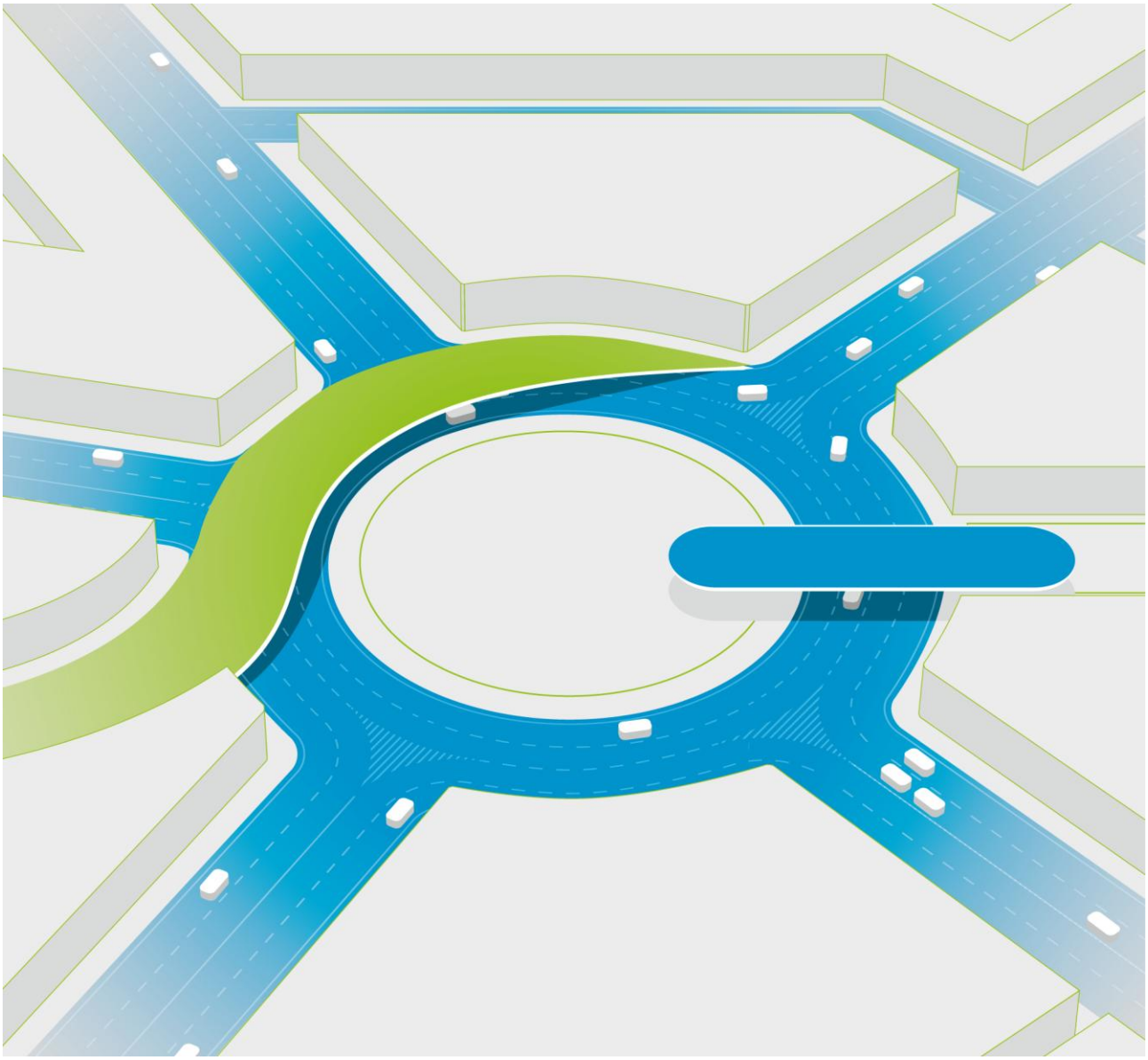
combining infrastructures for efficient electric mobility

Deliverable D300.5 (v1.0)

System design, integration and technical evaluation



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955 route des Lucioles “Ecolucioles B2”

Revision and history chart

Version	Date	Comment
0.1	31.08.2014	Initial template CRF
0.2	30.09.2014	Contribution from Hitachi, CG38, CEA, Tecnositaf, CRF
0.3	10.10.2014	Draft version released
0.4	13.10.2014	Draft Running version with contribution from Renault, Polito
0.5	13.10.2014	Draft Running version with some updates
0.6	14.10.2014	Draft Running version with some updates
0.7	14.10.2014	Draft version with updates
0.8	15.10.2014	Draft version with updates
0.9	15.10.2014	Draft version before internal review
1.0	31.10.2014	Final version

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Executive Summary

The eCo-FEV project aims at achieving a breakthrough in Fully Electric Vehicle (FEV) introduction by proposing a general service platform for integration of FEVs with different infrastructure systems cooperating with each other – thus allowing precise FEV telematics services and charging management services based on real time information.

The general concept of eCo-FEV is based on the development of innovative next generation electric mobility (E-mobility) infrastructure by mutual system cooperation among FEV and independent FEV-related infrastructures being networked. The cooperative E-mobility infrastructure enables the information collection from independent infrastructure systems and provides data aggregation functionalities to enable cloud based high quality FEV services for FEV users.

In previous deliverables, (D200.1Uses case definition and requirements, D200.2System architecture, D200.3System and component specifications) the eCo-FEV overall architecture and functional design have been defined. A set of sub systems has been identified and developed during WP3 according to the two different scenarios, wireless charging and conductive charging. Besides some technical differences, the two charging solutions share the same relationship between existing FEV related infrastructure systems and eCo-FEV system. A set of common services has been developed for FEV user or FEV fleet operator to improve the FEV usage efficiency in real travelling and traffic situations.

The present deliverable describes how the eCo-FEV system architecture has been integrated starting from the defined sub systems, namely in vehicle On Board Unit (OBU), road side unit (RSU), charging infrastructure system and eCo-FEV backend sub system. These sub systems are interacting with each other, and with different FEV related infrastructure systems.

All defined sub systems have been developed and integrated according to the system architecture designed in previous deliverables.

Technical validation has been performed to enable testing activities of WP4. The methodology and validation results are reported in this deliverable.