This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824386.



# STANDARDISATION BODIES EDITION

MERLON
WHAT'S IN IT FOR ME?

## BACKGROUND

Standardisation bodies form an essential target group of the MERLON dissemination and exploitation activities. MERLON will develop synergies, through the participation of project partners in key technical committees and working groups towards ensuring compatibility with existing and evolving standards in the Smart Grid domain, while promoting initial designs of interfaces towards accelerating the enhancement of relevant standards and facilitating the exploitation and replication potential of the developed solutions.

## OBJECTIVES

MERLON's objective is to develop an integrated modular local energy management framework for the holistic operational optimisation of local energy systems. This will enable the realisation of new business models, allowing new participants to enter local flexibility markets, for example local energy communities and Microgrid-as-a-Service. Local DSOs will be assigned the role of "Aggregator of Aggregators" for the provision of added value services to the overlay distribution grid. It will equip local stakeholders with new tools and business practices to enable additional benefits for those stakeholders and the wider system.

Provision of a solution that connects such a broad range of parties – many of whom are not conventional actors within energy markets and smart grids – will require compliance with, and development of, open standards.

## SOLUTION

A key objective of MERLON is to deliver open standards-based interoperable solutions that ensure a high replication potential around the EU and can be widely accepted by local consumers/ citizens. MERLON will establish an "open" and end-to-end interoperability and secure big data management framework for open standards-based communications along the local energy system value chain.

To ensure interoperability with external systems the MERLON Interoperability and Data Management platform will comprise an open platform and application software framework that will establish seamless, transparent and homogeneous standardsbased (OpenADR 2.0b, IEC-61850, USEF) interfaces to all integrated MERLON components.

The solution will develop appropriate intelligence to enable flexibility control optimization. Built on this backbone, the MERLON solution will be totally open for utilization by any third party interested to get involved in optimisation of integrated local energy systems. Moreover, the modular character of the MERLON solution allows for its easy deployment in different contexts and locations – but only if this can be facilitated through open standards.

The latest version of OpenADR (OpenADR2.0b) has been initiated and developed based on the semantics, constraints and assumptions of the electricity system. OpenADR2.0b will be further enhanced in MERLON to incorporate semantics for more energy carriers, namely gas and district heating. Moreover, OpenADR 2.0b will be enriched to advance the information abstraction level communicated using the standard and lead the transition from mere price or control commands toward instructions and guidelines that are understandable and actionable by human beings.

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Finally, MERLON will extend OpenADR2.0b to incorporate semantics about human comfort profiles, demand flexibility and all other constructs required for the communications between components of the MERLON integrated framework.

To enable communication with district-wide distributed energy resources (DER), the project will analyse the latest developments of the IEC-61850 series of standards, towards enabling standards-based simple and low-cost web-based communication and integration of DERs and DER systems in the integrated local energy systems management framework introduced in MERLON.

## WHY SHOULD WE CARE?

- MERLON brings the opportunity to influence new, open and flexible, smart grid standards
- Understanding of how new applications and business models will be held back by existing standards, and opportunities to help remove these barriers and therefore realise the potential of these new solutions.

## GOOD TO KNOW

Special focus will be given on the analysis of and harmonisation with widely-accepted open standards for demand response; data management and communications; and smart grid design, planning, and operation.

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