

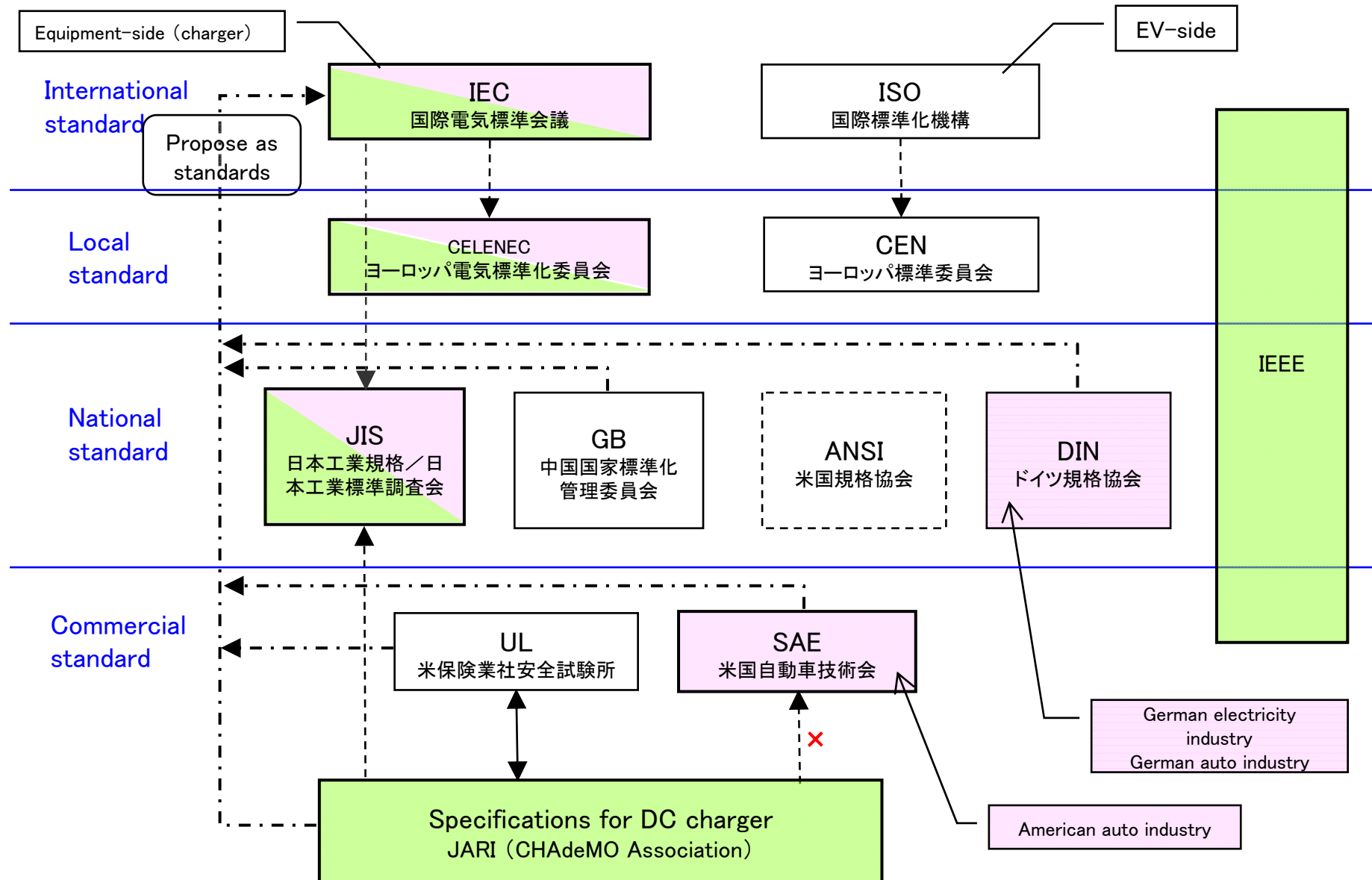


**DC 充電規格国際標準発行
パネルセッション**

**Publication of DC charging specifications
as international standard**

**IEC 標準の体系とCHAdeMO 方式の特長について
System of IEC standards and features of CHAdeMO**

Standards and Standards Committees



CHAdeMO as IEC Standards

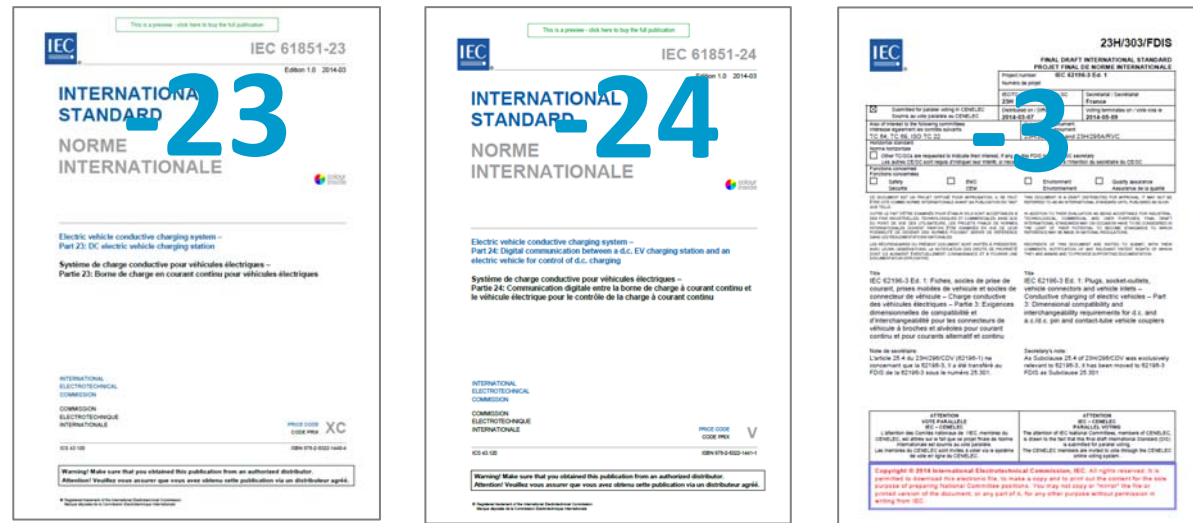
	規格名称 Standard name	議長国 Chair
61851-1	EV用コンダクティブ充電システム 一般要求事項 Electric vehicle conductive charging system: General requirements	FR
61851-23	DC充電ステーション D.C. electric vehicle charging station	JP
61851-24	DC充電通信プロトコル Digital communication between charger and EV for D.C. charging	JP
62196-3	DC充電車両カプラ要件 Dimensional interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube	US/JP
ISO/IEC15118	自動車から電力網への通信インタフェース Vehicle to grid communication interface -1 General information and use-case definition -2 Network and application protocol requirements -3 Physical and data link layer requirements	DE/FR

IEC Standards and CHAdeMO Specification

CHAdeMO Specification



IEC Standards



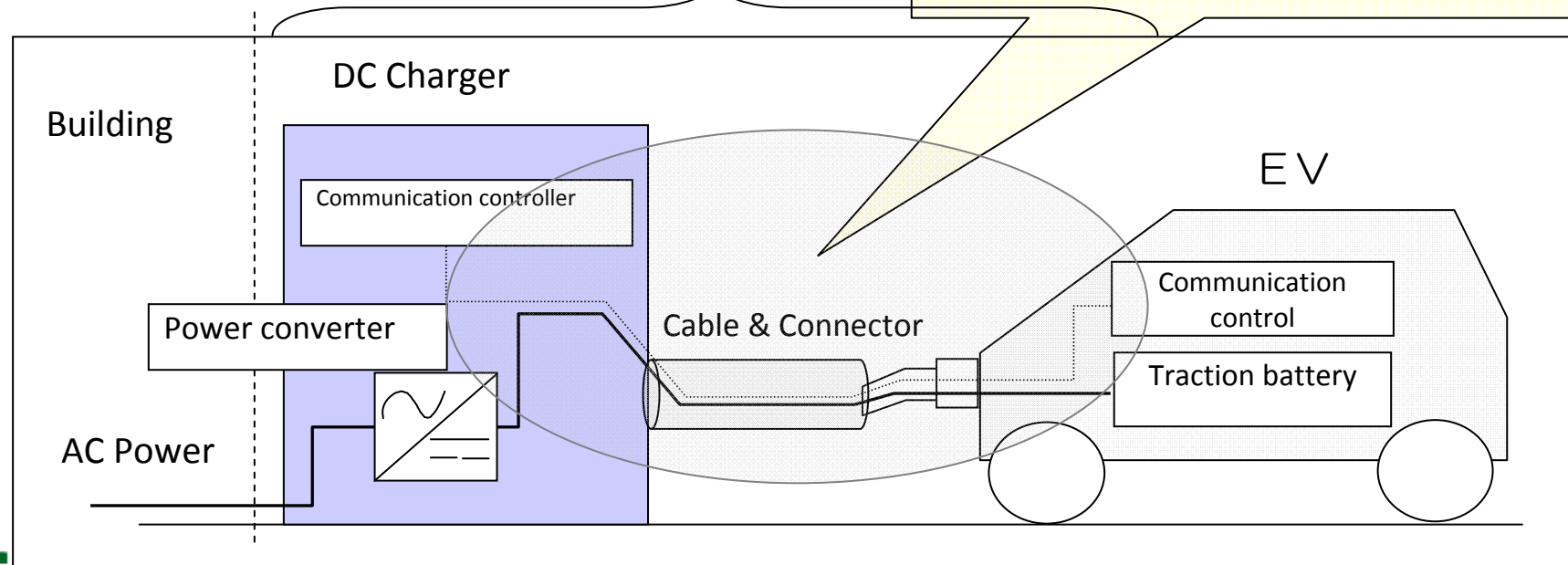
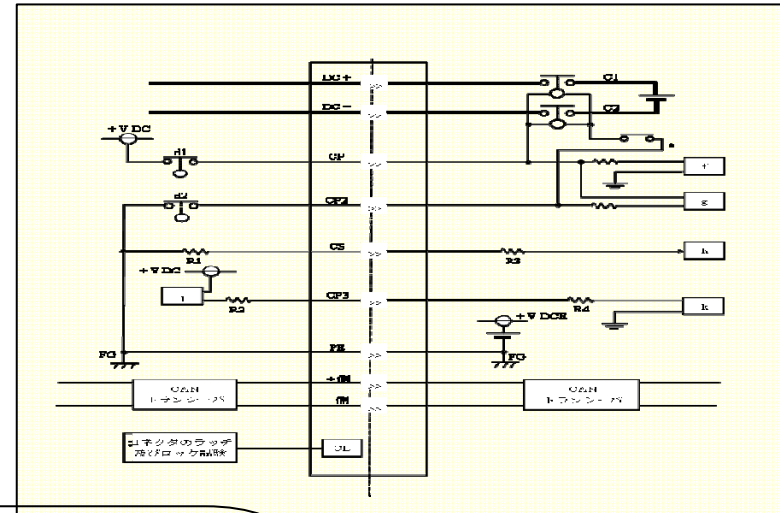
無断複製・転載禁止 CHAdeMO協議会

61851-23 DC Charging Station

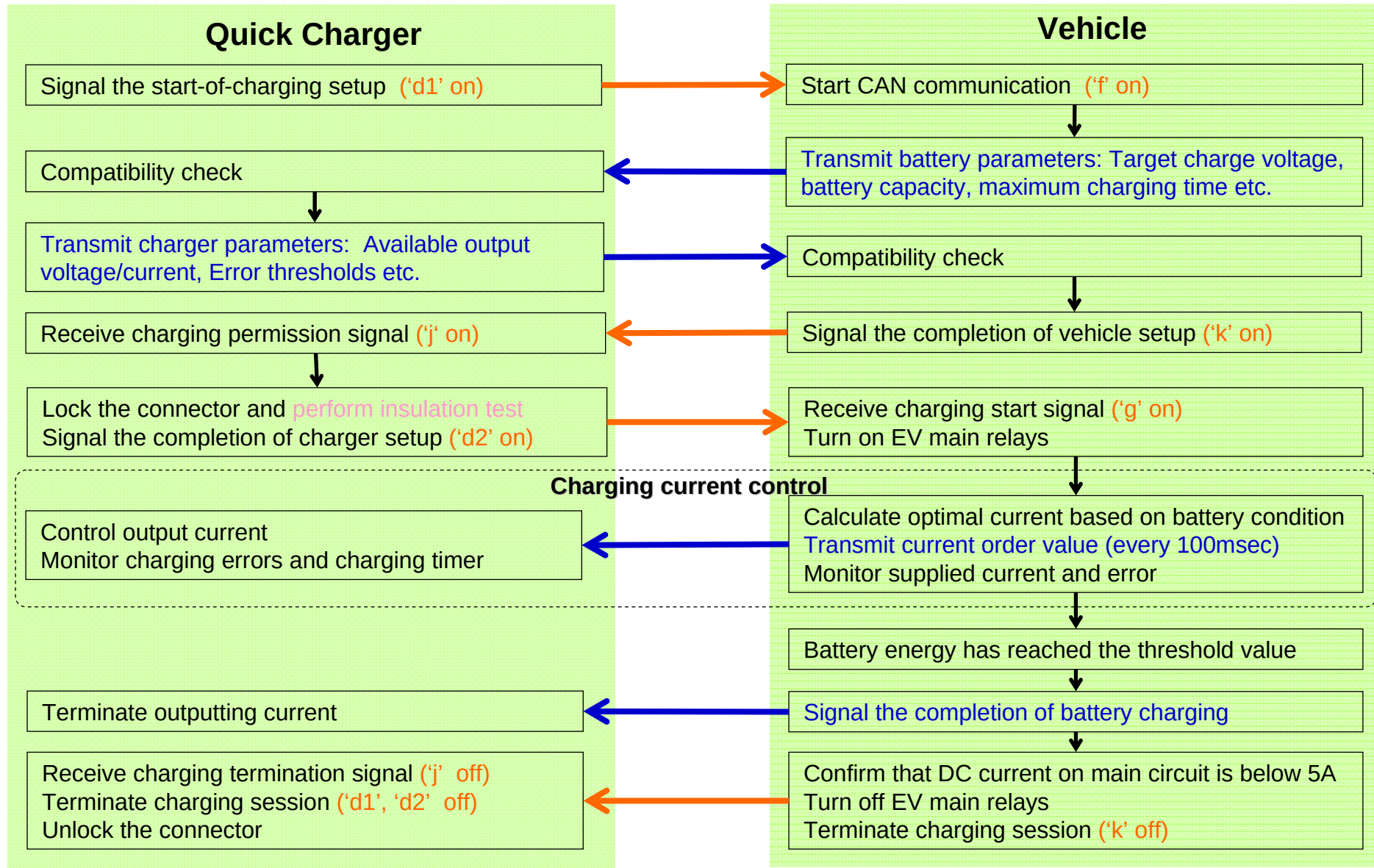
Master standard of DC charging master standard

- Requirements and measures for Electrical safety
- Necessary functions for charging
- Charge performance
- Specific system requirements
(61851-24 specifics digital communication.)

CHAdE MO interface as System A



61851-24 DC Communication Protocol (System A)



62196-3 DC Charging Vehicle Coupler

7

	Configuration AA CHAdeMO (Japan) (System A)	Configuration BB GB/T (PRC) (System B)	Configuration EE COMBO 1 (US) (System C)	Configuration FF COMBO 2 (DE)
Connector				
Dimensional requirements				
Communication Protocol	CAN		PLC	

CHAdeMO Connector : Standardization and Improvement

2009

2010

2011

2012

2013

2014



« Mass Production Phase »

- Improved Durability
- Improved Visibility

« Overseas Deployment Phase »

- Safety Feature improved
- Durability improved
- Mis-operation prevention feature added



« Further Improvement through competition »

- Supplier increased
- Operability improved

« The maturity of technology »

- Performance confirmation

CHAdEMO EVs



Nissan LEAF



Mitsubishi Outlander PHEV



Mitsubishi i-MiEV



Mitsubishi MINICAB MiEV



MINICAB MiEV Truck



Tesla Model S with Adapter



Kia Soul EV



BMW i3



VW e-up!



Nissan eNV200



Peugeot iOn



Citroen C-ZERO



Citroen Berlingo



Peugeot Partner



BD Otomotiv eFiorino



MAZDA DEMIO EV



HONDA Fit EV



TOYOTA eQ



SUBARU Plug-in Stella



BD Otomotiv eKANGOO

CHAdEMO chargers

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

Path to the IEC Approval and the Future Plan

	2010	2011	2012	2013	2014	2015
CHAdeMO	★ Establishment of CHAdeMO Association Foundation of CHAdeMO Association ★ CHAdeMO 0.9		★ CHAdeMO 1.0 ★ JIS TS D0007	★ CHAdeMO 1.0.1	★ JIS ★ V2H Guideline 2.0	
61851-1 (61851-21-2)			CD1 ★ Berlin	CD2	CD3	61851-21-2 EMC
61851-23	★ #1PT Belgium ★ #2 Osaka	CD1 ★ #3 Beijing	CD2 ★ #4 Munich ★ #5 Tokyo ★ #6Munich	CDV ★ #6 Toronto	FDIS ★ IS	MT
61851-24	★ Propose NWIP	★ #1@Paris ★ #2 Beijing	CD ★ #3 Munich ★ #4 Tokyo ★ #5Munich	CDV ★ #6 Toronto	FDIS ★ IS	MT
62196-3	★ Propose NWIP	draftCD	CD ★ #4@Palo Alt	CDV	FDIS ★ IS	
ISO/IEC15118			CDV CDV CDV	★ IS (15118-1)	★ IS (15118-2)	

CHAdeMO adopted as Smart Grid Specification

Standard for smart grid control of distribution grid ⇒ Only ISO/IEC 15118 was referred as charging standard

■ Proposed CHAdeMO on decision of adoption of DC charge to the standard

