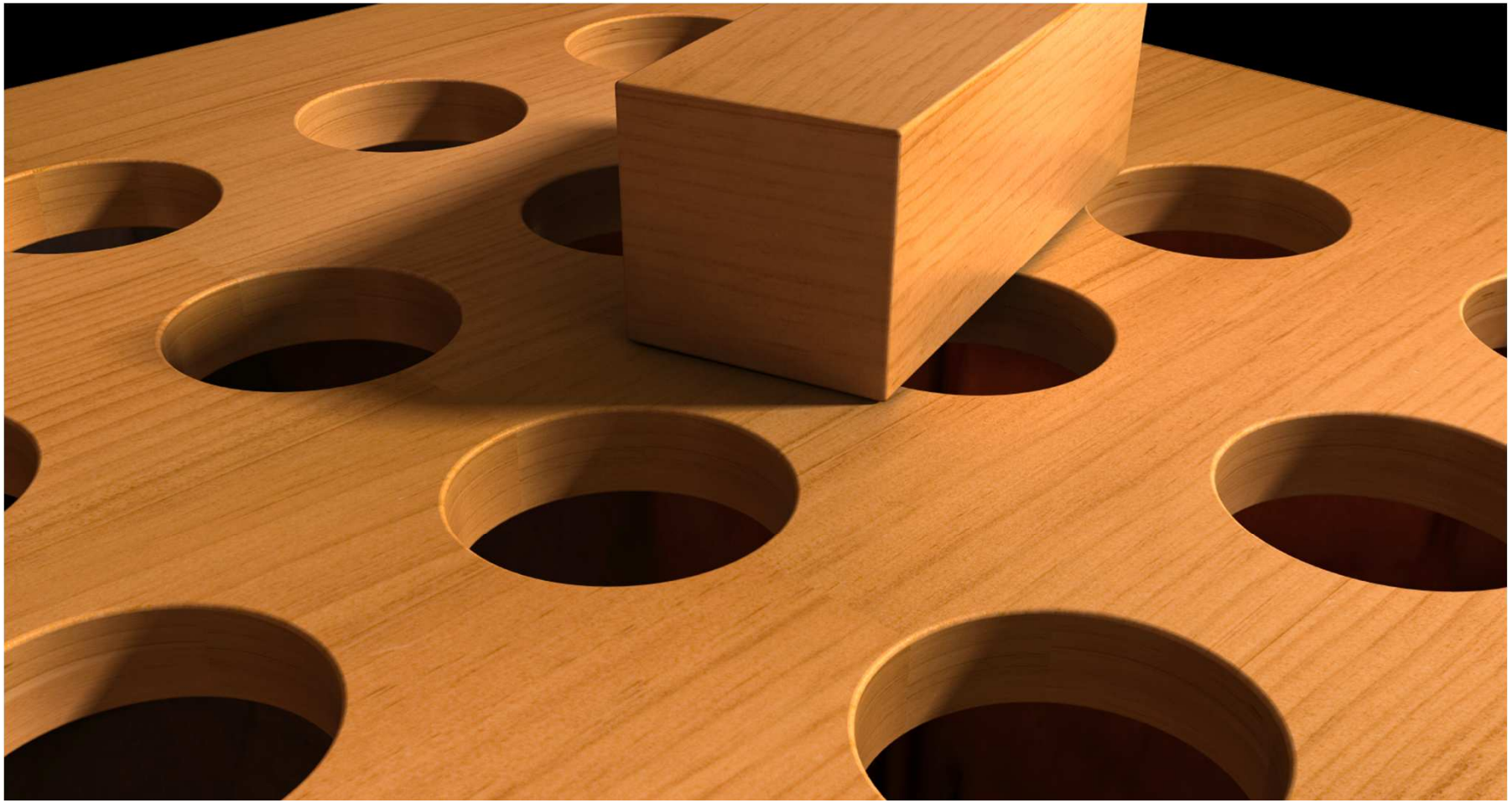
eMobility ICT Interoperability Innovation Group

Accelerating E-Mobility to the next level through Open ICT Standards

EVS27 Speaker Session 1F

18th of November 2013



Where are we coming from?

Where are we now??

Where are we going?

For years the EV industry players have been working indepently to solve eMobility problems

eMI3 has been initiated by active industry players to bring about better coordination of diverse efforts in order to create workable cross-industry ICT standards

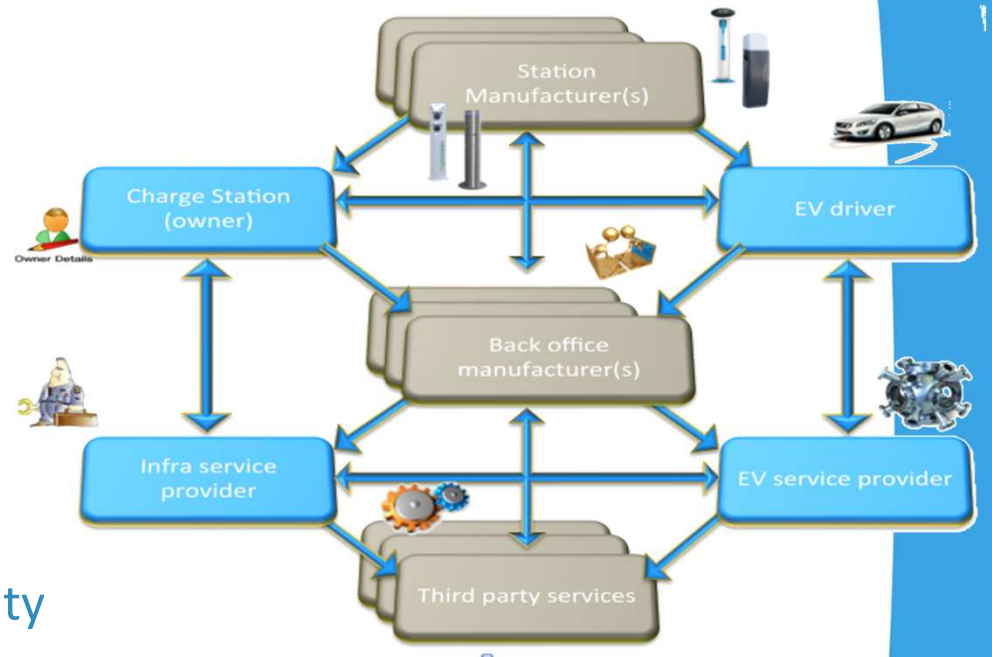
eMI3 aligns the EV industry for the creation of interoperability and architecture to enable a seamless driver experience

Why are interoperable ICT standards important to eMobility?

- We need to create a seamless driver experience
- Bridge the gap towards compelling products and services that bring EV driving the convenience needed to break the vicious circle
- Support a wide array of potential convenience – and value-adding services
- Without common, harmonised data identifiers, for instance, it will be impossible for a EV driver to roam from his home-charging network to another one for which he does not have a contract.

What benefits do interoperable ICT standards bring?

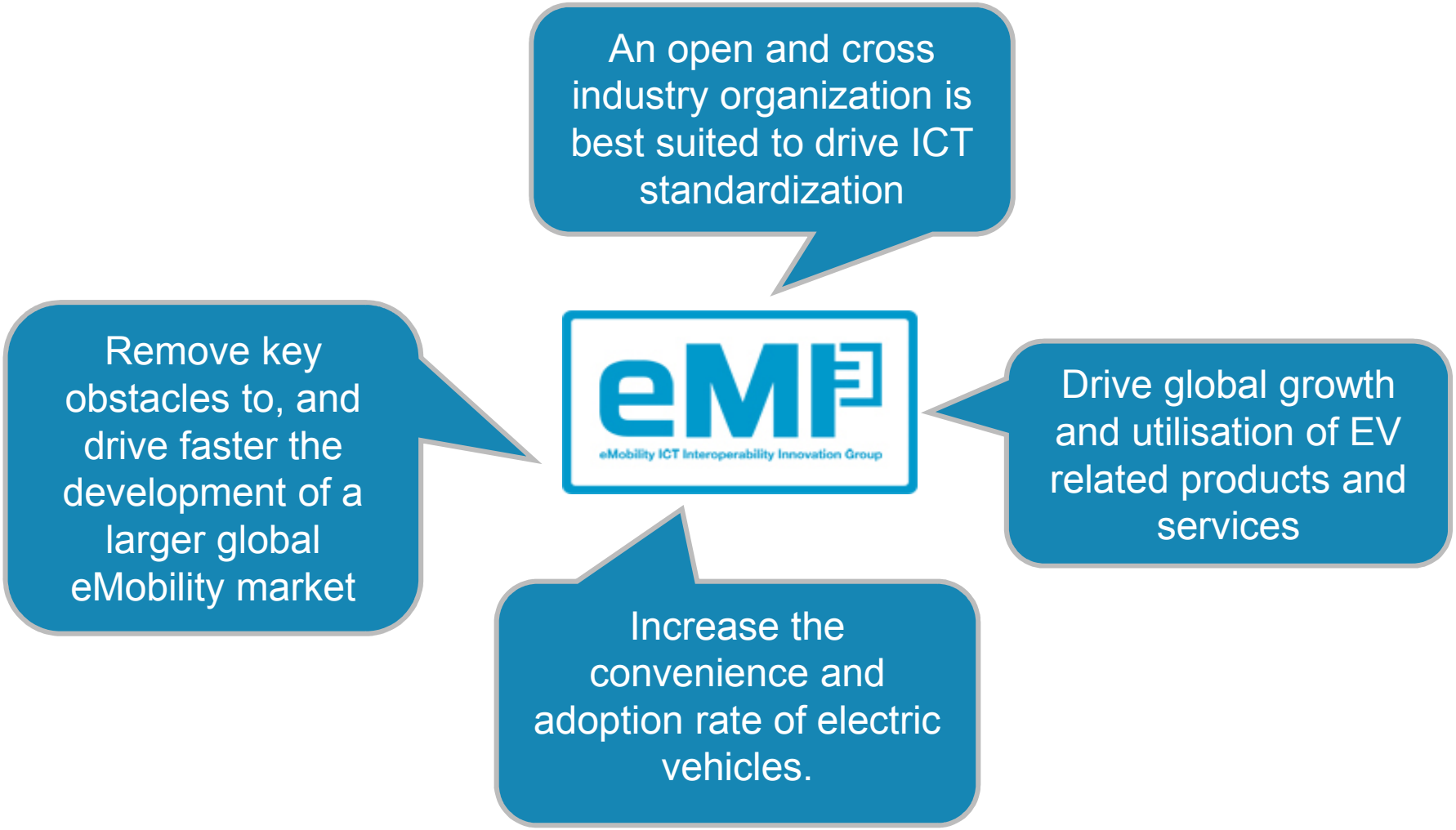
- Accelerate global EV market development
- Reducing the operational costs and complexity to setup interconnectivity amongst actors and platforms
- Enabling ‘best-of-breed’ services
- Insuring speed, flexibility, and scalability
- Facilitating systems integration



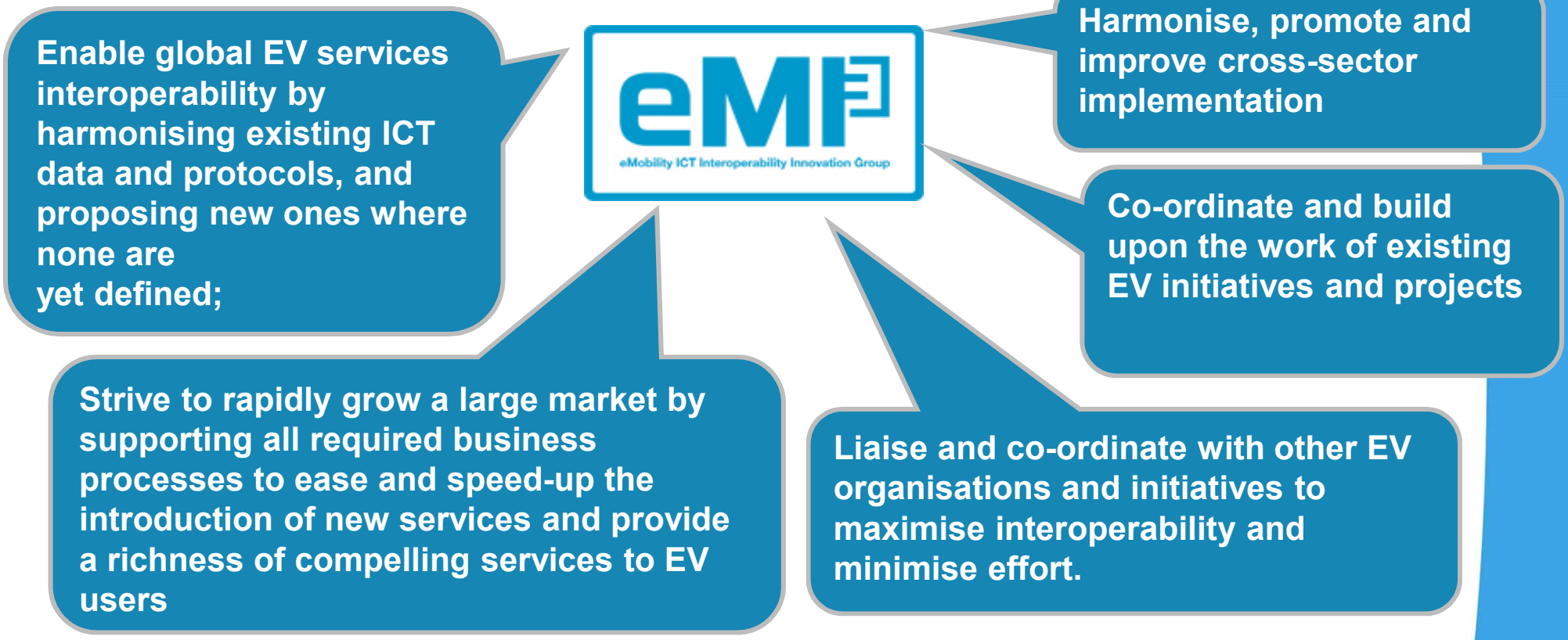
eMobility ICT Interoperability Innovation Group (eMI³)

Around 50 organisations joined forces and formed eMobility - ICT Interoperability Innovation Platform eMI³ to address EV eco-system standardisation

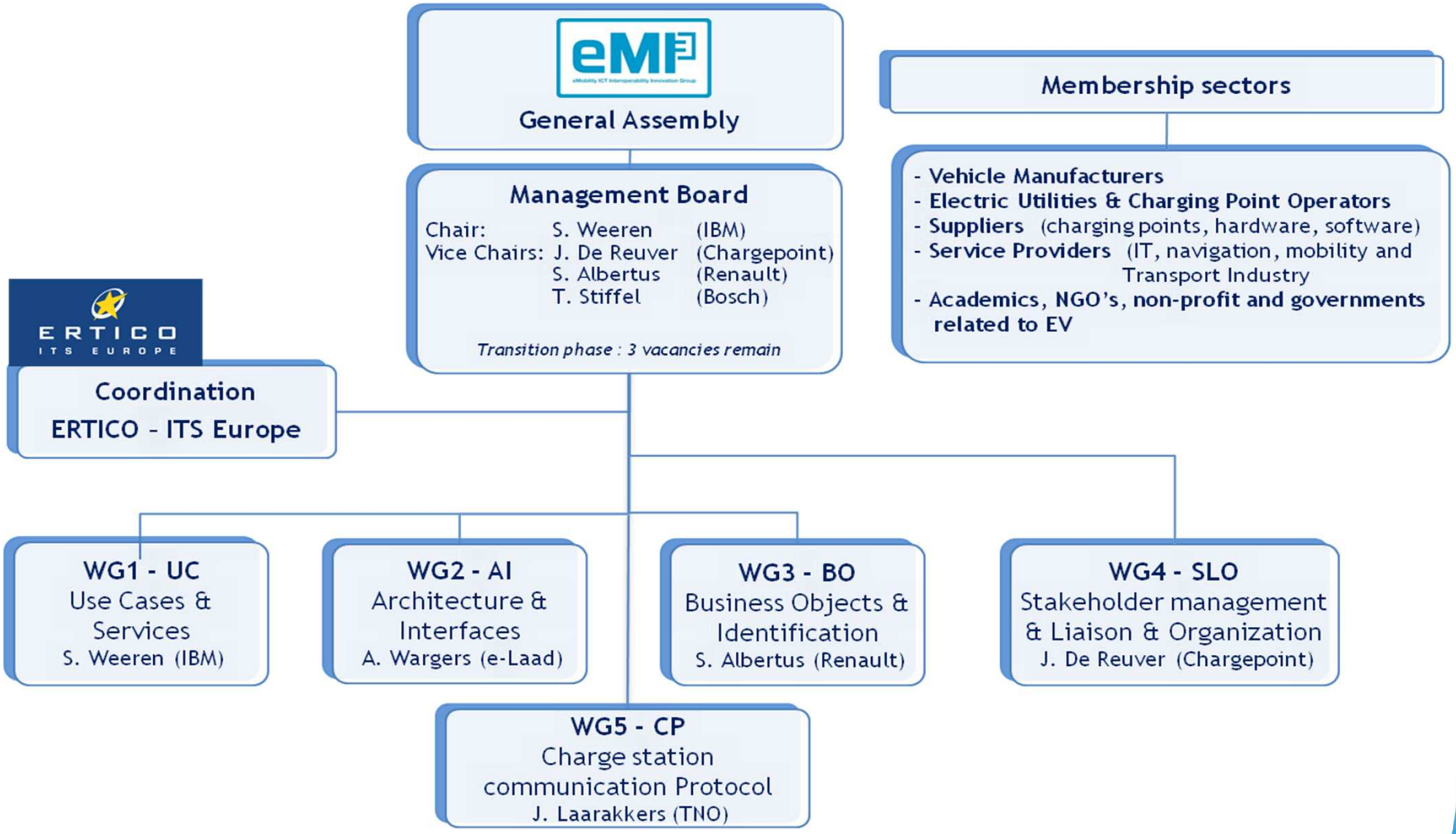
eMI³ – Vision and key beliefs



eMI³ – Scope and Goals



eMI³ Group – Org chart



Working Group D

WG 1 – UC
Use Cases & Services

- **Goal**
  - *Collect, establish and prioritize relevant use cases and service descriptions as basis of eMI3 technical work. We strive to crystallize generic use cases as basis to derive suitable architectures and interfaces including non functional requirements like data security and privacy*
- **Milestones**
  - Final draft top 3 Generic UC: roaming, search & reserve, smart charging
  - Draft Primary UCs: search & find with roaming, smart charing at home

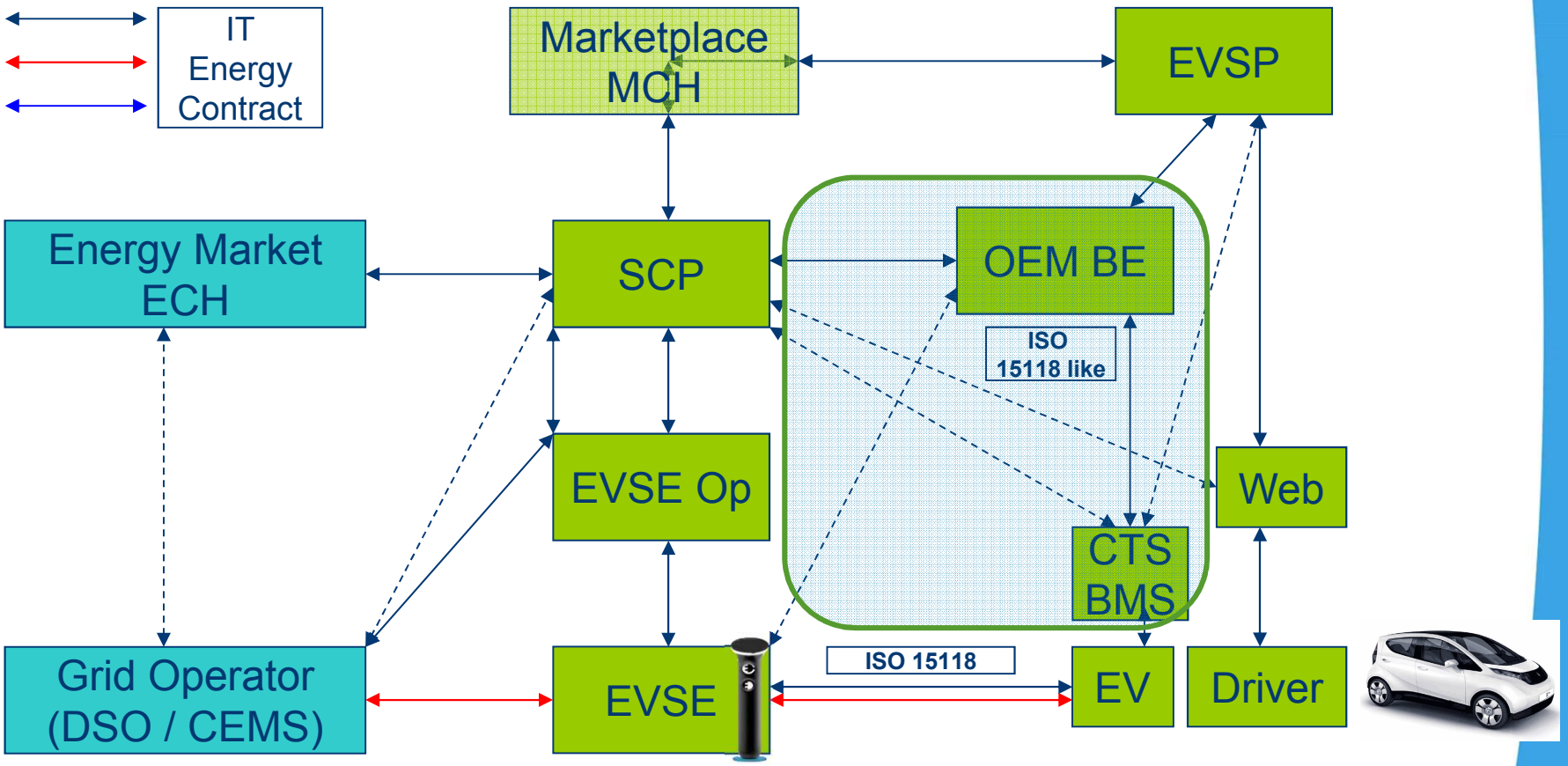
WG UC Paradigm Shift in Charging?

- **Achievements**
  - New role Smart Charging Provider (SCP) developed for GUC
  - SCP introduced into standardisation (e.g. DKE) and well received

WG UC Paradigm Shift in Charging?
Lean (Smart) Charging @ parking

Charge with minimum investments in simple plugs within limits of local grid via SCP – OEM BE - EV

EKZ



WG UC Paradigm Shift in Charging?

- **Achievements**
  - New role Smart Charging Provider (SCP) developed for GUC
  - SCP introduced into standardisation (e.g. DKE) and well received
  - Improved common understanding of roles vs actors & companies

Working Group D

WG 1 – UC
Use Cases & Services

- **Next steps**
  - Apply IEC format and finalise GUCs
  - Extend and finalise PUCs
    - PUC Basic Search and Find (w/o roaming)
    - PUC Search and Find with roaming
    - PUC Reservation (create, modify, …)
    - PUC Authentication & Authorisation
    - UCs Access Methode to Charge Station
    - PUC Smart charging at home via OEM backend
    - PUC SC with concentration of EVSEs
    - GUC Charge Station Management & PUCs
  - Liase with NEMA, CEN/CENELEC IEC

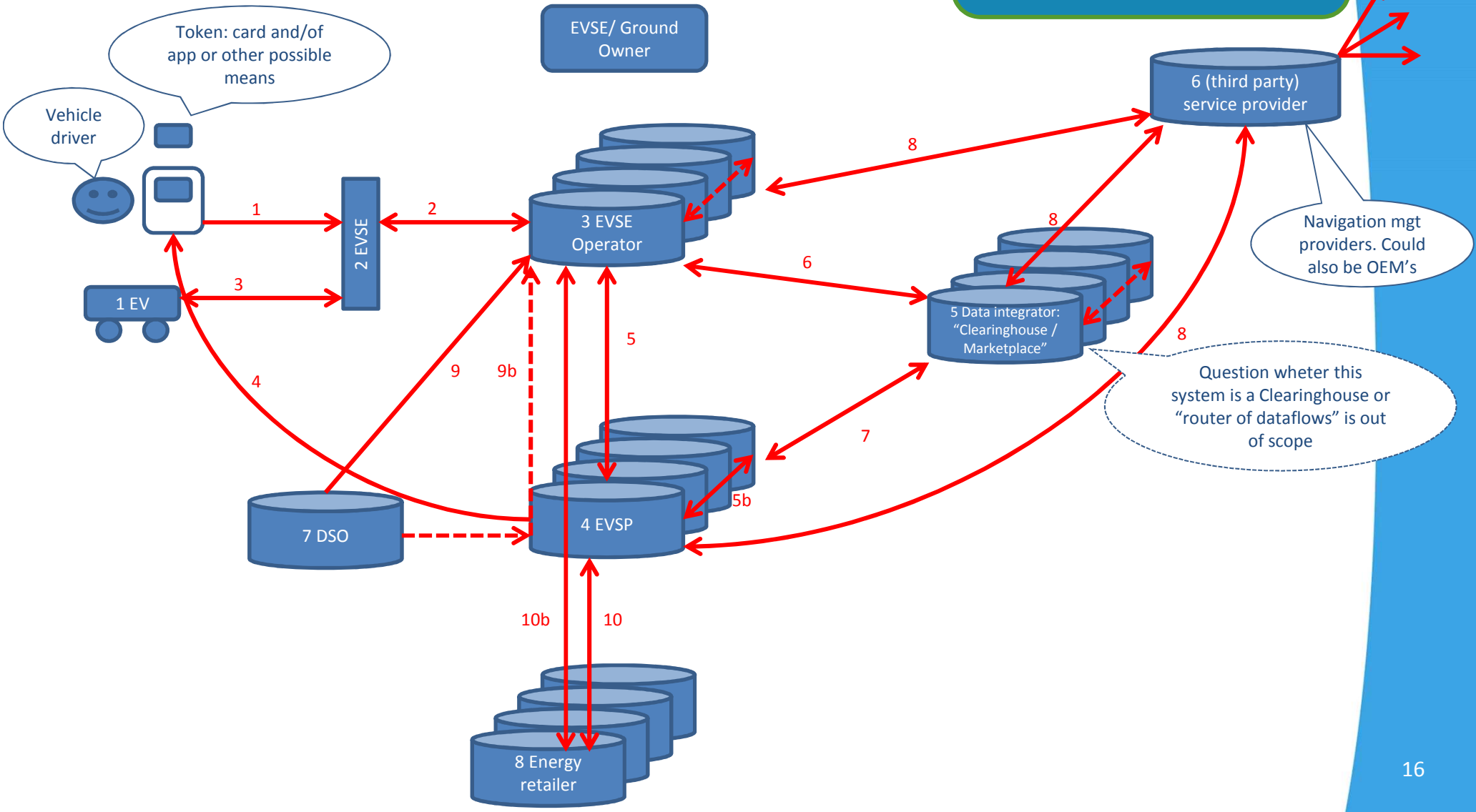
Working Group D

WG 2 – AI Architectures & Interfaces

- **Goal**
  - Create a reference architecture
  - Create interface descriptions
- **Delivarables**
  - Reference architecture (see next sheet)
  - First drafts on ‘search&find’ and ‘basic roaming’
    - **Functional description and IT-code (WSDL)**
- **Next steps**
  - Following roadmap UC developments

Reference architecture

WG 2 – AI
Architectures &
Interfaces



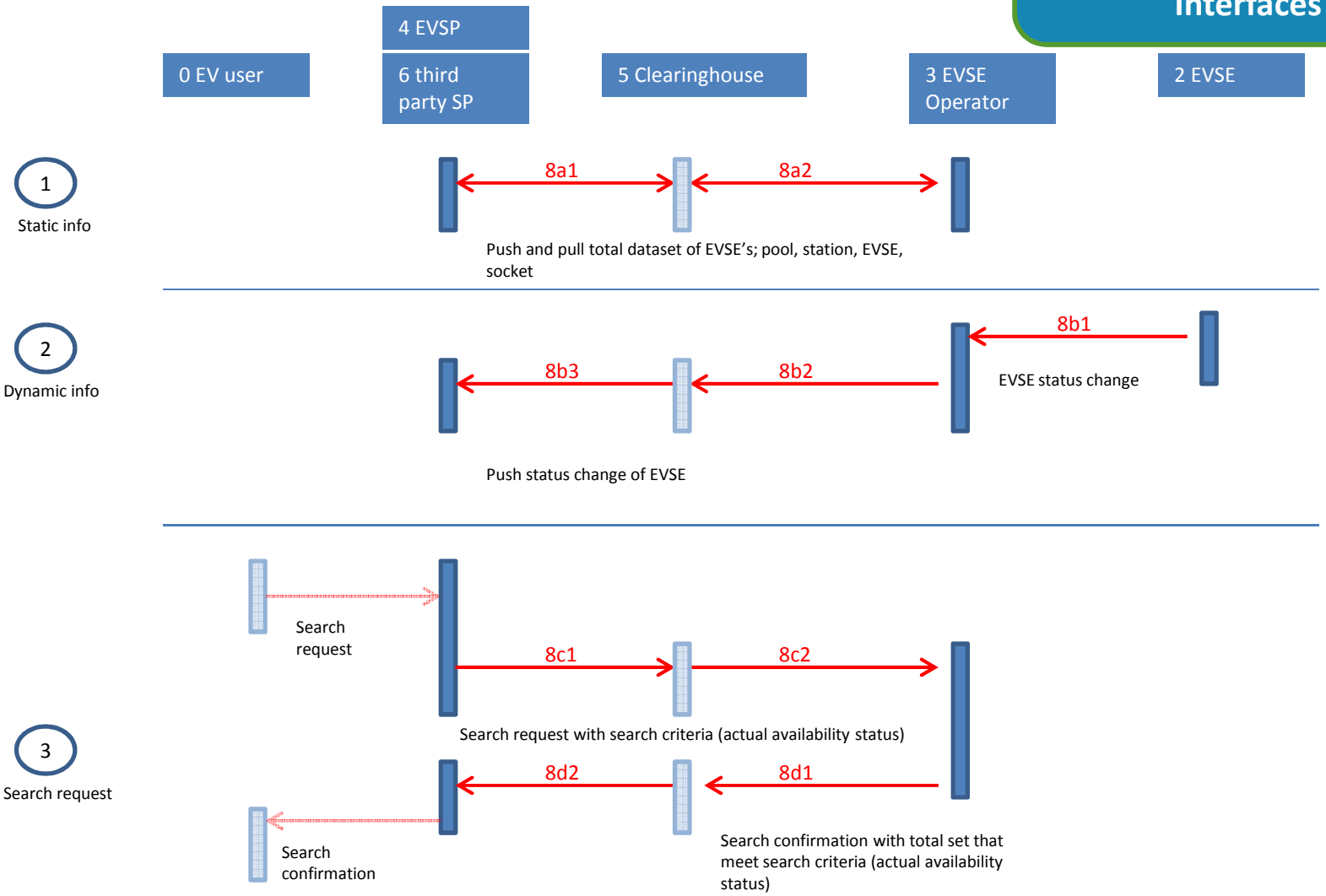
Reference architecture

WG 2 – AI
Architectures &
Interfaces

- The reference architecture provides in all the roles (f.e. EVSE Operator and EVSP) and systems (f.e. EVSE) in the EV landscape
- Every role is considered a seperate system as reference for creating the interface
- Every line in the previous sheet is an interface between systems
- Based on the specific use case, for every line an interface description, including the defined Business Objects, will be specified
- An example of ‘search&find’ on the next sheet

Interface ‘search&find’

WG 2 – AI Architectures & Interfaces



Working Group Goal

WG 3 – BO
Business Objects & Identifiers

- **What do we mean by BO :**
  - a standardized set of data
  - describing products, services, contracts/identifiers
  - exchanged during charge related services performance
  - by the different actors (EVSP, EVSE Operators…)

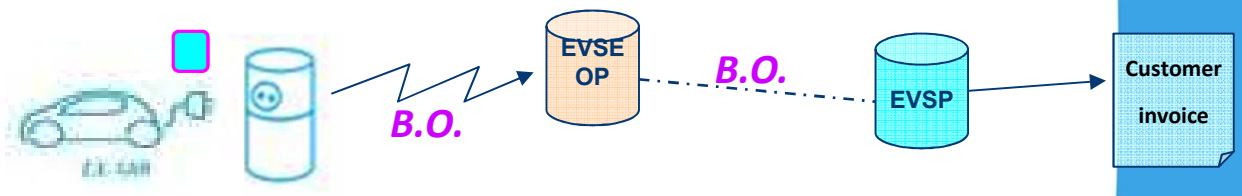
- **Why BOs :**
  - similar to any activity (banking, phone, speech ….)
  - basis of interoperability :
    - define common words
    - with common understanding

19

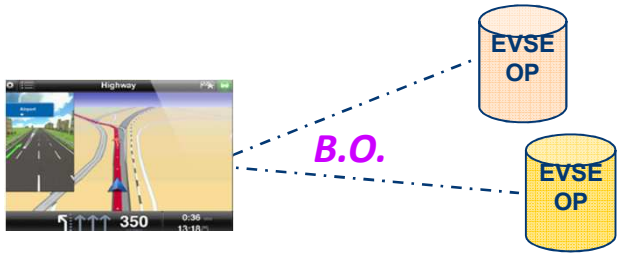
Working Group

WG 3 – BO
Business Objects & Identifiers

- **Use-cases require information and exchange process.**
  - –BO inputs are coming from WG 1 and 2
- **3 use cases are considered at this stage :**
  - –Authentication
  - –Clearing



  - –Charging pole search and find



Working Group D

WG 3 – BO
Business Objects & Identifiers

- **Authentication :**
  - –2 Business objects are required : an identifier of the charging contract and an identifier of the authentication device
    - *mber*
- **Clea**
  - –On the top of an account
  - –A description of the charging session : CDR

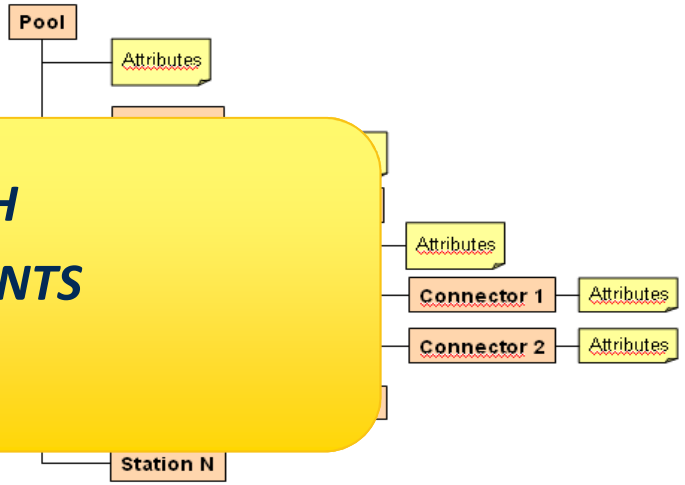
FIRST IDENTIFIER MODELING ALREADY ALIGNED
AND ADOPTED BY
ISO/IEC 15118
AND NEMA

Working Group D

WG 3 – BO
Business Objects & Identifiers

- **Search and find :**
  - **Requires a description of the charging pole including :**
    - Normal POI information
    - Electrical information
    -
    -
  - **Allow**
    - Get all ePOI
    - Get available ePOI
    - Get ePOI changes
    - Get quick chargers …….

FIRST BO MODELING IN LINE WITH NAVIGATION PROVIDER REQUIREMENTS AND NEMA



Working Group Next steps

WG 3 – BO
Business Objects & Identifiers

- **Next step :**
  - Publish the first BO standard among eMI3 members
- **Future milestones :**
  - **1st semester 2014 :**
    - Second release to integrate latest WG 1 and 2 requirements
  - **2nd semester 2014 :**
    - Handle charge management Use case

Working Group D

WG 5 – CP
Charge Station Communication Protocol

- **Goal and Scope**
  - **Defining and standardizing a communication protocol between EVSE and backend systems**

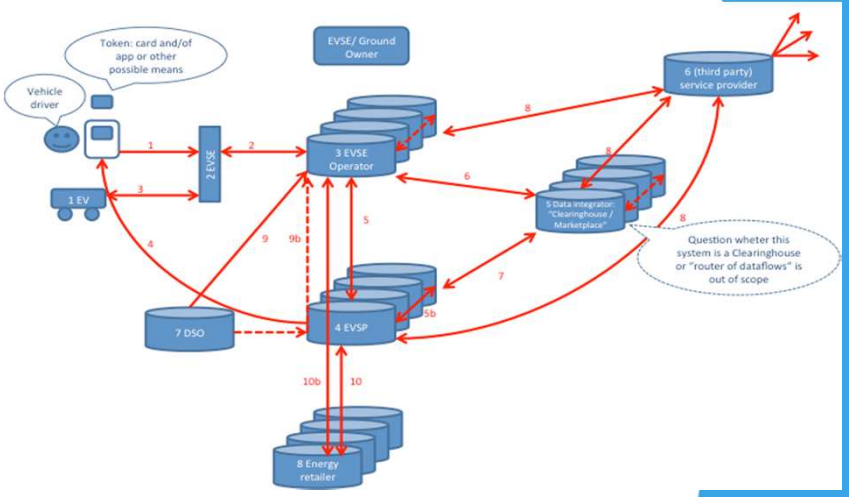
  - Based on the Green eMotion New Work Item Proposal
  - WG5 was launched due to lack of standardization in this Electric Vehicle Service Equipment (EVSE) area.
  - Produce a detailed specification of a standardized protocol for controlling and managing EVSE. The protocol will communicate over the link established between EVSE equipment and back-office management systems.
  - It will build on previous work done in this area, taking into account existing deployments and future requirements.

Working Group 5

WG 5 – CP
Charge Station Communication Protocol

- **Milestones**
  - eMI3-WG5 started in Q2 2013
  - Call for input on existing protocols begin Sept. 2013
  - EVSE Communications Protocol Call for Nominations closed at 2 Nov. 2013

- **Achievements**
  - Over 10 companies active in eMI3-WG5
  - Five nominations received
  - Started requirement analysis process



Working Group D

WG 5 – CP
Charge Station Communication Protocol

- **Next steps and tasks identified**
  - **Task 1: Establish list of fundamental requirements to be supported by the protocol, target end Q1 2013**
    - Task 1.1 Compile a comprehensive list of requirements and features to be supported
    - Task 1.2 and 1.3 detailed assessment of deployed solutions & collect other information
  - **Task 2: Implementation options**
    - Including Identify the various network-level technologies that can transport the protocol
  - **Task 3: Specification of protocol release 1, target Q4 2013**
  - **Task 4: Planning / development of future releases**
  - **Task 5: Detail interoperability and compliance requirements**

Summary

- Lack of coordination across existing EV related activities
- eMI3 is focussed on aligning key interfaces to drive mass uptake of EV's
- Moving from a standing start to a formal organization within one year
- ISO 15118 and NEMA already adopted eMI3's definitions of unique identifiers
- Introduction of a new Smart Charging Provider role (SCP) for standardization

Join us…

We invite all EV market players to join us. Please visite our website:

www.emi3group.com

For more information please contact:

Jean-Charles Pandazis

eMI³ Coordinator

JC.pandazis@mail.ertico.com

ERTICO – ITS Europe
Avenue Louise 326
B-1050 Brussels
Belgium

Join us - don't be the spare wheel!!!

Discussions QA

Q1: What type of organizations are involved?

A1: We have a range from small to large to NME's and a large range of different sector representatives, going from OEM's, station vendors etc.

Q2: Why is eMI3 valuable to your company?

A2 (guideline): Answer with real world examples

Q3: Why do you think eMI3 will be successful?

A3: We are setting the stage for future policies which can enable broader adoption of EV market. All player have the business need to solve the overarching EV market problems

Q4: Why do you set this organization up now and why is eMI3 different then all the other dissemination project?

A4: We take our responsibility as a market to solve the driver problem and we are not a dissemination project, we are here to stay to set de-facto standards

Q5: What is the scope of the organization?

A5: We are setup as a global organization having member coverage all over the whole. Already liaising with NEMA