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Met4EVCS – Metrology for Electric Vehicle Charging Systems

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VSL B.V.



Measurements for smart electricity grids: workshop and open consultation
15 May 2024, VSL, Delft, NL

Electric vehicles

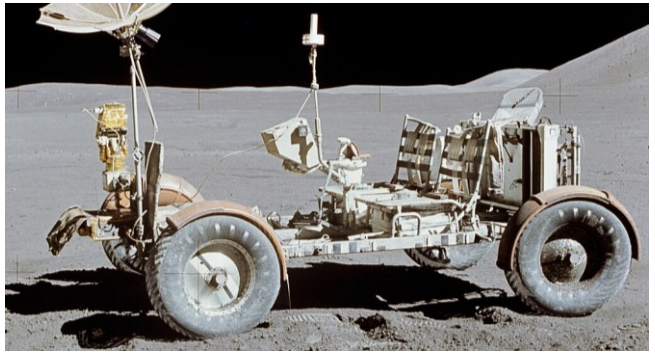












EV charging stations





Met4EVCS consortium

VSL

Government Office of the Capital City Budapest

CMI Czech Metrology Institute

CEM Centro Español de Metrología

VTT

LNE Laboratoire National de Métrologie et d'Essais

Università di Genova

VSL

TÜBİTAK

RISE

Elaadnl

emc Barcelona

ITE Instituto Tecnológico de la Energía

University of Strathclyde Glasgow

INTI Instituto Nacional de Tecnología Industrial

Justervesenet

circe Research Centre for Energy Resources and Consumption

Università degli Studi della Campania Luigi Vanvitelli

Republic of Slovenia
Ministry of the Economy, Tourism and Sport
Metrology Institute of the Republic of Slovenia

Bundesamt für Eich- und Vermessungswesen

Institutul Național de Metrologie

eman ta zabal zazu
UPV EHU

University of Twente.

Met4EVCS aim and objectives

Overall aim: the development of metrology capabilities for the traceable evaluation of EVCSs under realistic operating conditions

1. To define representative on-site **operating conditions** for EVCSs
2. To develop **traceable methods and test benches** for the characterisation of EVCSs under representative operating conditions
3. To develop the required metrological **infrastructure for on-site verification** of EVCS energy metering
4. To facilitate the uptake of the technology and measurement infrastructure





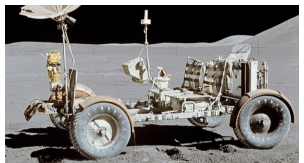












Met4EVCS aim and technical objectives

Overall aim: the development of metrology capabilities for the traceable evaluation of EVCSs under realistic operating conditions.

- Objective 1: To define representative on-site operating conditions for EVCS
  - Onsite measurement of local grid disturbances and local grid impedance for frequencies up to 150 kHz under live grid operation
  - 5 DC and 5 AC chargers of different brands, operating modes and power levels



Met4EVCS aim and technical objectives

Overall aim: the development of metrology capabilities for the traceable evaluation of EVCSs under realistic operating conditions.

- Objective 2: To develop traceable methods and test benches for the characterisation of EVCSs under representative operating conditions for both AC and DC charging following IEC 61851-1
  - AC at 230 V up to 44 kW
  - DC up to 800 V, 500 A, 350 kW
  - Target uncertainty 0.1 % in the presence of conducted emission up to 150 kHz



Met4EVCS aim and technical objectives

Overall aim: the development of metrology capabilities for the traceable evaluation of EVCSs under realistic operating conditions.

- Objective 3: To develop the required metrological infrastructure for on-site verification of EVCS energy metering
  - Target uncertainty 0.5 % under representative conditions
  - Including smart charging and bidirectional energy transfer



Met4EVCS aim and technical objectives

Overall aim: the development of metrology capabilities for the traceable evaluation of EVCSs under realistic operating conditions.

- Objective 4: To facilitate the uptake of the technology and measurement infrastructure developed in the project
  - measurement supply chain
  - standards developing organisations (IEC TC 69, WELMEC WG 11, OIML TC12/p3, EC WgMI E01349, …)
  - end users (EVCS operators, grid operators, EVCS manufacturers, …)



Want to know more?



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