

# Position Paper of Charging Interface Initiative e.V.

Clarifying ISO 15118 Implementation under AFIR - Commission Delegated Regulation (EU)  
2025/656

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Charging Interface  
Initiative (CharIN) e.V.  
EUREF-Campus 10-11  
10829 Berlin

Contact

Phone +49 30 288 8388-0

Mail [coordination@charin.global](mailto:coordination@charin.global)

Web [www.charin.global](http://www.charin.global)

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## 1. Introduction

The Charging Communication Observatory subgroup of the CharIN Focus Group Charging Communication has analyzed the implications of the Alternative Fuels Infrastructure Regulation (AFIR) and its mandate for ISO 15118 compliance across Europe.

The Commission delegate regulation (EU) 2025/656 amending the Alternative Fuels Infrastructure Regulation (AFIR), entering into force in 2026, is mandating the implementation of ISO 15118-1/2/3/4/5 for all newly installed or upgraded publicly accessible EVSEs across Europe. From January 2027, ISO 15118-20 will also become mandatory for private and public EVSEs.

CharIN welcomes AFIR's objective to ensure interoperability and transparency in EV charging. However, current regulatory wording lacks clarity on how compliance should be demonstrated, creating significant uncertainty for manufacturers, operators, and test laboratories.

While this regulation provides a clear regulatory framework, several ambiguities remain regarding the practical implementation of ISO 15118 requirements by EVSE manufacturers and EV OEMs. These uncertainties risk creating market fragmentation, reducing interoperability, and complicating the customer's charging experience.

This position paper provides CharIN's consolidated view on:

- The scope of ISO 15118 implementation for EVSEs and EV OEMs,
- The risks of undefined conformance testing under AFIR, and
- Recommendations for pragmatic, harmonized compliance pathways that safeguard interoperability and user experience.

This document is intended as a guidance document reflecting industry experience and technical analysis. It does not replace or supersede the official standards or regulatory requirements referenced herein.

## 2. Background and context

### 2.1. AFIR requirements

Under the amended AFIR, from 2026, all new installed or upgraded publicly accessible chargers must implement ISO 15118-1/2/3/4/5, and from 2027, also private and public EVSEs must implement ISO 15118-20.

While the regulation mandates this implementation, it does not define appropriate conformity assessment procedures to prove compliance. The European New Legislative Framework (NLF) in particular Decision 768/2008/EC provides for harmonized approaches to conformity assessment, and particularly the conformity to harmonized standard confers a presumption of conformity to the provision of the legislation.

Generally, compliance with ISO 15118-4 and ISO 15118-5 would provide confidence that the requirements of ISO 15118-2 and ISO 15118-3 have been implemented correctly and enable a seamless interoperability between EVSE and EV.

However, based on nearly a decade of real-world implementation experience, the rigid enforcement of the two specific conformance standards and its predecessor DIN SPEC 70122 present critical challenges. Due to the fact that legacy vehicles, legacy EVSE and new EVs are not fully compliant with ISO 15118-4 and -5, they may face major interoperability issues if conformance with ISO15118-4 and -5 is strictly enforced.

### 2.2. Industry concerns

CharIN members have identified the following risks:

- Ambiguity in ISO 15118 implementations (see also below)
- Undefined conformity assessment pathways may result in inconsistent enforcement across Member States.
- Strict or misaligned conformance testing risks causing interoperability failures, especially with legacy vehicles.
- The market requires a phased and harmonized approach to implementation to prevent fragmentation.

## **3. ISO 15118 implementation challenges**

### **3.1. Timeline, feasibility and deployment constraints**

ISO 15118-20 provides a standardized communication protocol between EV and EVSE, but it does not define the complete system-level behavior of the charging process. Essential electrical aspects are specified in complementary standards such as IEC 61851-1, IEC 61851-23, and ISO 5474. ISO 15118-20 defines communication only and depends on complementary IEC standards for electrical behavior and system integration, some of which are not yet fully aligned or available. Nevertheless, a fully aligned and normative description of the combined electrical and communication behavior across these standards is still missing. As a result, the interpretation of parameters, control logic, and operational boundaries is left to individual market participants and therefore remains largely proprietary.

Consequently, even if all actors implement ISO 15118-20 and formally comply with the protocol, implementations may still differ significantly in real-world behavior. This creates a risk that system-level behavior diverges across deployments, leading to interoperability issues despite apparent standard conformity. Mandating ISO 15118-20 in isolation may therefore create a false sense of interoperability, as a shared protocol syntax does not guarantee consistent semantics or aligned system behavior across the charging ecosystem.

The January 1, 2027, deadline for mandatory ISO 15118-20 implementation does not fully reflect the current maturity of the e-mobility ecosystem or the deployment timelines of Charge Point Operators (CPOs). Fully compliant EVSE solutions are not yet available at scale, partly due to dependencies on complementary IEC standards that are still under development or not yet aligned with ISO 15118-20, and once market-ready, their large-scale deployment will require additional time for procurement, validation, interoperability testing, supply chain preparation, and installation. CharIN acknowledges the efforts of all market participants, who are actively working toward compliance despite existing technical and regulatory uncertainties.

This misalignment may create operational challenges for infrastructure providers and OEMs, potentially leading either to accelerated deployments that compromise quality and interoperability, or to delays in infrastructure rollout. These challenges are further amplified by the diversity of use cases covered by the regulation, including publicly accessible infrastructure, private installations, and emerging applications such as megawatt charging systems (MCS), bidirectional charging (V2G), and advanced services like Plug & Charge. This gap is particularly critical for AC EVSE, where no dedicated certification scheme currently exists, creating uncertainty in demonstrating compliance under AFIR. In addition, the absence of a clear definition of which ISO 15118-20 features are mandatory for each use case increases the risk of inconsistent implementations and interoperability issues in the field.

Given these dependencies on not yet finalized IEC standards, incomplete conformance testing frameworks, and the absence of certification schemes for certain use cases, a phased implementation approach becomes necessary. A phased implementation approach for ISO 15118-20 would therefore provide a more realistic and effective pathway. Such an approach could prioritize specific, mature, and high-impact use cases such as secure communication (e.g. TLS 1.3), Plug & Charge, and MCS, while allowing additional time for broader or more complex functionalities, including bidirectional charging and certain private charging scenarios. This would enable the market to progress in a structured manner, ensuring deployment continuity, maintaining investment confidence, and supporting interoperability and quality across both public and private charging infrastructure.

CharIN will provide a proposed implementation timeline and supporting roadmap in a dedicated document.

### **3.2. Ambiguity in protocol implementation conformance statements**

Both ISO 15118-2 and ISO 15118-3 prescribe features that may be considered mandatory, optional or conditional for both the EVSE and EV. But if those features are not supported by either EVSE or EV, the communication session might be prematurely terminated. This may lead to customer dissatisfaction. Some of the ambiguities are listed below:

- Support for TLS with External Identification Means
- Support for Plug & Charge
- Support for certificate installation services
- Support for contract certificate validation (Plug & Charge authorization)
- Multiple PWM start up strategies for ISO supported AC charging (5%, 100% or nominal PWM)
- Support for dynamic grid schedules
- Support for metering
- Support for Sales Tariffs

To address existing ambiguities in charging communication and protocol selection, ISO/PAS 15118-202:2025 was created and, from CharIN's perspective, is strongly recommended to be implemented in every charging station alongside ISO 15118-2, ISO 15118-20, and CharIN encourages the European Commission to consider incorporating this requirement into future revisions of the AFIR framework.

### **3.3. Metadata and information exchange**

Inconsistent metadata handling (for example, EV ID, SoC, tariffs, etc.) can cause critical interoperability issues.

CharIN advises not to use proprietary extensions that could fragment the market or conflict with ISO-defined data structures.

### **3.4. Interoperability safeguards**

To improve robustness in mixed environments, EVSEs should support graceful fallback mechanisms between ISO 15118, DIN/TS 70121, and IEC 61851-1.

Failures can always occur in real-charging environments. EVSEs should provide a restart option to recover from unsuccessful sessions. Such behavior is already defined for DC charging in IEC 61851-23:2023, and the industry is currently working on comparable solutions for AC charging.

### **3.5. Interoperability between other standards**

For DC charging, the currently harmonized standard is EN 61851-23:2014 (Directive 2014/35/EU). Compliance with EN 61851-23:2014 instead of IEC 61851-23:2023 might cause additional interoperability concerns. In addition, IEC 61851-23:2023 is not aligned with ISO 15118-20:2022 and does not yet specify the electrical requirements for bidirectional power transfer support for CCS (System C).

This gap is addressed by the technical committee working on IEC 61851-23 Ed.3 but publication of this edition is not expected before the end of 2027.

## **4. Conformance testing and certification**

### **4.1. Conformity assessment**

As indicated above, the undefined conformity assessment procedure might cause more interoperability concerns because of:

- Inconsistent interpretations of compliance among manufacturers and specialized testing laboratories.
- Potential over- or under testing
- Delays in charger deployment due to lack of appropriate conformance entities.
- Differences and non-uniform interpretations between test equipment suppliers.

### **4.2. CharIN recommendations**

To mitigate these issues, CharIN strongly recommends:

- Ensuring that conformance requirements prioritize functional interoperability and user experience, not merely protocol syntax.
- Developing a unified European test framework through coordination between CharIN, CEN-CENELEC, and ETSI.

- Ensuring that testing systems used for conformance testing are validated against each other – CharIN maintains a list of validated test systems.
- Recognizing CharIN Charging System Extended EVSE Certification as a valid and pragmatic compliance pathway under AFIR as amended by delegated regulation (EU) 2025/656, covering ISO 15118-2 and -3 functional compliance testing on basis of ISO 15118-4 and ISO 15118-5 including core interoperability requirements derived from EN 61851-1:2019 and IEC 61851-23:2023.
- Recognizing Basic DC EVSE Certification considering interoperability safeguards and related fallback mechanisms covering DIN/TS 70121 and compliance testing on basis of DIN/TS 70122 including core interoperability requirements derived from EN 61851-1:2019 and IEC 61851-23:2023.
- Addressing the current gap where no AC EVSE certification scheme is available, resulting in a regulatory and technical gap.
- Acknowledging that conformance test cases for ISO 15118-20 are still under development. While initial tests exist, further development and validation are required to achieve full compliance coverage, and the availability of fully certified EVSEs is therefore expected to be delayed.
- Ensuring that legacy infrastructure and existing EVs remain supported during the transition period. The coexistence of legacy systems and ISO 15118-2/-3/-4/-5 is expected until at least 2028, while full implementation and conformity assessment of ISO 15118-20 and -21 may extend beyond 2028.
- Introducing a phased implementation of ISO 15118-20, postponing the mandatory deadline until market-ready, large-scale compliant solutions are available, while limiting early obligations to specific advanced use cases (e.g. Plug&Charge, V2G). This would preserve AFIR objectives while ensuring deployment continuity, quality, and interoperability.
- Requiring full compliance with ISO/PAS 15118-202:2025 alongside any ISO 15118-20 mandate once it becomes available as an International Standard (IS) and incorporating it into existing certification schemes. Implementation of these mandatory extensions is essential for interoperability, robustness, and future-proof deployment. This document is expected to be released in 2027.

In addition, clarification is needed regarding the legal treatment of amendments to referenced standards. The current delegated act reference to ISO 15118-20 is broad and may create uncertainty for industry planning. As observed in previous AFIR provisions, amendments to referenced standards are typically introduced through explicit regulatory updates or official listings. Therefore, any future incorporation of ISO 15118-202 as an International Standard or ISO 15118-20 AMD 1 should be clearly referenced through an updated delegated act or equivalent regulatory instrument to ensure legal certainty and consistent implementation across the market.

## 5. CharIN position summary

Key issue	CharIN position	Recommended action
Missing system level electrical specifications	Interoperability requires aligned system-level semantics across communication and electrical standards.	Initiate and accelerate system-level standardization aligning electrical behavior with ISO 15118-20 across IEC and ISO committees.
Conformity assessment and testing framework	AFIR requires a harmonized EU conformity assessment and testing framework.	Establish an EU framework aligned with Decision 768/2008/EC and coordinate with CharIN, CEN-CENELEC, and ETSI.
Certification scheme recognition	CharIN EVSE Basic and Extended Certification provide pragmatic AFIR compliance pathways.	Recognize industry initiatives such as CharIN Charging System Basic and Extended EVSE Certification under AFIR.
DC interoperability and legacy protocol support	Interoperability requires fallback support for DIN/TS 70121 communication.	Recognize Basic DC EVSE Certification covering DIN/TS 70121 and DIN/TS 70122 testing.
AC EVSE certification gap	No certification framework currently exists for AC EVSE communication compliance.	Develop an AC EVSE certification scheme aligned with ISO 15118 and IEC 61851.
ISO 15118-20 readiness	Conformance testing for ISO 15118-20 remains incomplete and evolving.	Introduce phased implementation and delay mandatory enforcement until a mature conformance testing framework exists.
Legacy infrastructure compatibility	Legacy EVs and charging infrastructure must remain supported during transition.	Maintain fallback mechanisms and interoperability safeguards until at least 2028.
ISO 15118-20 interoperability extensions	Future interoperability requires implementation of mandatory extensions defined in ISO/PAS 15118-202 once the specification becomes available as an International Standard (IS).	Require full compliance with ISO/PAS 15118-202:2025 alongside any ISO 15118-20 mandate once it becomes available as an International Standard (IS) and incorporate it into existing certification schemes.

## 6. Conclusion

CharIN strongly supports the European Commission's goal to enhance charging communication interoperability across Europe.

However, success depends on clear, harmonized, and pragmatic implementation guidance.

CharIN calls on regulators, standardization bodies, and industry partners to:

- Adopt functional interoperability as the primary compliance criterion,
- Recognize industry-driven certification frameworks, and
- Coordinate testing and certification efforts to ensure consistent market rollout.

CharIN remains committed to facilitating collaboration and providing technical expertise to enable a smooth, interoperable, and user-friendly transition under AFIR.

## 7. Reference

This document was created by the focus group Charging Communication and within the Subgroup of Charging Communication Observatory of the CharIN association.

The Focus group Charging Communication supports development, specification and tests of charging communication. It closes gaps and provides recommendations for communication protocols of the electric vehicle (EV) charging system.

The Charging Communication Observatory subgroup monitors and analyzes trends, developments, and issues in charging communication. It provides a platform for information exchange and technical discussion among industry stakeholders. It identifies gaps and emerging needs in communication protocols. It supports the alignment of CharIN activities with international standardization. And it facilitates knowledge transfer and best practice sharing.

Document Status:

This position paper represents the consensus reached within the Charging Communication Observatory subgroup as of March 2026. It is intended to support ongoing standardization efforts and facilitate stakeholder discussions.

#### Referenced Standards:

- ISO 15118-1/2/3/4/5
- ISO 15118-20
- DIN SPEC 70122
- DIN/TS 70122
- DIN/TS 70121
- ISO/PAS 15118-202:2025
- IEC 61851-23:2023
- EN 61851-23:2014 (Directive 2014/35/EU)
- EN 61851-1:2019

#### Contributors:

- Beat Kreuter (DEKRA)
- Jens Schmutzler (Keysight)
- Magnus Ilisch (Mercedes-Benz)
- Fabian Eisele (Vector)
- Thomas Kramer-Wolf (Kontron)
- Gilles Kermarec (Schneider Electric)
- Davide De Michino (Enel)
- Simone Giache (Enel)
- Breno Zaidan-Martinelli (Ampere)
- Michael Schwaiger (BMW)
- Qianli Ma (Schneider Electric)
- Woohyun Seo (KERI)
- Dirk Großmann (Vector)
- Eva Félez (Wallbox Chargers SLU)
- Anaïs Bonnard (CharIN e.V.)