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Generic smart grid requirements – Part 1: Specific application of the use case methodology for defining generic smart grid requirements according to the IEC systems approach

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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GENERIC SMART GRID REQUIREMENTS –

Part 1: Specific application of the use case methodology for defining generic smart grid requirements according to the IEC systems approach

FOREWORD

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IEC SRD 62913-1, which is a Systems Reference Deliverable, has been prepared by IEC systems committee Smart Energy.

This second edition cancels and replaces the first edition published in 2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- it consolidates requirements identification and management and their associated naming rules;
- it leverages IEC SRD 63200:2021, *Definition of extended SGAM Smart Energy Grid Reference Architecture Model*;
- it highlights links between use case methodology and other tools and methodologies (i.e. TOGAF/ArchiMate as used in IEC 61968-1:2020).

The text of this Systems Reference Deliverable is based on the following documents:

Draft	Report on voting
SyCSmartEnergy /169/DTS	SyCSmartEnergy /204/RVDTS

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Systems Reference Deliverable is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC SRD 62913 series, published under the general title *Generic smart grid requirements*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

IEC SRD 62913 generic smart grid requirements are needed to fulfil the SG3 decision 2 made by the SMB at its February 2010 meeting (SMB/4204/DL, Decision 137/10) requesting the need to describe all the functional and system requirements for all smart grid applications.

The IEC Smart Grid Standardization Roadmap states that "the standardization process should offer a formal path between the application as 'requested' by smart grid (stakeholders) and the standards themselves, i.e. a 'top-down' process", whilst at the same time recognizing that for various reasons in many cases this path has not been the one implemented. This has in turn led to inconsistencies in standards.

The purpose of the IEC systems approach is to ensure and improve the interoperability between smart energy systems and components. This approach is based on the business needs expressed by the market. The main purpose of capturing and sharing generic smart grid requirements is the constitution of a basis for coming standardization work, with standards ensuring and facilitating the deployment of smart grid applications.

A working group has been set up within IEC SyC Smart Energy in order to capture the smart grid requirements derived from the market needs, using a standardized approach based on use cases as described in the IEC 62559 series. This work is building on existing use cases, namely within the IEC when they exist, and is carried out collaboratively with the experts of the relevant technical committees.

The IEC SRD 62913 series will deliver an applicable methodology to draft use cases (IEC SRD 62913-1), clarifying 'who does what' with regards to smart energy use cases, and it will also initiate the process of listing, organizing and making available the use cases which carry the smart energy requirements which should be addressed by the IEC core technical standards (IEC SRD 62913-2 series). The IEC systems approach will require adapted tools and processes to facilitate its implementation, and until they are available to the IEC National Committees and experts, the IEC SRD 62913-2 series should be understood as the first stepping stone towards this systems approach implementation. IEC SRD 62913-3 will be a roles database, based on a harmonized naming methodology, to ensure consistency when drafting smart energy use cases. This will provide a consistent and ready-to-use framework for all standardization stakeholders.

Use cases in the top-down approach of IEC SyC Smart Energy (C/1845/RV) are tools to identify smart grid requirements used to assess situations in standards (gaps or overlaps) and in that way contribute to interoperability. These requirements can also be used further as input for interoperability profiles for the testing phase.

These requirements should then feed into the work carried out by IEC SyC Smart Energy with other technical committees in order to ensure the technical standards are developed taking into account the needs and priorities of the smart grid market.

This document corresponds to the specific application of the use case methodology for defining generic smart grid requirements according to the IEC systems approach.

GENERIC SMART GRID REQUIREMENTS –

Part 1: Specific application of the use case methodology for defining generic smart grid requirements according to the IEC systems approach

1 Scope

This part of IEC SRD 62913 describes a common approach for IEC technical committees to define generic smart grid requirements for further standardization work. It uses as input the use case methodology defined as part of the IEC 62559 series, and provides a more detailed methodology for describing use cases and extracting requirements from these use cases. This will achieve a consistent and homogeneous description of generic requirements for the different areas which make up the smart grid environment.

2 Normative references

There are no normative references in this document.