



Unplugged

nubln886a



# Interoperable Inductive Charging for Electric Vehicles

FABRIC One-Day Conference, Brussels

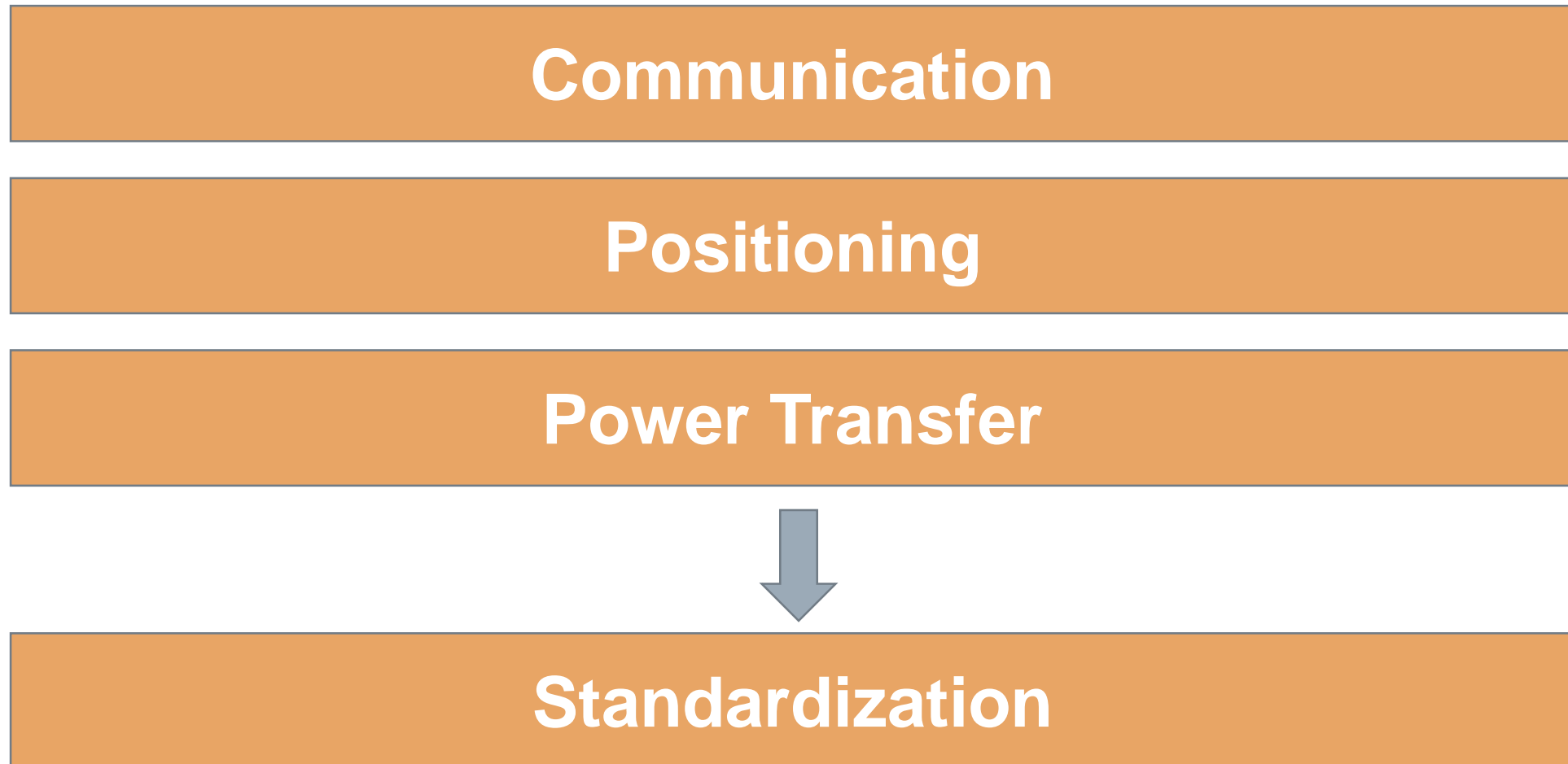


# Project Details

- › Project Duration: 9/2012 – 3/2015
- › Budget 3.9 Mio. €
- › Objectives
  - Inductive charging in *different power* classes and *vehicle types*
  - *Interoperability* on different levels
  - *Technical feasibility* of wireless charging scenarios
  - *Socio-economic aspects* of wireless charging
  - Standardization

# Consortium



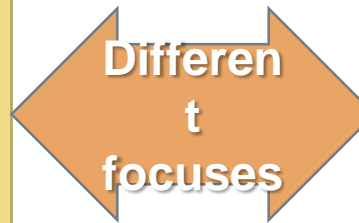


# Test sites

## Aachen (Research only)

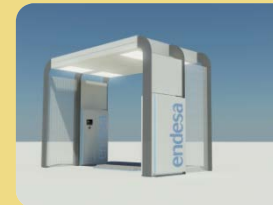
- Low power transfer (3.7 kW)
- Positioning
- Communication
- EMI shielding

SDCC	B - Communication setup	SDCC
send	supportedAppProtocols	read
read	negotiation of charging protocol	send
send	supportedAppProtocols	read
read	negotiation of charging protocol	send
send	SessionSetupReq	read
read	Definition of a session ID	send
send	SessionSetupRes	read
read	Definition of a session ID	send
send	C - Certificate handling	read
read	ServiceDiscoveryReq	send
send	Enables the SDCC to find all services provided by the SDCC	read
read	ServiceDiscoveryRes	send
send	D - Identification, Authentication and Authorization	read
read	PositioningStartReq	send
send	new message for initiating positioning	read
read	PositioningStartRes	send
send	PositioningReq	read
read	new message for tracking positioning	send
send	PositioningRes	read



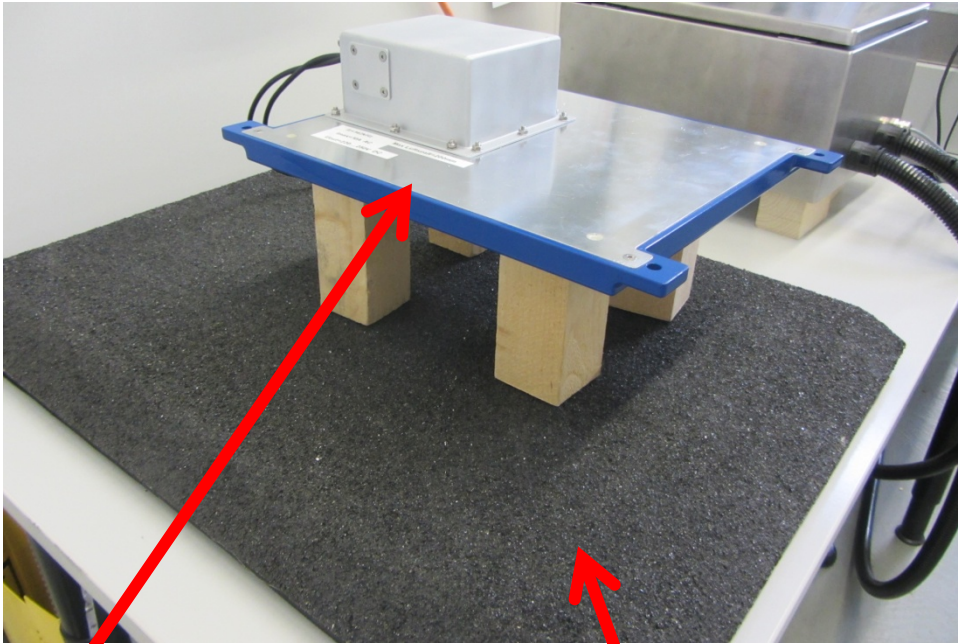
## Zaragoza (Research & Demonstration)

- High power transfer (50 kW)
- Interoperability
- Billing
- Integration into public environment





# Passenger Car System @ 3.7kW



Vehicle Pickup

Primary coil



# Commercial Vehicle System @ 50kW



Vehicle Pickup

Primary coil

# Communication

- › If power transfer is wireless, communication must be wireless, too.
- › An existing wireless standard should be used.
- › The wireless charging communication should follow the IEC15118 standard as much as possible.

**ISO**

**COMMITTEE DRAFT ISO/CD 15118-4**

Date: 2014-03-05 Reference number: N 2508

Supersede document:

**WARNING:** This document is not an International Standard. It is distributed for review and comment. It is subject to change without notice and may not be referred to as an International Standard.

Receipts of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

ISO/TC 22/SC 3

Title: Electric and electronic equipment

Decisions to P- and O-members, and to technical committees and organizations in liaison for:

☐ discussion at (specify date of meeting) on

☐ comments by (date)

☒ approval for registration as a DIS in accordance with 2.5.8 of part 1 of the ISO/REC Directives, by 2014-06-06 (date)

(P-members vote only; ballot form attached)

P-members of the technical committee or subcommittee concerned have an obligation to vote.

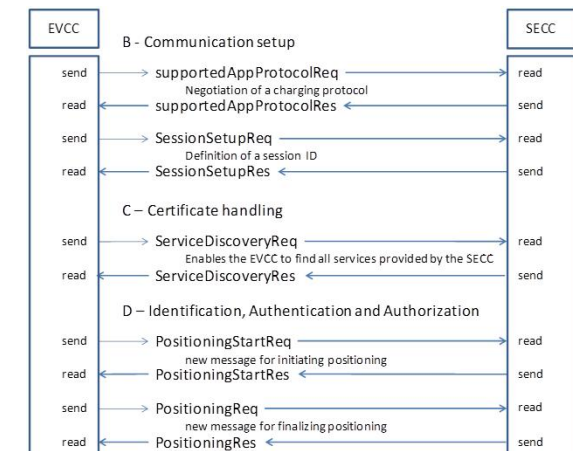
Secretariat: DIS

English title: Road vehicles - Vehicle to grid communication interface - Part 4: Network and application protocol conformance test

French title: Véhicules routiers - Interface de communication entre véhicule et réseau électrique - Partie 4: Essai de conformité du protocole d'application et du réseau

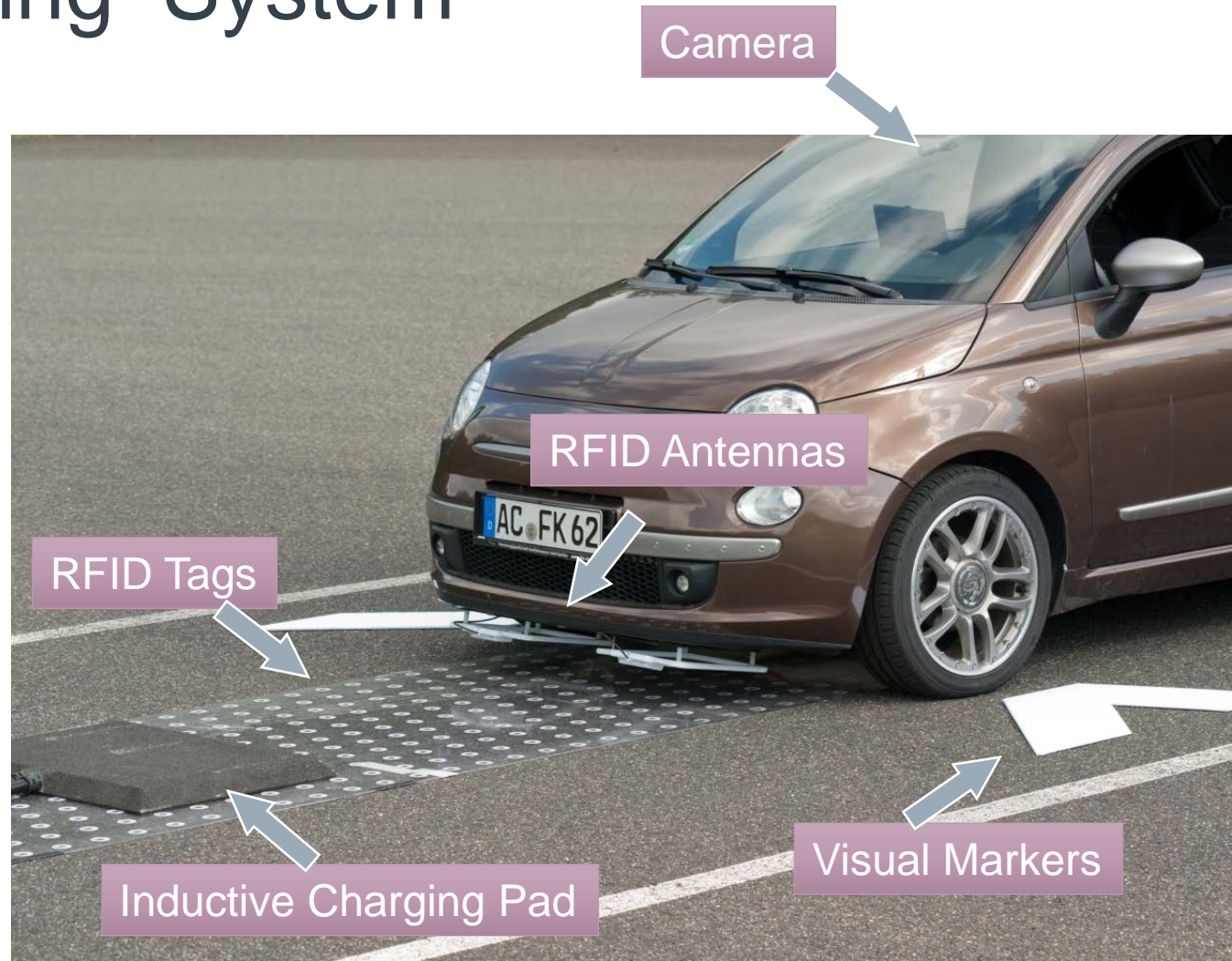
Reference language version: ☒ English ☐ French ☐ Russian

Introductory note





# Positioning System



<http://unplugged-project.eu/>

