

ACEA'S VIEWS

DEMAND CONNECTION CODE

European Stakeholder Committee

Brussels

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The ACEA logo consists of the lowercase letters 'a', 'c', 'e', and 'a' in a dark blue, rounded font. Each letter has a small teal dot positioned above its top curve. The logo is set against a white background that is part of a larger graphic design featuring a teal circle and a curved white shape.

acea



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ACEA MEMBERS



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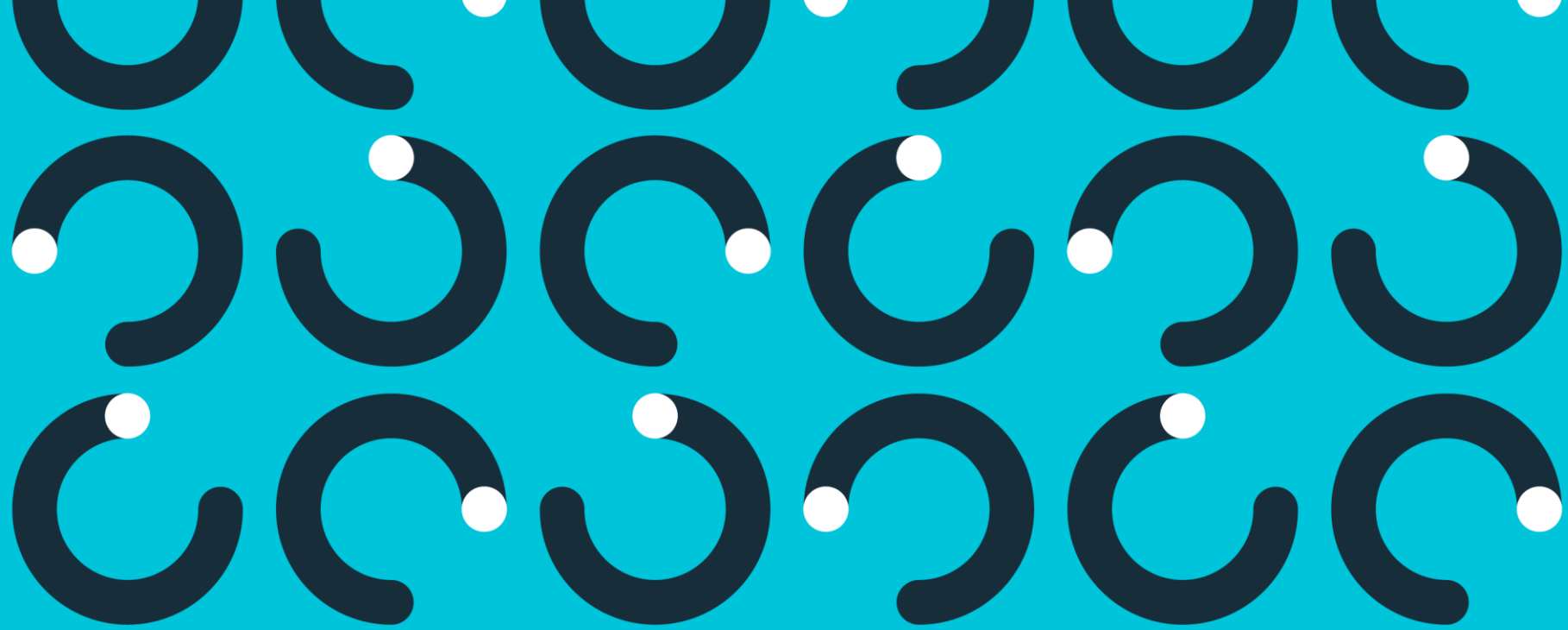
TOYOTA

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V O L V O

ABOUT THE EU AUTO INDUSTRY

- 13.0 million Europeans work in the automotive sector
- 11.5% of all manufacturing jobs in the EU
- €374.6 billion in tax revenue for European governments
- €79.5 billion trade surplus for the European Union
- Almost 8% of EU GDP generated by the auto industry
- €58.8 billion in R&D spending annually, 32% of EU total



KEY MESSAGE ON DC REGULATION

ACEA supports the intention of the Commission to amend the regulation for network code on demand connection to prevent blackouts and address regulatory needs to harmonize grid codes within the EU.

- **Interoperability Challenges**

Customer complaints can be expected due to the lack of defined interoperability, support for legacy electric vehicles, and electrical supply equipment. This ambiguity leads to unnecessary investments by our customers and hinders the ability to charge EVs effectively.

- **Harmonized Standards and Certification procedures**

Standardization bodies shall receive a mandate to develop harmonized standards to meet the new DCC requirements. Specifically, updates to IEC 61851 for EVSE, ISO 5474 for EVs, and ISO 15118 for EV/EVSE communication should be reviewed, along with the development of a certification method through an update of EN 50549.

- **Introduction date**

The regulation does not specify details on its introduction timing. ACEA recommends that the new regulation should apply exclusively to newly homologated vehicles and new electrical supply equipment.

INTEROPERABILITY CHALLENGES

LEGACY HARDWARE



High Level description of the Challenge:

The regulation leaves open how the combination of legacy hardware shall be treated and how the EV and EVSE can identify the corresponding hardware level.

In combination with V2G vehicles the matrix would even expand further.

		EVSE			
		New V2G	Old V2G	New V1G	Old V1G
EV	New V2G	OK	(1)	(2)	(3)
	Old V2G	(1)	OK	(3)	(3)
	New V1G	(2)	(3)	OK	(1')
	Old V1G	Combined	(3)	(1')	OK

- (1) V2G legacy (1') V1G legacy
- (2) V1G vs V2G requirements
- (3) Combined concerns (1) & (2)

Possible solution:

Uni-directional Charging shall be always allowed in any combination.
Further definition for bi-directional charging required.

HARMONIZED STANDARDS AND CERTIFICATION PROCEDURES

IMPLEMENTATION CHALLENGES

The new DCC/RFG regulations defines requirements for:

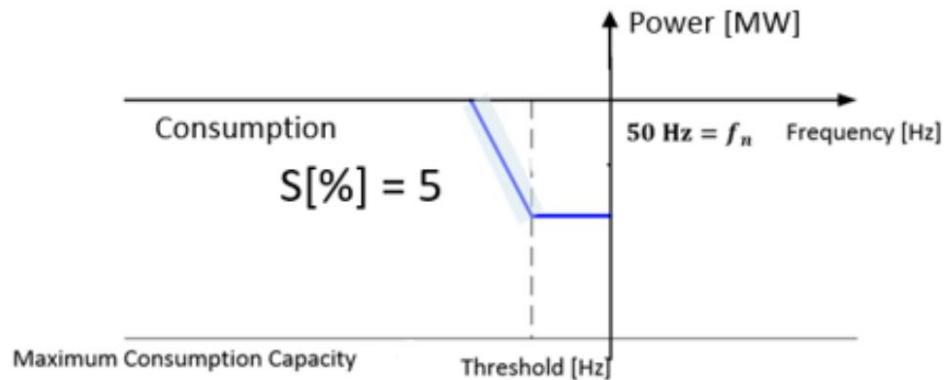
- Limited Frequency Sensitive Mode for various demand units (All : LFSM-UC – V2G : LFSM-O)
- Withstand Frequency Ranges and Rate of Change of Frequency (RoCoF)
- Fault-Ride-Through (FRT)
- and other aspects

However, it does not specify how EV's and EVSE's should comply with these requirements.

2 examples are given to provide details.

EXAMPLE 1 | LIMITED FREQUENCY SENSITIVE MODE FOR VARIOUS DEMAND UNITS (LFSM-UC)

Figure (3)XX.c



Parameters are defined by the local grid code and cannot clearly identified via GPS. **Different Threshold** are expected for **Ireland and Nordic countries** (e.g.: SWE, NOR)

The response time for LFSM-UC shall be less or equal to **0,5 seconds**.

High Level description of the Challenge:

→ The fast response time requires an implementation as part of the EV onboard charger (*).

The EVSE can be configured to local Grid Code parameters (i.e threshold here) as part of the installation procedure.

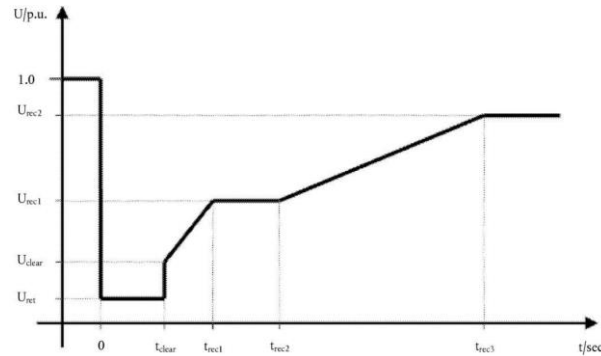
A communication interface is not defined to share parameters.

Possible solution:

Unified grid codes for EU or based on EV GPS position

(* in V2G AC due to ISO 15 118 latency, achievable response time for LFSM feature managed by EVSE is about 1,5 seconds (#Ok for 2s response time requested in 2016 RFG)

EXAMPLE 2 | FAULT-RIDE-THROUGH (FRT)



Voltage Parameters [pu]		Time Parameters [s]	
U _{ret}	0,05	t _{clear}	0,15
U _{clear}	0,15	t _{rec1}	0,15
U _{rec1}	0,15	t _{rec2}	0,15
U _{rec2}	0,85	t _{rec3}	3,0

V1G electric vehicle shall stay connected, if the voltage drops as described and shall automatically recovery charging within 60s once is above U_{rec2}.

V2G electric vehicles shall recover within 1s. Unclear which parameter shall be used for a V2G vehicle, while charger at a V1G EVSE.

High Level description of the Challenge:

→ The EVSE and EV needs to be fully active during the operation.

The EV and EVSE communication needs to remain active to maintain the charging session.

Possible solution:

Legacy V1G EVSE hardware would not fulfill these requirements.

An interoperable solution considering legacy HW needs to be developed as part of the standardization.

HARMONIZED STANDARDS AND CERTIFICATION PROCEDURES

CERTIFICATION/HOMOLOGATION PROCESS

The new DCC regulation mandates 2 certifications for V1G electric vehicles and V1G electric supply equipment:

- Equipment Certification (Article 32 & XX+1)
- Demand Unit Certificate (Article 32)

The new RFG regulation request that compliance of

- V2G electric vehicle shall be on “Homologated platform”
- V2G electric vehicle supply equipment shall be a “type-test certificate” that enable interoperability
- with independent certification/homologation of EV & EVSE

However, a harmonized test standard for these certifications/homologation is not available, and the procedure remains unclear.

ACEA's recommendation is to request a defined certification/homologation method before the new regulation is published.

The certification process for EVs should be incorporated into the EV homologation process.

SUMMARY ON DC REGULATION

Key Issues Identified:

- **Interoperability challenges** due to undefined standards and support for legacy EVs and supply equipment.
- Requirements defined (e.g., LFSM-UC, RoCoF) including **new or more severe** (i.e legacy will not comply) and **lack guidance** on compliance for **EVs and EVSE**.
- Lack of defined **homologation/certification methods** for EVs and EVSE.
- **Unclear introduction timing** and scope definition for new vs. legacy vehicles.

Industry Perspective:

- ACEA supports regulation amendments, but highlights concerns about operational impacts on EVs and highlights hardware and software implications for current EV platforms
- Emphasizes the need for clear functional allocation between EVs and supply equipment.

Recommendations by ACEA:

- **Mandate to update standards** like IEC 61851, ISO 5474, and ISO 15118 for EV and EVSE communication.
- Establish **harmonized certification methods before regulation implementation** (like EN 50 549)
- Restrict regulation scope to **newly homologated vehicles only** for effective implementation.
- Include the automotive industry (ACEA) as a permanent partner in further discussions.



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