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EUROPEAN COMMISSION

European Climate, Infrastructure and Environment Executive Agency (CINEA)

Grant agreement no. 101056765

Electric Vehicles Management for carbon neutrality in Europe

Deliverable D 1.7
Patent of V2X Management Station

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Prepared by	Rui Martins (SEL), Rui Costa (SEL)
Reviewed by	João Marques (INESC ID)
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Disclaimer

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Executive Summary

The development and patenting of the V2X (Vehicle-to-Everything) Management Station is a landmark achievement within Task 1.6 of the EV4EU project, coordinated by Smart Energy Lab in collaboration with key partners including INESC ID, DTU, NEW, and ABB. The present deliverable consists in the demonstration of the application for a patent of the cost-effective solution described in Deliverable 1.6 [1].

The primary goal of this task was to address the technological challenges of integrating EVs into the energy grid, facilitating a sustainable and efficient transportation ecosystem. Electric Vehicles (EVs) are key to the transition towards renewable energy sources, presenting unique challenges and opportunities for the energy sector. The integration of EVs with the grid, especially through V2X technologies, introduces a significant shift in energy demand dynamics, offering a novel source of flexibility in energy management.

Table of Contents

List of Figures

Keywords, Acronym

EV	Electric Vehicle
V2X	Vehicle-to Everything
WP	Work Package

1 Introduction

1.1 Scope and Objectives

The document *Patent of V2X Management Station* emphasizes the innovation and legal safeguarding of the developed V2X Management Station technology. The V2X Management Station plays a role in improving the charging infrastructure for electric EVs, especially in shared environments. It aligns with the overarching goal of the project to enable the integration of EVs into the electrical grid to promote the use of sustainable energy.

1.2 Structure

This document is organized into three chapters to provide a clear and comprehensive overview of the deliverable's contents and implications. Chapter 1 introduces the scope, objectives, and significance of the D1.7 deliverable within the context of the EV4EU project.

Chapter 2 presents the patent and Chapter 3 presents the main conclusions.

1.3 Relationship with other deliverables

The proposed solution has been described in Deliverable 1.6 and will be tested in WP6. Because of that, the installation, commissioning, and validation of the solution will be present in the different deliverable of WP6.

2 Chapter title

The patent of the cost-effective charging solution has been submitted to Portuguese intellectual property institution on April 12th, 2023. The document is present in Figure 2.1.

inpi instituto nacional da propriedade industrial

Campo das Cebolas - 1149-035 Lisboa - Portugal
NIPC: 600017583 / Tel: +351 218 818 100 / Linha de atendimento: +351 218 818 188 / Fax: +351 218 869 308 / E-mail: servico.publico@inpi.pt / https://inpi.justica.gov.pt/

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1 REQUERENTE

Código **Nacionalidade** PORTUGUÊS (PT)

Nome SMART ENERGY LAB – ASSOCIATION

Endereço AVENIDA 24 DE JULHO, 12

Localidade LISBOA **Código Postal** 1249-300

País PORTUGAL

Telefone 213815050 **Telemóvel** **Fax**

Email inpi@clarkemodet.com.pt

Actividade(CAE)

NIF 515654906

Tipo de Representação Agente Oficial de Propriedade Industrial

Código 600031 **Nacionalidade** PORTUGUÊS (PT)

Nome [redacted]

Endereço [redacted]

Localidade [redacted]

País PORTUGAL

Telefone **Telemóvel** **Fax**

NIF -

Exclusivo para este ato? Não

2 MODALIDADE

Modalidade Pedido Provisório de Patente

Realização pesquisa pelo INPI SIM

3 TÍTULO OU EPÍGRAFE

CHARGING MANAGEMENT SYSTEM FOR ELECTRIC VEHICLES

4 FIGURA DE PUBLICAÇÃO

5 INVENTORES

Figure 2.1 – Application of the patent

3 Conclusions

Deliverable D1.7 reports the patent application process to create a replicable and scalable V2X charging infrastructure. The management station's design and functionality align with the broader objectives of the EV4EU project, including promoting EV adoption, enhancing grid resilience, and the integration of renewable energy sources.

The patented solution will be demonstrated in the Portuguese demonstrator allowing the validation of the concept, the test of different control algorithms and the test in real use conditions. Some updates can be introduced in the demonstration phase allowing a better alignment with the needs of the users and increasing the potential of the solution.

4 References

[1] Rui Costa and Diogo Brito, “Deliverable D 1.6 Real-scale prototype of V2X management station,” 2023. Accessed: Mar. 13, 2024. [Online]. Available: https://ev4eu.eu/wp-content/uploads/2024/01/EV4EU-D1.6-Real-scale-prototype-of-V2X-management-station.pdf