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Edition 1.0 2019-05

SYSTEMS REFERENCE DELIVERABLE

colour inside

Generic smart grid requirements –
Part 2-3: Resources connected to the grid domains

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FOREWORD

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IEC SRD 62913-2-3, which is a Systems Reference Deliverable, has been prepared by IEC systems committee Smart Energy.

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

Draft SRD	Report on voting
SyCSmartEnergy/89/DTS	SyCSmartEnergy/98/RVDTS

Full information on the voting for the approval of this Systems Reference Deliverable can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 "http://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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The IEC SRD 62913 series has been broken down into domains so as to provide a neutral term for document management purposes. Under the general title *Generic smart grid requirements*, the IEC SRD 62913 series consists of the following parts:

– *Part 1: Specific application of the Use Case methodology for defining generic smart grid requirements according to the IEC systems approach*;

– Part 2 is composed of 5 subparts which refer to the clusters that group several domains:

- *Part 2-1: Grid related domains* – these include transmission grid management, distribution grid management, microgrids and smart substation automation;
- *Part 2-2: Market related domain*;
- *Part 2-3: Resources connected to the grid domains* – these include bulk generation, distributed energy resources, smart home/commercial/industrial/DR-customer energy management, and energy storage;
- *Part 2-4: Electric transportation related domain*;

IEC SRD 62913 refers to 'clusters' of domains for its different parts so as to provide a neutral term for document management purposes simply because it is necessary to split in several documents the broad scope of smart energy.

The purpose of this document is to define the generic smart grid requirements of resources connected to the grid domains, i.e. distributed energy resources, smart home/commercial/industrial/DR-customer energy management, energy storage, and bulk generation domains, based on the methods and tools developed in IEC SRD 62913-1.

The document for each domain is composed as follows.

- Purpose and scope.
- The business analysis: to address domain’s strategic goals and principles regarding its smart grid environment. It also lists business Use Cases and system Use Cases identified, their associated business roles and system roles (actors) and the simplified role model highlighting main interactions between actors.
- Generic smart grid requirements: extracted from Use Cases described in Annex B.
- Annex A lists links between domains, technical committees and gathered materials (existing standardization documents, user stories, Use Cases and functional architectures).
- Annex B includes a complete description of Use Cases per domain based on IEC 62559-2.
- Bibliography.

This document is based on the inputs from domain experts as well as existing materials in a smart grid environment.

GENERIC SMART GRID REQUIREMENTS –

Part 2-3: Resources connected to the grid domains

1 Scope

This part of IEC SRD 62913 initiates and illustrates the IEC's systems approach based on Use Cases and involving the identification of generic smart grid requirements for further standardization work for resources connected to the electric power systems – i.e. distributed energy resources, smart home/commercial/industrial/DR-customer energy management, energy storage, and bulk generation domains – based on the methods and tools developed in IEC SRD 62913-1.

This document captures possible "common and repeated usage" of a smart grid system, under the format of "Uses Cases" with a view to feeding further standardization activities. Use Cases can be described in different ways and can represent competing alternatives. From there, this document derives the common requirements to be considered by these further standardization activities in term of interfaces between actors interacting with the given system.

To this end, Use Case implementations are given for information purposes only. The interface requirements to be considered for later standardization activities are summarized (typically information pieces, communication services and specific non-functional requirements: performance level, security specification, etc.).

This analysis is based on the business input from domain experts as well as existing material on grid management in a smart grid environment when relevant. Table 1 highlights the domains and business Use Cases described in this document.

Electric vehicles are on one hand considered as a DER and normally should fit in IEC SRD 62913-2-3; but on the other hand, and for historical reasons, they are separated into two documents and covered in the IEC SRD 62913-2-4 electric transportation domain.

The document will be updated as new editions are published. Table 1 highlights the business areas covered in this document.

Table 1 – Content of IEC SRD 62913-2-3:2019

Domain	Content	Scope described
Distributed energy resources	Identified with 41 business Use Cases and 36 system Use Cases	Operation and monitoring of a DER
Smart home/commercial/industrial/ DR-customer energy management	Described with 8 business Use Cases and 14 system Use Cases	Smart home, smart building, multi-building complexes
Energy storage	Described with 2 business Use Cases	EES services for grid users and system operators
Bulk generation	n/a	n/a

2 Normative references

There are no normative references in this document.