

CharIN - Charging Interface Initiative e. V.

UNECE Workshop – V2X: Electric Vehicle Charging, Communication and Infrastructure

August 30th, 2023



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#### What is CharlN e.V.

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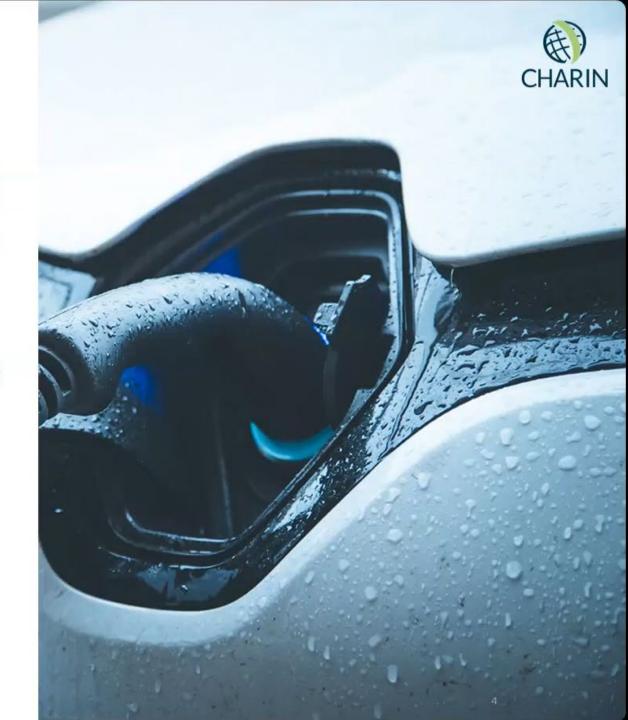
CharIN is the leading global association that is dedicated to the establishment of a universal and standardized charging system for electric vehicles of all types.



CharlN is known for its significant role in developing and promoting the Combined Charging System (CCS) as the global standard for EV charging, and the Megawatt Charging System (MCS), a new charging standard for heavy-duty vehicles.

89k

**CCS Charging Points** worldwide bringing high power charging to the people.



#### What is CharlN e.V.

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CharlN brings together a diverse range of stakeholders, including leading companies and emerging players in the EV charging sector, automotive manufacturers, technology companies, utilities, and research institutions.

Through its developing efforts, CharlN aims to ensure that standardized charging infrastructure is widely available and compatible regardless of location, thus facilitating EV adoption across the globe.



### **EV-EVSE** (and beyond) Communication



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It is of interest to look at the whole eco-system when seeking to standardize the charging eco-system. Our focus is on the following with regard to V2X (with a view to consumer uptake – e.g. seamless experience, V2H options for cost saving and sustainability purposes – grid stability, etc.):



Overall, the importance of V2X is not only for LDVs (and private use), but also for HDVs such as trucks, planes, boats, etc.

### The need for regulatory harmonisation at international level



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- CharIN welcomes the work the European Commission is conducting to guarantee a uniform approach to standards and governance at EU level.
- We are active within the European Commission Sustainable Transport Forum Sub Group on Standards and Governance (SG1) and soon in the SG2 (Data), and within the EU-US Trade & Technology Council.
- We see the specific added value for international bodies to promote regulatory certainty, not least recognition of specific standards by UNECE because:
  - Geographic coverage
  - Increased level of certainty for industry and consumer
  - Focus on key values / principles / necessities security, safety, etc.
  - Facilitation of global trade and relevant tech roll-out (e.g. infrastructure)
  - Decrease levels of necessity for retro-fit
  - Interoperability focused solutions rather than conflict in standards

Decrease in vendor lock-out and consumer lock-in

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## The physical layer - CCS

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The Combined Charging
System has been
confirmed as the main
standard for Europe
(European Court of
Auditors, European
Commission), not least for
high-power charging
systems.

# CCS charging points globally:

o Europe: 60,000

North America:6,841

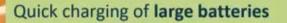
Asia/Pacific: 21,000 (HPC)



# Why MCS?







Charge 200-600 kWh batteries in 20-30 minutes

→ power levels exceeding 1 MW are required

No sufficient and safe charging solution available

Common development of a solution that is adopted by all relevant players

#### Megawatt Charging System







- Alignment of global requirements
- Future proof power One Connector Approach
- Re Use of knowledge
- Interoperability with CCS technology & functions
- **Customer Focus operability**
- International industry support
- Preparation of standardization
- Made for trucks good for all kind of transport
- MCS Launch Event at EVS35 in Oslo
- MCS Launch at CharlN Testival NORTH AMERICA in Portland, Oregon

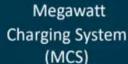
**AC Charging** 



Fast Charging (FC)



**High Power** Charging (HPC)

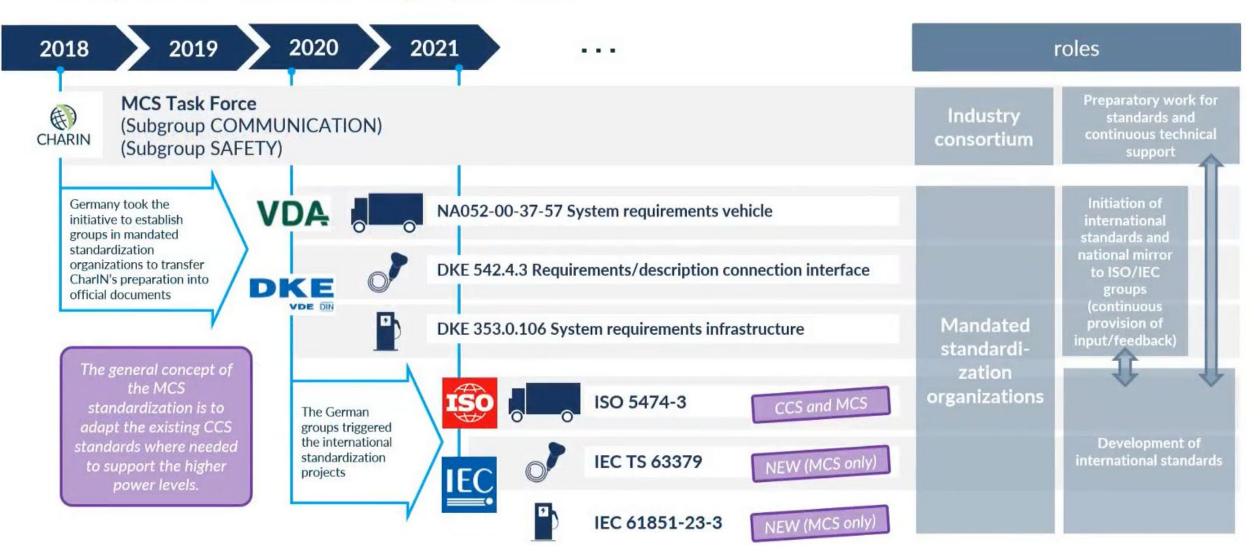




#### FROM CHARIN into standardization



History and roles of international groups involved.



#### MCS STANDARDIZATION ROADMAP



Timeline and key milestones of international groups involved in MCS standardization.



# The digital layers - ISO15118 (-2 / -20)



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ISO15118 implementation guarantees conductive charging for AC and DC is possible. Additionally, it facilitates and further supports the standardised application of smart charging functionalities:

- Smart Charging: ISO15118-2 & -20 (the latter with extended capacities)
- Secure Communication: -2 & -20
- Plug&Charge: -2 & -20
- Bi-directional charging: -20 (only)
- Wireless power transfer: -20 (only)
- Automated connection device: -20 (only)

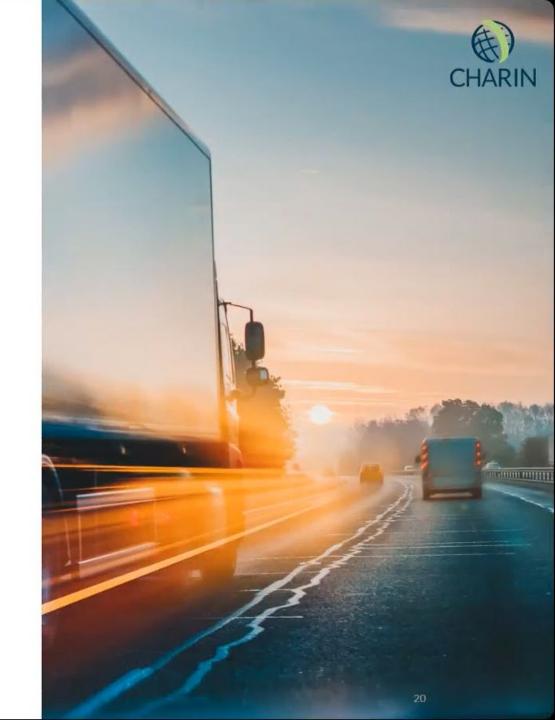
Current discussions: What is "smart" (re-)charging.

# The digital layer - OCPP

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OCPP – de facto standard with (already) global implementation by industry.

Current discussions ongoing between OCA and IEC to make OCPP an IEC standard.



### Roaming & Plug&Charge

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#### For ideal consumer uptake:

- Roaming needs to be addressed at a regulatory level rather than left to the market.
- Plug&Charge: automated communication and billing between the electric vehicle and the charging station without any need external identification (e.g. RFID cards, Debit/credit cards or charging apps) while ensuring high IT security at the same time.



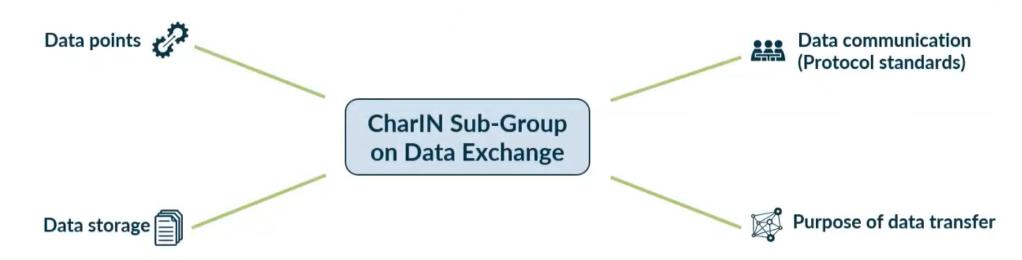
## **Data Exchange**





CharlN Sub-Group on Data Exchange – needs regarding data exchange according to use-cases – e.g:

- Smart Charging
- Bi-Directional Charging
- Trip planning (HDV vs LDV)
- Charger uptime



### Additional regulatory considerations

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## **Pre-Cabling**

Encourage building readiness to avoid too many retro-fitting costs

Grid Codes

Equal recognition of EVs when it comes to grid access.

Payment Systems

Our approach is to push for solutions which facilitate interoperability and a roll-out of infrastructure. Therefore, obligations which are counter-productive to e-mobility roll-out should be avoided – e.g. card payment systems – and rather left to the operator who knows the market.

# Thank you for your kind attention!

# Any questions?

#### Contact

Phone +49 30 288 8388-0 Fax +49 30 288 8388-19 E-Mail coordination@charin.global

www.charin.global

Contact - Glenn Cezanne Head of Public Affairs, EU (Brussels)

Phone +32 (0) 488 296 582

E-Mail glenn.cezanne@charin.global

www.charin.global









