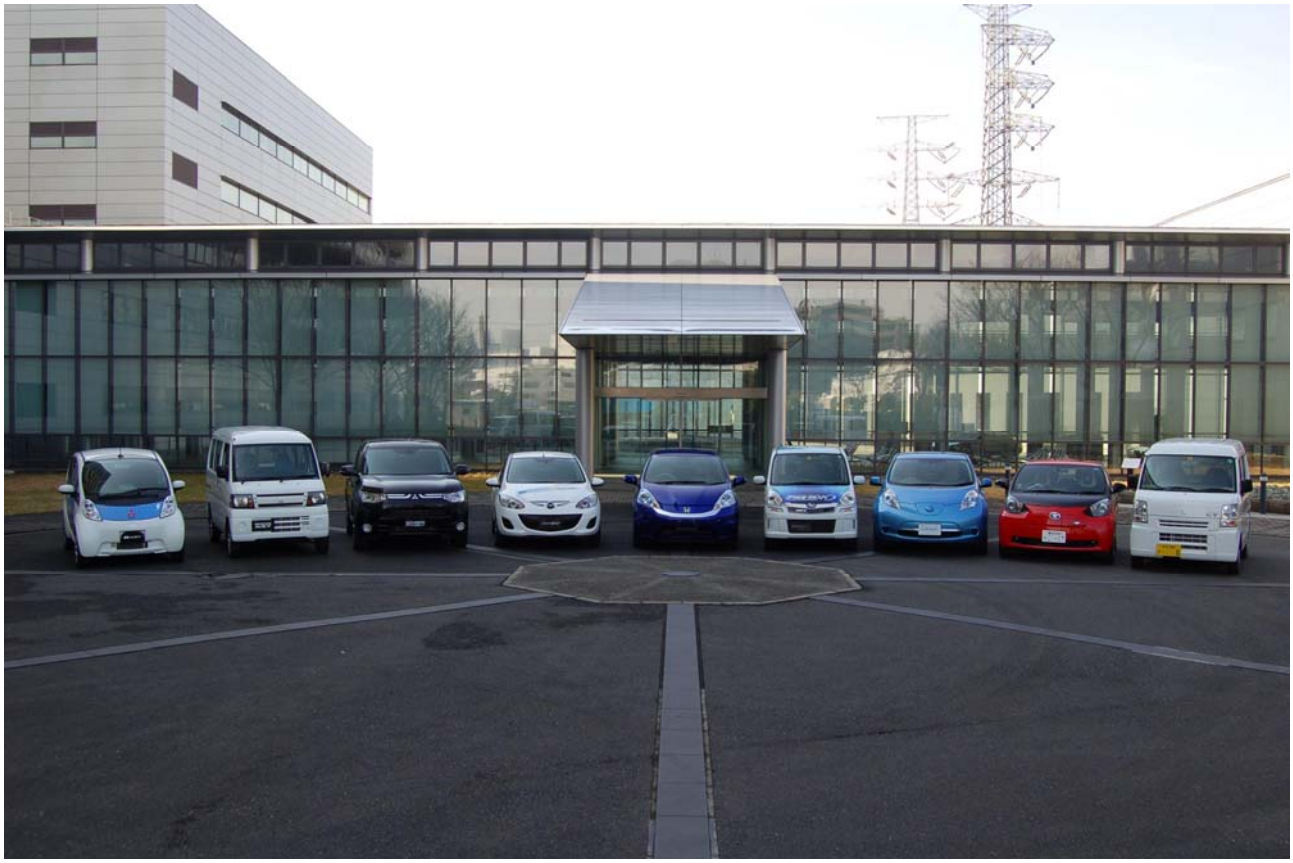
Protoscar LAMPO2

Technical Workshop Activity

CHAdeMO Specifications ver.1.0.・Certification WG

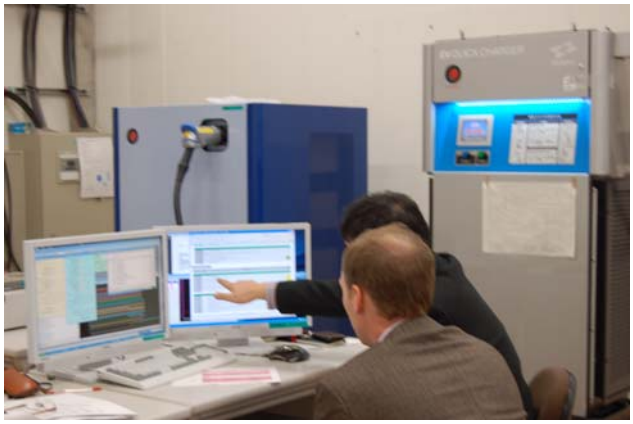
After the publication of CHAdeMO Specifications ver.1.0 in January 2012, the Technical Workshop held 19 meetings to formulate the test specifications and discuss the revisions during FY 2012. The publication of the specifications for the certification test is behind schedule, but slated for completion by April 2013.

The Certification WG had worked on developing the certification system to realize the certification test by a third party, which was cited as one of the 2012 action plans. In 6-7 February, 2013, the WG conducted a system verification and connection test between ver.1.0-compatible chargers and EVs. Nine CHAdeMO-compatible EVs of seven auto manufacturers gathered for the test, and the charting operation function, safety and EMC were also verified.



（From the left Mitsubishi i-MiEV, MINICAB MiEV, OUTLANDER PHEV, Mazda Demio EV,
Honda Fit EV, SUBARU Plug-in Stella, Nissan Leaf, TOYOTA eQ, Suzuki EVEVERY）

Based on the basic design prepared by the Certification WG for the ver.1.0 certification system, Takaoka Electric produced the hardware, and Vector Japan developed the software. In February 2013, a connection test was conducted with the fist ver.1.0-compatible quick charger (NS-ELEX).

Certification system development




Connection test between a quick charger and a EV

Activities for International Standardization

JIS TS D0007

In August, 2012, the Japanese Industrial Standards Committee (JISC) held its Automobile Technology Committee to determine that the CHAdeMO standard specification for DC fast chargers shall be issued as its Technical Specification (TS). On September 20, 2012, CHAdeMO Specifications was officially issued as a JIS Technical specification (TS D0007).

TS approval allows for the specification to be disclosed faster than the normal JIS standard, and CHAdeMO would be recognized as an official standard in Japan. Furthermore, this would boost EV promotion activities.

IEC61851-23, -24

Review of the CDs were mostly done at the Tokyo meeting (17-24/05/2012), and then 23 and 24 moved to the CDV stage. Requirements for insulation monitoring and methods to detect grounding faults were the main issues at the stage.

The CDVs of 23 and 24 were approved by vote on February 2013, and discussions toward FDIS, which is the final phase, will be conducted at the Toronto meeting on April 2013.

Future prospects

The European commission has announced a draft of the directive recommending that the Combo system become the standard for DC fast charge by the end of 2017 in Europe. However, many European countries and regions have already introduced CHAdeMO, and over 20,000 electric vehicles are currently on the road. In addition, it is not certain when Combo-compatible EVs will be mass-produced for the market. Therefore, some European and North American charger manufactures have announced that they will produce a dual charger compatible with both CHAdeMO and Combo.

Connector WG

In the Connector WG, members have shared their problems and concerns, improved their connectors and then organized the requested specifications for the CHAdeMO connector. As one example, based on EV user comments, by adding a functional requirement to check the connection status with a vehicle, they improved usability without compromising on safety by simplifying the connection in a single action. Also acquisition of UL approval and CE marking has been encouraged at the WG with a view to overseas market expansion.

As for the standardization, the connector's shape and dimension was reflected into the TS D007 Annex E in conjunction with the publication of CHAdeMO Specifications as JIS TS on September 2012. It will also be reflected into the IEC 62196-3 standard scheduled to be published in 2013.

Interpretation of Technical Standards for Electrical Equipment

The Interpretation of Technical Standards for Electrical Equipment (revised on June 2012) requires that the voltage to the ground of the electrical circuit between a charger and a vehicle shall be 450V or less. The Association interpreted the requirements as follows, and will add new requirements to the 1.0 version. The requirements are applied only to Japan.

1) The voltage is decided by the spec of battery. Current EVs have voltages of 450V or less, and this requirement will be met in the future.
2) As a pre-charge safety check, a 500V test is applied to Quick chargers in accordance with the principles of indoor wiring regulations.

For users with cardiac pacemakers

An Impact study concluded that quick chargers could have a temporary effect on implanted cardiac pacemakers. This led the Association to issuing out warnings to charger users about the effects in December 2012. Warnings were added to the instructions of newly-installed chargers and a sticker was placed on every charger.

On 19 March, 2013, the Ministry of Health, Labor and Welfare and the Ministry of Economy, Trade and Industry ordered that the information be provided with user instruction manuals and that warnings be placed on the charger enclosure.

Infrastructure Workshop Activity

Five Infrastructure Workshops were held with 878 participants in attendance.

Date	Participant	Main agenda	Presenter
13th 17-Apr	214	Development of authentication-type outlets Photovoltaic system interconnection inverters Development of quick charging connectors for EVs Verification test of installation and placement of charging facilities Report from charging facility location information sharing WG (2)	Sony KEC Furukawa Electric MLIT Increment P
14th 10-July	207	LEAF to Home COCO juden website Introduction of EVPOSSA Efficient XML Interchange Revision of the ministerial ordinance for quick charger installation and operation manual	Nissan Nissan EVPOSSA Fujitsu MIC
15th 10-Oct	168	OUTLANDER PHEV EV tour using CHAdeMO quick chargers Promotion program of EV・PHVinfrastructure EMC test facility Development of “Q denmaru”	Mitsubishi Motors JAPAN EV CLUB Association of Planning and Promoting EV/PHV Project in Wide-area Coalition KEC MOBILITY PLUS
16th 19-Dec	167	Special measures for a multiple electricity contract Manual for the quick charging facility installationto the existing condominiums Mazda DEMIO EV Suggestions for reducing running costs of quick chargers for EVs Charging facility location information WG DC earth-fault detector for the EV quick charger Amendment of the Interpretation of Technical Standards for Electrical Equipment	TEPCO MKS Mazda JEL SYSTEM Increment P SEIKO C&E CHAdeMO secretariat
17th 4-Mar	142	New Nissan Leaf Promotion project of charging infrastructure for next-generation vehicles CHAdeMO European conference report Profile of UL and EV-related services UL Japan’s EV service and test facilities UL standards for wireless power feeding system	Nissan METI CHAdeMO secretariat UL Japan

Location Information Sharing WG

Headed by Increment P, the Location Information Sharing WG worked on making a CSV database of charger location information in cooperation with Mitsubishi Motors and Fujitsu. Since the end of March, 2013, the location information including normal chargers will be made available to the public on the CHAdeMO Website. The Information includes the address, latitude, longitude, open hours and fee. The WG aims to achieve quality levels so that not only the public, but also businesses can use it. The information will be added and updated regularly, and its quality will be maintained and enhanced.

Multiple contract in one facility is now available for quick chargers

In April 2013, a special measure enabling one facility to have a multiple electricity contract was created. Satisfying some requirements allows applicants to install a separate electric cable and a meter exclusively for quick chargers, apart from the ones for the existing contract.

Regulations by the Fire Defense Law for quick charger facilities

Previously, local fire stations decided ad hoc whether or not to allow installation of quick charging facilities due to the lack of clear regulations in the Fire Defense Law. However, in December 2012, the regulations for installation were set by the municipal fire prevention ordinance. As a result, the notification of installation is not required now, but displaying a sign, taking crash prevention measures and performing regular inspections are required. It is important to submit prior explanations to local fire stations concerning installation in compliance with laws and regulations.

Promotion project of the charging infrastructure for next-generation vehicles

The Ministry of Economy, Trade and Industry will subsidize part of the purchase and installation expenses of quick chargers, and will start a project to promote infrastructure. Both normal and quick charging facilities are subject to this subsidy. The scope and rate of the subsidy vary depending on whether or not chargers comply with the vision drawn up by local governments and the degree of public accessibility. The Next Generation Vehicle Promotion Center (NEV) will serve as a contact center for applications. Subsidy grants will last until the end of fiscal year 2013.

Smart City Week 2012

Eight companies* exhibited their products and services at Nikkei Smart City Week 2012 held in Pacifico Yokohama from October 31 to November 2nd. Visitors enjoyed visiting the CHAdeMO booth and asked the exhibitors many questions.
(*Nissan, Mitsubishi Motors, WAGO Company of Japan, Sumitomo Electric Industries, DYDEN, Yazaki, KIKUSUI ELECTRONICS, Yokogawa Meters & Instruments)

CHAdeMO in Europe

PR Tours

We have organized two Public Relations tours in Europe during FY 2012 in order to respond to requests by European stakeholders for increased direct communication and to deepen mutual understanding.

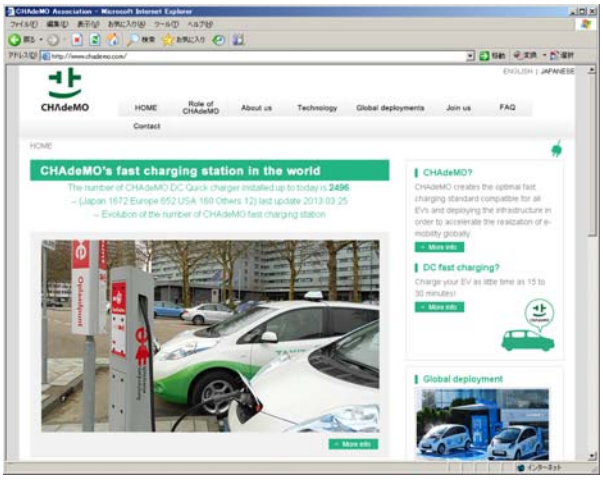
The 1st PR Tour (24-28 September, 2012): A CHAdeMO PR team (Japanese Steering Committee members and the European liaison) visited government officials and industrial associations in various European countries to present the CHAdeMO Technology and the Association's activities, as well as to exchange opinions on the situation in Europe. The PR team has also visited CHAdeMO fast charger projects in Norway and the Netherlands.

The 2nd PR Tour (29 November – 9 December): The second PR tour focused on exchanging views around the charging infrastructure deployment and its impact on the grid, an often-debated topic in Europe. We were able to have fruitful discussions with representatives from utility companies in Italy, France, and Poland.

Increased communication capability (1) – Renewed web site

We have named increased communication capability as a key goal of our activities for FY2012. The CHAdeMO liaison in Europe has worked on renewing the CHAdeMO website design and content targeted at the global markets with a special focus on Europe.

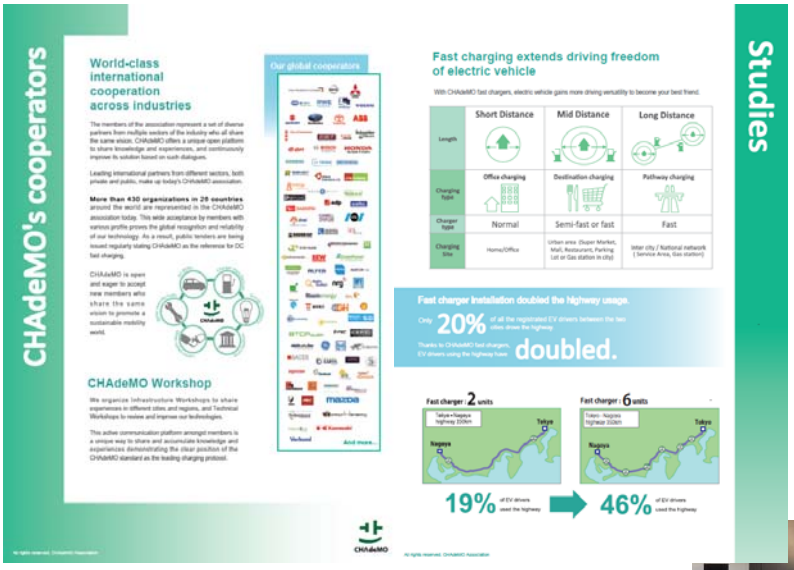
The renewed web site went live on January, 2013. The new content in the new design, including the presentation of various charging infrastructure deployment projects and the voices of representatives from the municipalities and operators resulted in bringing many new visitors to our web site. We have seen a dramatic increase in the number of inquiries we receive, including those from countries where CHAdeMO has not yet set foot in.



Increased communication capability (2) – Communication tool creation

CHAdeMO Europe has created two types of brochures – a long version (12 pages) and a short version (4 pages) - for distribution in fairs and conferences. We have used these brochures on multiple occasions, including the 2 PR tours, the Paris Motor Show (September 2012) and other events in different parts of the world.

We have also created Chinese versions for the Japan-China Green Expo that was going to take place in September, 2012, but the event unfortunately never took place in light of China's deteriorating security situation.



CHAdeMO Europe General Assembly

The general assembly of CHAdeMO Europe FY2012 took place mid-February, in Brussels, Belgium, with 70 participants from 17 countries. In the morning session, we have held the first technical workshop in Europe targeted at our regular members. Takeshi Haida, Senior Research of Tokyo Electric Power Company reported on topics such as the update compatibility of CHAdeMO ver 1.0 and the 3rd-party certification selection process, followed by a very lively Q&A session.

In the afternoon sessions that were open to the public, there were presentations by ERDF (France), project updates from different parts of Europe (Estonia, Denmark, Norway, Switzerland) and by COBUS (electric bus projects in Portugal and Germany).

The last session was a panel discussion by key members of the CHAdeMO Association dedicated to the Clean Power for Transport Directive proposal that had been submitted by the European Commission on January 24*.

*CHAdeMO Association has published a position statement following the European Commission's proposal submission for a Directive on the deployment of alternative fuels infrastructure, recommending "Combo 2" as the DC fast charging standard in Europe. CHAdeMO's statement asks that the European Union adopt a more technological-neutral approach to ensure that the existing EV users and investors are not excluded from this initiative.

http://www.chademo.com/wp/wp-content/uploads/2013/01/CHAdeMO-Position-Statement-2013-01-24.pdf

Report from the Executive Board

Formulation of CHAdeMO logo guideline

In June 2012, a guideline was formulated to prohibit the registration of an identical or similar logo to the CHAdeMO logo and name or its use as a name of other products or services.

Establishment of the Function Extension WG

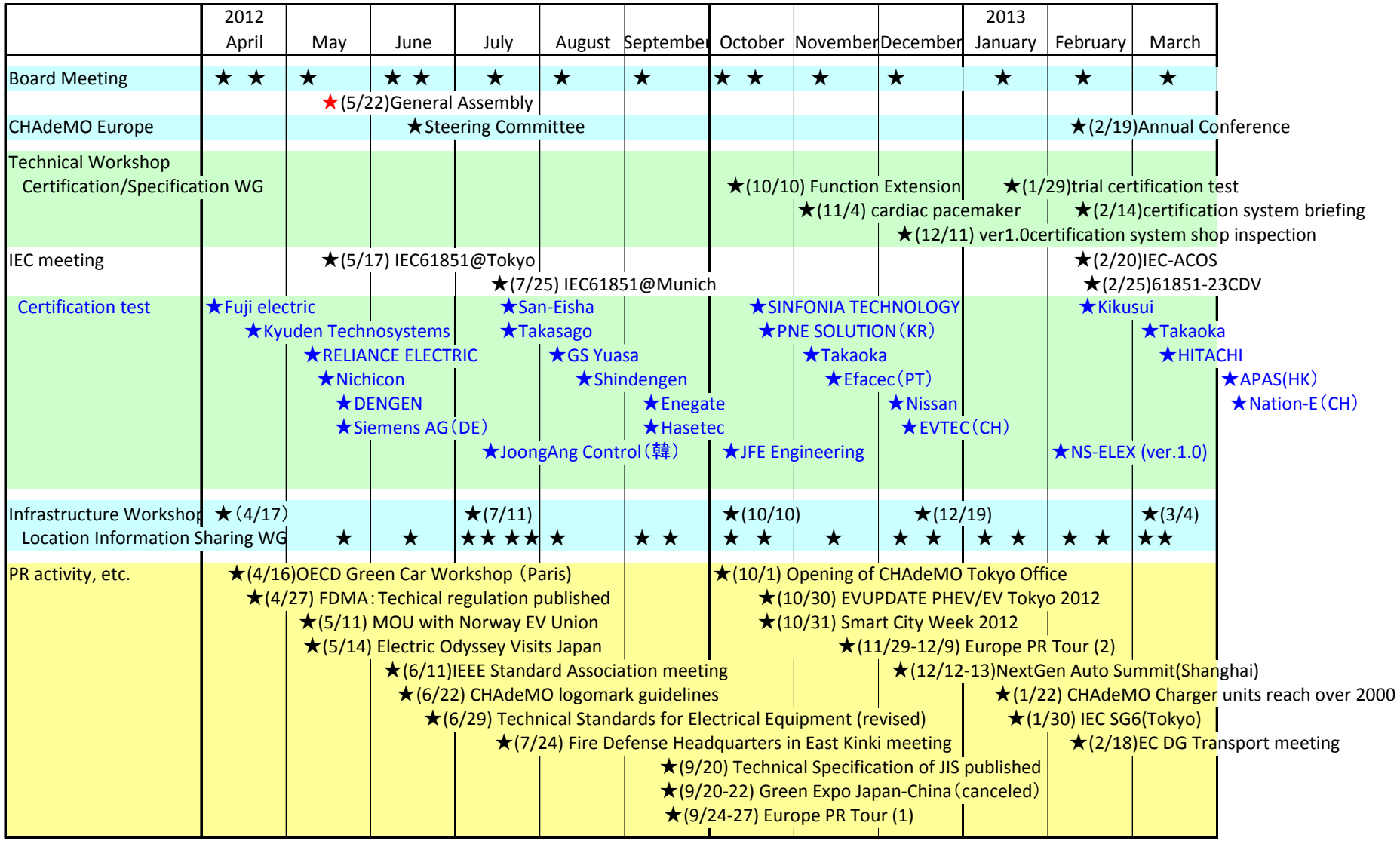
The discharge function has been developed and is now in practical use, such as Nissan's LEAF to HOME and Mitsubishi Motors's power BOX. This function outputting DC from the vehicle is based on CHAdeMO Specifications. The Association will formulate a common specification for the system interface in coordination with relevant parties.

In October 2012, a WG meeting was held to discuss its application to heavy vehicles and the DC input current, and summarized the comments. Further plans, including selecting a leader, are under consideration.

Opening of CHAdeMO Tokyo Office

The reform of the governing structure and the independence of the secretariat has been an action item since the last fiscal year. As the first step, the Association opened a Tokyo office in October, 2012. The Hibiya building, where the office is located, has a meeting room, which is used for the Certification and Specification WGs and other meetings. The Association is planning to move the Secretariat's functions to the Tokyo Office after establishing the organization system assuming incorporation of the Association.

Activities in 2012



Specifications ver.1.0.・Certification WG

	date	Main Agenda
1st	4-Apr	Ver1.0 certification project plan
2nd	18-Apr	Ver1.0 certification project plan, MHI guidelines
3rd	16-May	comments for revised edition, review
4th	1-Jun	Certification checklist template
5th	12-Jun	Reverse current prevention diode, EMC
6th	27-Jun	Certification system, JIS Technical Standard
7th	19-Jul	Certification items, WG Schedule
8th	1-Aug	Certification items: criteria and category
9th	22-Aug	Report from connector WG
10th	7-Sep	Certification items: criteria and category
11th	26-Sep	Regulation of functional earth, pacemaker
12th	11-Oct	Regulation of functional earth, pacemaker
13th	1-Nov	Report from connector WG, trial certification
14th	22-Nov	Connector chechsheet
15th	13-Dec	Connector chechsheet
16th	10-Jan	Validation Specification(Draft) review
17th	31-Jan	Validation Specification(Draft) review
18th	14-Feb	Self assessment report, OEM certification
19th	7-Mar	Connector checksheet

WG members:
Nissan(chair), Mitsubishi motors, Toyota, Subaru, Honda, Suzuki motor,
Mazda, Takaoka, Hasetec, Takasago, Fuji electric, NS-ELEX, YAZAKI,
JFE Engineering, HITACHI, Shindengen, Vector Japan, TEPCO(secretary)

Connector WG

	date	Main Agenda
11st	16-Apr	Standard sheet, validation procedure
12st	31-May	Combo, standard sheet, validation procedure
13st	28-Aug	Validation, comment from specification WG
14st	29-Oct	Charging cable standard, connector certification
15st	17-Nov	Cecksheet(IP protection)
16st	7-Dec	Cecksheet(FTA)
17st	22-Jan	Cecksheet(strength test)
18st	8-Feb	Cecksheet(FTA, drop and impact test)
19st	29-Mar	Cecksheet(FTA)

Connector WG members:
Yazaki(chair), Fujikura, Sumitomo Electric Industries, ITTCanon,
Japan Aviation Electronics, Tyco Electronics Japan, DAIDEN,
Parts Supply Center, Hitachi Cable, PHOENIX CONTACT,
FURUKAWA ELECTRIC, U'eyes Design, WAGO Japan,
TEPCO(secretary)

Location Information Sharing WG

	date	Main Agenda
1st	30-May	Standard format, Work procedure
2nd	21-Jun	Standard format, Work procedure, member roles
3rd	2-Jul	Standard format, Work procedure, member roles
4th	9-Jul	Standard format, Work procedure, member roles
5th	23-Jul	Operation scheme, collaborator requirement
6th	26-Jul	Operation scheme, collaborator requirement
7th	9-Aug	Exchange of opinions with Fujitsu
8th	6-Sep	Operation design, system requirements
9th	27-Sep	Operational manual, database design
10th	5-Oct	Operational manual, input sheet design
11th	19-Oct	Operational manual, personal Information protection
12th	20-Nov	Progress control, request for cooperation
13th	5-Dec	Progress control, request for cooperation
14th	17-Dec	Data validation
15th	11-Jan	Data validation
16th	21-Jan	Progress control
17th	6-Feb	Progress control, inquiring survey
18th	20-Feb	Progress control, inquiring survey
19th	1-Mar	Progress control, DB operation rule
20th	6-Mar	Disclosure information schedule
21st	18-Mar	Disclosure information schedule, DB maintenance

Location Information Sharing WG members:
INCREMENT P(chair), Mitsubishi motors, Fujitsu, TEPCO(secretary)

Board meeting

date	Main Agenda
13-Apr	FY2012 Action plan, General Assembly plan
25-Apr	General Assembly plan, Tademark guidelines
11-May	General Assembly plan, Tademark guidelines
11-Jun	IEC Activity, PR Action plan, V2H extension
22-Jun	Tademark guidelines, V2H extension
20-Jul	PR Action plan, CHAdeMO Europe report
10-Aug	Certification system, supplementary budget
7-Sep	JIS Standard, pacemaker , managaement of secretariat
4-Oct	JIS Standard, pacemaker , managaement of secretariat
19-Oct	Certification, pacemaker, managaement of secretariat
8-Nov	Pacemaker, OEM charger, PR measures
7-Dec	Interpretation of Technical Standards, Patent policy
18-Jan	Managaement of secretariat, Ver1.0 compatibirity
15-Feb	European Conference, EU DG transport
15-Mar	Ver1.0 compatibirity, EU DG transport

Boad membesr: Nissan, Mitsubishi motors, Toyota, Subaru, TEPCO