

Sustainable Transport Forum (STF)

Sub-group on electro mobility services (SGEMS)

Deliverable 3.1

Guideline for a harmonized ID registration process in Europe



Aim of this deliverable: “Make recommendation to put in place a harmonized identification registration process for electro-mobility actors and contractors, in all EU Member States, according to common and comprehensive rules”

Sustainable Transport Forum (STF)
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Deliverable 3.1 - Guideline for a harmonized ID registration process in Europe

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Versions

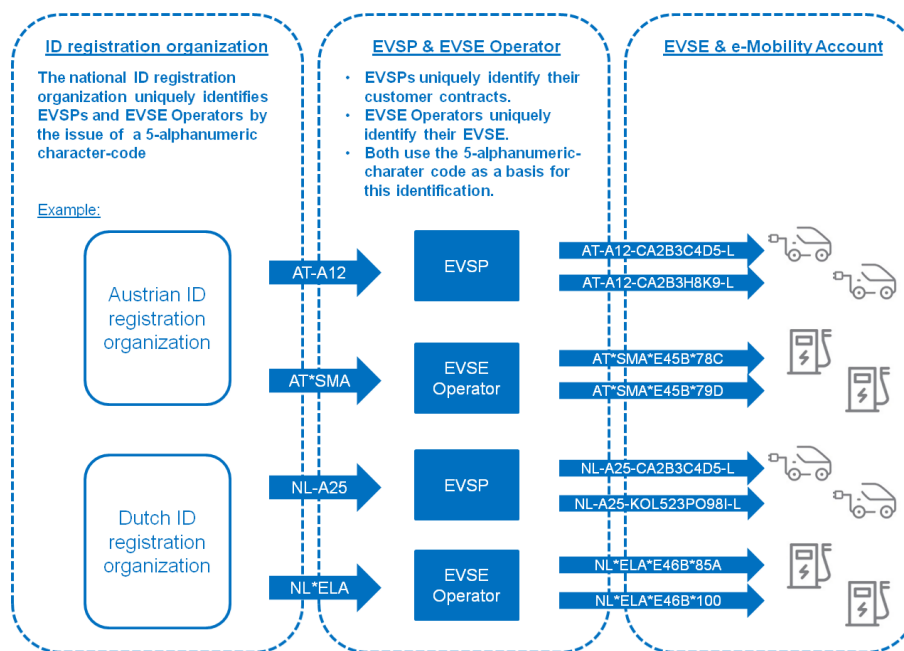
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MANAGEMENT SUMMARY & RECOMMENDATIONS FOR DELIVERABLE 3.1

Currently the E-Mobility ecosystem misses clearly defined rules and systems on how to uniquely identify actors like the **Electric Vehicle Service Provider (EVSP)** also known as E-Mobility Service Provider and **Electric Vehicle Supply Equipment Operator (EVSE Operator)** also known as Charge Point Operator. As shown in Figure “Interaction between stakeholders” the EVSP and EVSE Operator hence should identify relevant business objects like the **Electric Vehicle Supply Equipment (EVSE)** also known as Charge Point, **the e-Mobility Account** also known as Customer Contract and other business objects like the **EVSE Pool** by their own.



Interaction between stakeholders

Why IDs are needed:

Unique identification of actors (EVSE Operator, EVSP) and hence business objects (EVSE, e-Mobility Account, EVSE Pool) is crucial to achieve European wide interoperable **access to charging networks** and **high quality charge point registers (unique dataset of EVSE/charge points)**.

The ID registration organization guarantees a harmonized identification registration process for actors and hence business objects.

Main Challenges:

Nevertheless, the lack of ID registration organizations in most European Country, the lack of legal framework conditions and the lack of coordination between the currently existing ID registration organizations can be seen as the main challenges blocking a harmonized identification registration process in the European Union and the European Economic Area.

Current situation:

Presently, four countries are deemed to have established an ID registration organization: **Austria (Austrian Mobile Power), France (AFIREV), Germany (BDEW) and the Netherlands (eViolin)**. These four organization have already settled the process shown like in figure “Interaction between stakeholder”

Recommendations:

The expert group and the four existing ID registration organizations, that are currently working on a European wide ID registration solution, urgently asks the **Member state and EC representatives of the Sustainable Transport Forum (STF)** to attach importance to the topic of unique identification of actors and business objects, due to the fact that this is the foundation for a European-wide interoperable access to charging networks and for high quality charge point register(s) and to avoid stranded investments (hardware, software, system solution) of current and future e-mobility stakeholders.

This expert group concordantly recommends to the members of the Sustainable Transport Forum to:

- 1) Publish a **single ID registration process** for unique identification of EVSP (Global Service Provider IDs) and EVSE Operator (Global Spot Operator IDs) ; that also ensures backward compatibility with existing practices (i.e. country codes [first two letters] can be used within all European Countries)
- 2) Set up a **public-private working initiative** to facilitate a list of reserved “Global Service Provider IDs” and all “Global Spot Operator IDs” and to facilitate the interim ID registration processes for unmanaged country codes.

Steps towards a short-term realization

The expert group recommends to the **Member state representatives** of the Sustainable Transport Forum **and the European Commission**:

1. To support the setting up of a joint public-private working initiative between currently existing national ID registration organizations, relevant market players, non governmental organization and European Public Administration to streamline a European wide identification registration process.
2. To promote the harmonized identification registration process for electro-mobility actors and contractors, in all EU Member States.

The expert group recommends towards the **ID registration organizations**:

1. The currently existing national ID registration organizations have to register IDs to EVSPs and EVSE Operators of their country and publish all relevant information (see 6.d and 8.) on their own website and/or on a common website of a joint public-private working initiative.
2. The currently existing national ID registration organizations have to ensure that EVSP and EVSE Operator without a national ID registration organization in their country are able to to “reserve” an ID at a joint public-private working initiative. This dataset of reserved IDs is published on the common website of the joint public-private working initiative and can be used as an initial dataset when new national ID registration organizations appear.
3. The currently existing ID registration organizations should stick to the common goals, tasks and rules (see points 4, 6 and 7) agreed in this document.

ID syntax

1. The ID syntax described in the ISO/IEC 15118 standard should be used to identify EVSE and e-Mobility Accounts
2. The ID syntax described in the document “V 1.0 Electric Vehicle ICT Interface Specifications: Part 2 Business Objects” of the eMI3 AISBL should be used to identify EVSE Pools

Enforcement

To ensure that EVSP and EVSE Operators ask for an ID at the responsible ID registration organization:

1. The joint public-private working initiative , the ID registration organizations, the STF and the EC should recommend the implementation and the usage of the ID system to all relevant stakeholders **(short term)**
2. STF representatives might discuss to recommend the implementation of a national rule(law) for the unique ID system to the Member states if deemed beneficial **(medium term)**
3. EC representatives might discuss to enforce the implementation and usage of the unique ID system with a EU Directive if deemed beneficial **(long term)**

1 INTRODUCTION

Status quo and current challenges

Currently the E-Mobility ecosystem misses clearly defined rules and systems on how to uniquely identify actors like the **Electric Vehicle Service Provider (EVSP)** also known as E-Mobility Service Provider and **Electric Vehicle Supply Equipment Operators (EVSE Operator)** also known as Charge Point Operators. As shown in Figure 2 “Interaction between stakeholders” the EVSP and EVSE Operator hence should identify relevant business objects like the **Electric Vehicle Supply Equipment (EVSE)** also known as Charge Point, **the e-Mobility Account** also known as Customer Contract and other business objects like the **EVSE Pool** by their own.

In addition, the lack of ID registration organizations in most European Countries, the lack of legal support and the lack of coordination between the currently existing ID registration organizations can be seen as the main challenges blocking a harmonized identification registration process in the European Union and the European Economic Area.

With this common Guideline the ID registration organizations AFIREV, Austrian Mobile Power, BDEW and eViolin set an initial step to agree on common standards, tasks and rules.

Why are unique IDs needed?

International interoperability between Electric Vehicle Service Providers (EVSPs) and Electric Vehicle Supply Equipment Operators (EVSE operators) requests that at least two basic business objects are identified without any ambiguity all over Europe: Electric Vehicle Supply Equipment (EVSE) and e-Mobility Accounts (e-MA). In addition to these two business objects, in some countries it is also considered necessary to uniquely identify EVSE Pools (or also called Areas) to be able to implement specific use cases.

The three business objects are defined by the eMI3 AISBL (eMobility ICT Interoperability Innovation AISBL) in the documents “V 1.0 Electric Vehicle ICT Interface Specifications: Part 2 Business Objects” and “V 1.0 Electric Vehicle ICT Interface Specifications: Terms, definitions and abbreviations”:

- **Electric Vehicle Supply Equipment (EVSE):**
EVSE is the part of a station that will handle the charging process of one EV at a time and may have one meter. An EVSE may have one or several connectors but only one can be used at the same time.
- **e-Mobility Account:**
An EV user may subscribe to EV services provided by an EV Service Provider. An Electromobility account is a unique relationship between the Service Consumer (EV user) and the Service Provider.
- **Electric Vehicle Supply Equipment Pool (EVSE Pool):**

A Pool is a set of charging stations, aggregated together due to some common property (geographic location, controller, administrative owner). In some implementations, an EV user searching for a charging station may be directed to an EVSE pool, and be able to use any charging station in the pool.

Consequently, a customer charging demand based on such identified business objects drives the linking of the two stakeholders (EVSP and EVSE operator) to authorize and settle a transaction. As it can be seen in *Figure 1 – Basis of e-Mobility ecosystem* the unique identification of the actors and hence the business objects is building the foundation for a European wide access to charging networks and for a high quality charge point register (unique dataset of EVSE/charge points).

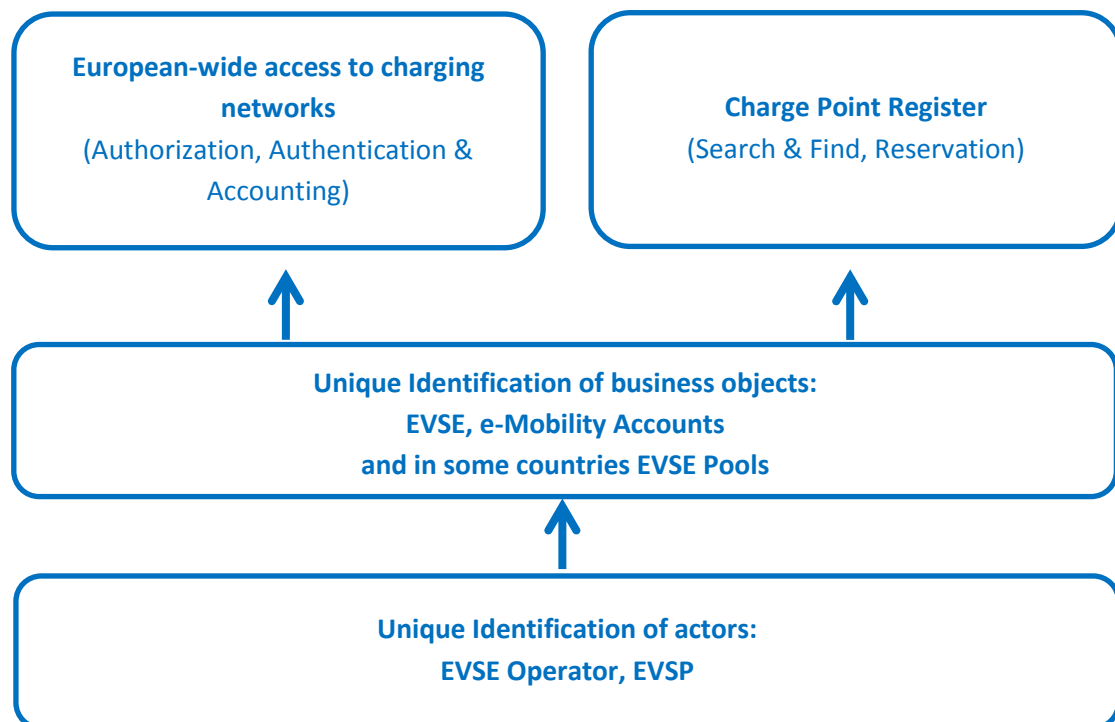


Figure 1 – Basis of e-Mobility ecosystem

An ID registration organization makes the unique identification of EVSE Operator and EVSP and hence EVSE and e-Mobility Accounts possible, as the organization manages the rules and means of identification and the attribution of the ID based on a common standard. How the national ID agencies interact with the EVSPs and EVSE Operators can be seen in *Figure 2 – Interaction between Stakeholders*.

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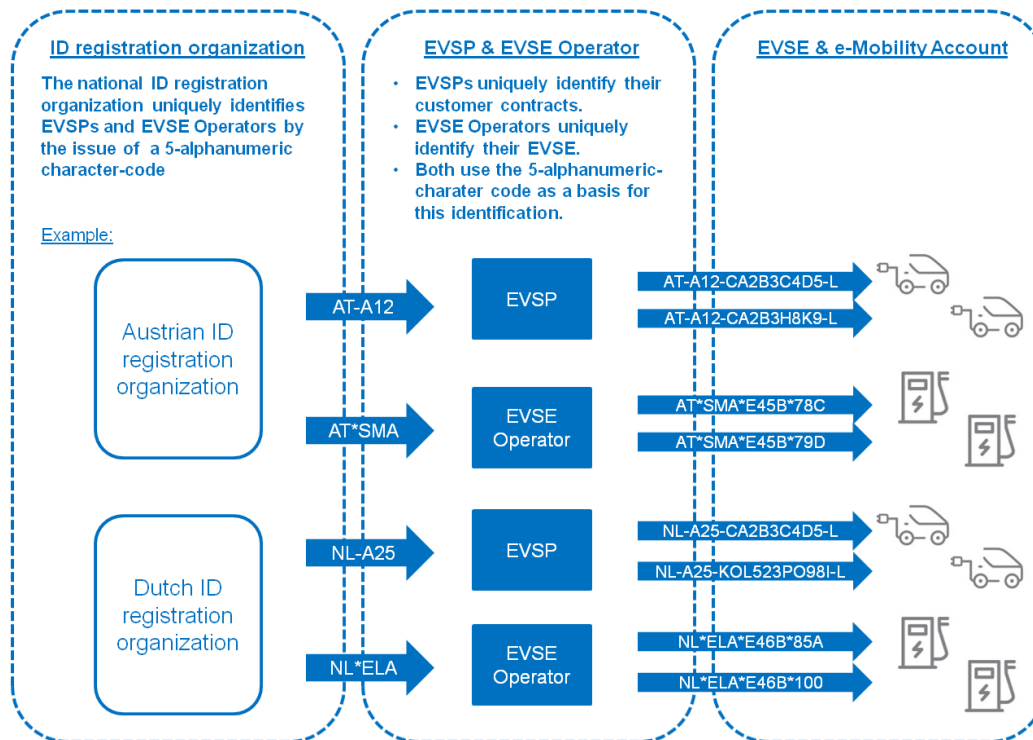


Figure 2 – Interaction between stakeholders

2 CURRENT ID REGISTRATION ORGANIZATIONS

Presently, four countries are deemed to have settled an ID registration organization: Austria (Austrian Mobile Power), France (AFIREV), Germany (BDEW) and the Netherlands (eViolin). Every national ID registration organization has been confirmed by a national authority, which is a precondition to work as a national ID registration organization.

AFIREV (France):

AFIREV is the French association of operators and parties concerned by interoperability for roaming and interoperability of e-mobility services. Its aim is to settle common agreements and solutions between all operators in France, in relation with European bodies to ensure full compatibility. AFIREV is presently under discussion with the French government to settle rules in order to ensure interoperability for all publicly accessible e-mobility services, and be recognized as the FR ID registration organization.

Austrian Mobile Power (Austria):

Austrian Mobile Power is a cross-sector alliance of leading Austrian companies to drive forward the implementation of electric mobility in Austria and Europe. In total Austrian Mobile Power brings together top representatives from 38 leading automotive technology companies, system providers, energy suppliers, application technology providers and various interest groups. Supported by the Austrian government Austrian Mobile Power registers Global Service Provider IDs for EVSPs and Global Spot Operator ID for EVSE operators since 2014.

BDEW (Germany):

The German Association of Energy and Water Industries (BDEW), Berlin, represents over 1,800 companies. The range of members stretches from local and communal through regional and up to national and international businesses.

For a broad acceptance of electric mobility, it is essential to provide the customer with a sufficiently dimensioned, interoperable (publicly accessible) charging infrastructure. An important prerequisite is the establishment of a roaming system, which allows the customer to charge at any public charging station and enables the station operator to bill accordingly. Important requirements for this are roaming identifiers (ID). Since March 2014, BDEW as-signs identifiers for electric mobility by order of the German Federal Ministry of Economics.

eViolin:

In France, Austria and Germany the organizations are only focused on registration ID's. In The Netherlands, it is part of the community also responsible for ensuring national roaming. At this moment eViolin manages the national roaming for over 120.000 EV cards/tokens and 19 operators and service providers. Including the registration of IDs for these organizations, which makes eViolin crucial in the EV ecosystem to support exchange of data and roaming.

3 OFFICIAL RECOGNITION

- a. Official recognition of the currently existing national ID registration organizations and the close cooperation between these organizations is highly relevant for the success of a harmonized identification registration process. The EC and/or the STF should support the foundation of a joint public-private working initiative between currently existing national ID registration organizations, relevant market players, non governmental organization and European Public Administration to streamline a European wide identification process.
- b. To ensure the visibility of the joint public-private working initiative and that EVSP and EVSE Operators actively ask for an ID at the responsible ID registration organization:
 1. The joint public-private working initiative , the ID registration organizations, the STF and the EC should recommend the implementation and the usage of the ID system to all relevant stakeholders **(short term)**
 2. STF representatives might discuss to recommend the implementation of a national rule(law) for the unique ID system to the Member states if deemed beneficial **(medium term)**
 3. EC representatives might discuss to enforce the implementation and usage of the unique ID system with a EU Directive if deemed beneficial **(long term)**

4 COMMON GOALS

- a. Agree and set up a harmonized identification registration process to identify EVSPs and EVSE operators in all Member States of the European Union and European Economic Area to support e-roaming, a high quality charge point register and other business cases relevant for the e-Mobility ecosystem.
- b. Support that every EVSE operator and EVSP of any Member State of the European Union and European Economic Area will have a solution to get ID fully compatible across Europe.

5 DEFINITION OF ID SYNTAX

The ID syntax to identify EVSE and e-Mobility Accounts (eMA) is described in the ISO/IEC 15118 standard. This standard sets the format and the rule of creation for the eMobility Account Identifier (eMA ID) and the Electric Vehicle Supply Equipment ID (EVSE ID). So far the Electric Vehicle Supply Equipment Pool ID (EVSE Pool ID) which is needed to identify EVSE Pools is not described in the ISO/IEC 15118 standard but is defined in eMI3 standard (see additional note).

EMA ID EXPLANATION ACCORDING TO ISO/IEC 15188

Issued by:	ID registration organization		EVSP			
Example	AT	A12		12A23GHI	3	"-"
Explanation	2 characters (alphanumeric) [ISO 3166-1]	3 characters (alphanumeric) [A-Z; 0-9]{3}		up to 9 characters (alphanumeric) [A-Z;a-z;0-9]{8}	optional but highly recommended	optional
Description	Country Code	Provider ID		eMA Instance	Check Digit	Separator
	Scope of Guideline		Not Scope of Guideline			

EVSE ID - EXPLANATION ACCORDING TO ISO/IEC 15188

Issued by:	ID registration organization		EVSE Operator			
Example	AT	A23	E	12345678HI	"*"	
Explanation	2 character (2 alpha) [ISO 3166-1]	3 character (alphanumeric) [A-Z; 0-9]{3}	to recognise that it is an EVSE ID	up to 30 characters (alphanumeric)	optional	
Description	Country Code	Spot Operator ID	ID-Type	Power Outlet ID	Separator	
	Scope of Guideline		Not Scope of Guideline			

Figure 3 – Overview of ID syntax

The eMA ID and the EVSE ID are made of several parts. Figure 3 – Overview of ID syntax gives a detailed overview how the identifiers should be compiled and who has the responsibility to register

the different parts of the IDs. On the next page a closer description of *Figure 3 – Overview of ID syntax*:

The ID registration organization is responsible to register only the first two parts (*blue*) to the EVSP/EVSE Operator:

- Country Code
- “Service Provider ID” and/or “Spot Operator ID”

Note: “Country Code” + “Service Provider ID” = “Global Service Provider ID”.
“Country Code” + “Spot Operator ID” = “Global Spot Operator ID”.

The EVSP is responsible to add following parts to get a unique eMA ID for every e-Mobility Account:

- eMA Instance
- Check Digit
- Separators

The EVSE Operator is responsible to add following parts to get a unique EVSE ID for every EVSE:

- ID Type
- Power Outlet ID
- Separators

Although the responsibilities of the EVSP and EVSE Operator are not scope of the guideline it is a crucial explanation to fully understand the meaning of the ID system.

Additional note:

In addition to ISO/IEC 15118, the eMI3 AISBL (eMobility ICT Interoperability Innovation AISBL) has published a slight update for this standard in the document “V 1.0 Electric Vehicle ICT Interface Specifications: Part 2 Business Objects”. In this document the EVSE Pool ID syntax is described. In addition to this, the main difference is that the eMA ID definition by eMI3 AISBL is a more precise interpretation of ISO/IEC 15118 in a sense that the eMA ID of ISO/IEC 15118 is proposing an instance of 9 Alpha/digits. eMI3 AISBL is splitting this instance in 2 parts: an ID Type of 1 Alpha/Digit and an instance of 8 Alpha/Digits. This ID Type is aiming at differentiating the EVSE ID, eMA ID and EVSE Pool ID. Furthermore, eMI3 AISBL highly recommends to use separators for all identifiers to achieve better readability. The document from eMI3 AISBL is available under following link: [eMI3 - Part 2](#)
The ISO/IEC 15118 standard as well as eMI3 AISBL define the Global Service Provider ID and the Global Spot Operator ID in the same way. Due to the fact that these two IDs are in the main scope of this common Guideline, no further preference between the ISO/IEC 15118 standard and eMI3 AISBL documents are made by the ID registration organizations.

6 COMMON TASKS

As indicated in *Figure 4 – Scope of Guideline* each ID registration organization is responsible to fulfill certain tasks, however how these tasks are fulfilled and what processes are used is not scope of this Guideline (subsidiarity principle).

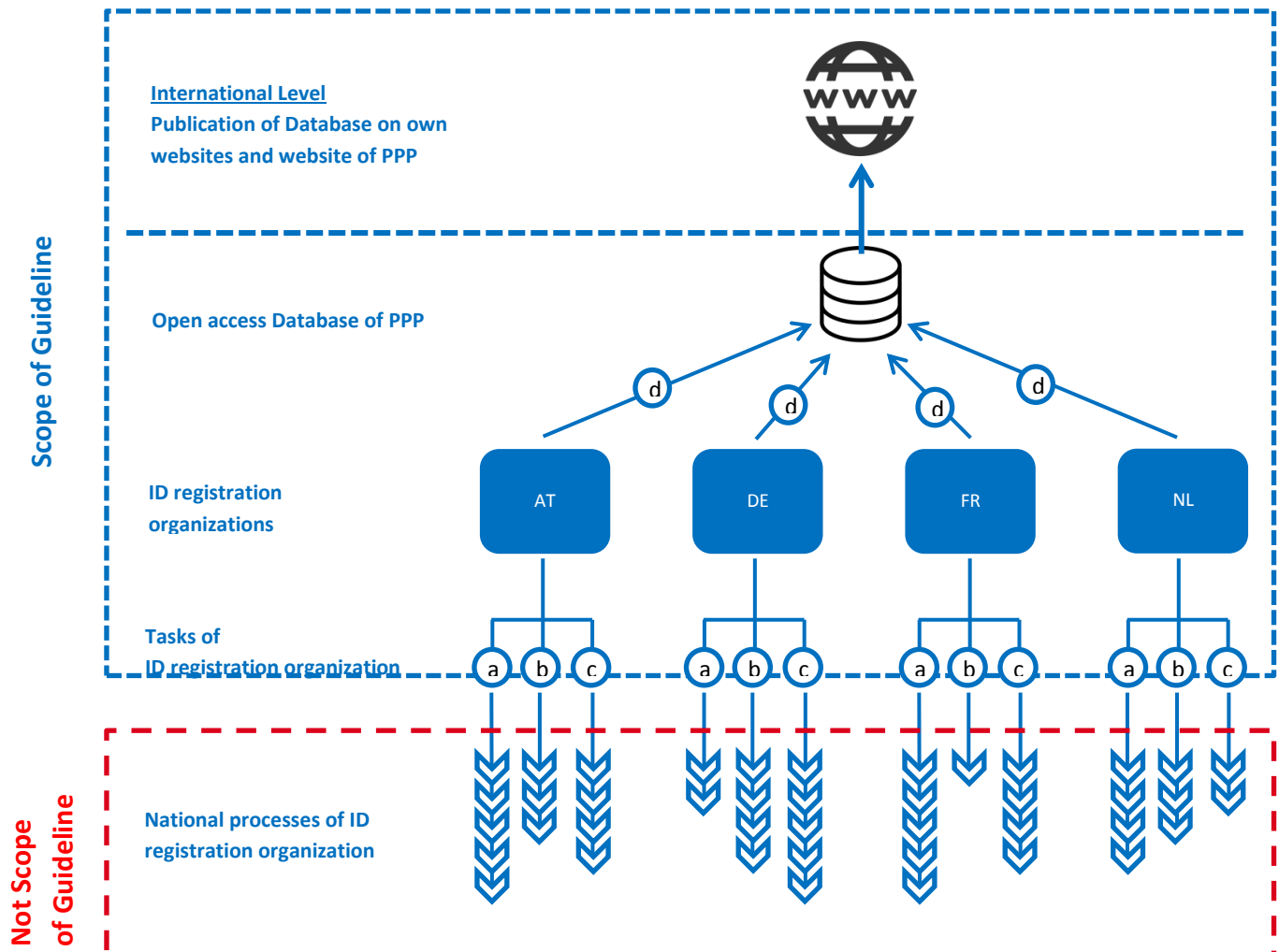


Figure 4 – Scope of Guideline

Description of Tasks

- a. The ID registration organization has to verify whether the ID applicant is officially registered as an enterprise/institution/association
- b. The ID registration organization has to register
 - i. Global Service Provider IDs (Country Code + Provider ID) to verified EVSPs in the own country
 - ii. Global Spot Operator IDs (Country Code + Spot Operator ID) to verified EVSE operators in the own country
- c. The ID registration organization has to implement processes so that EVSPs and EVSE operators are able to modify or transfer their IDs if they change legal status.
- d. Each national ID registration organization has to produce a download able file containing the following set of information for each verified EVSP and EVSE operator:

- i. Global Service Provider IDs and/or Global Spot Operator IDs (mandatory)
- ii. Name of enterprise/institution/association that received this ID (mandatory)
- iii. Contact details of enterprise/institution/association (optional)
- iv. URL of enterprise/institution/association (optional)
- v. URL of national ID registration organization (optional)

This file shall be in a csv format, and shall be accessible on the ID registration organization website as well as on the common website of the joint public-private working initiative.

In addition to these tasks, it is crucial that the joint public-private working initiative starts a process that every EVSE operator or EVSP of any Member State of the European Union and European Economic Area will have a solution to get ID fully compatible across Europe. (See point 4.b) Therefore, the currently existing national ID registration organizations have to ensure that EVSPs and EVSE Operators without a national ID registration organization in their country **are able to “reserve” an ID at the joint public-private working initiative**. This dataset of reserved IDs is published on the common website of the joint public-private working initiative (see point 8.b) and can be used as an initial dataset when new national ID registration organizations appear.

7 COMMON RULES

- a. The ID registration organization must ensure compatibility of its organization with this common Guideline.
- b. The ID registration organization agrees to stick to the ID-syntax described in point 5 and must ensure unicity of Global Service Provider IDs and Global Spot Operators IDs. The national ID registration organizations must not deliver IDs with country codes for which they are not entitled, in order to warranty their uniqueness all over Europe.
- c. The ID registration organization will verify that the information transmitted to the open dataset (see chapter 6.d) fits the national and European rules about data privacy and confidentiality. The registration organization also has to include in its own rules and process, the ability to transmit this information to the open dataset.
- d. In principle one EVSP/EVSE Operator has only one Global Service Provider ID and/or Global Spot Operator ID. However, in some countries differing business cases make it necessary that EVSPs and EVSE operators have the right to have more than one Global Service Provider ID and/or Global Spot Operator ID.

8 DATA PUBLICATION

The ID registration organizations agree to publish relevant information on their own website and on the common website of the joint public-private working initiative to inform relevant stakeholders of the industry. The following information should be provided:

- a. list of all verified EVSPs and EVSE operators
- b. list of “reserved” IDs for EVSPs and EVSE operators from other countries
- c. this common Guideline
- d. description and contact details of the ID registration organizations
- e. links to ISO/IEC 15118 standard, eMI3 and other relevant standards

9 GLOSSARY:

No.	Used Terminology	Abbreviation	Also known as
1	Electric Vehicle Supply Equipment	EVSE	Charge point
2	Electric Vehicle Supply Equipment Operator	EVSE Operator	Charge point operator (CPO)
3	Electric Vehicle Service Provider	EVSP	E-Mobility Provider (EMP)
4	E-Mobility Account Identifier	e-MA ID	Identifier for final E-Mobility User
5	Electric Vehicle Supply Equipment Identifier	EVSE ID	Identifier for Charge point
6	E-Mobility Account	e-MA	Account of final E-Mobility User
7	Electric Vehicle Supply Equipment Pool ID	EVSE Pool ID	
8	Global Service Provider ID		First 5 Digits of eMA ID
9	Global Spot Operator ID		First 5 Digits of EVSE ID
10	European Commission	EC	
11	Joint Public-Private Working Initiative	JPPWI	
12	Sustainable Transport Forum	STF	