IEC SRD 62913-2-4

Edition 1.0 2019-05

SYSTEMS REFERENCE DELIVERABLE

colour inside

Generic smart grid requirements –
Part 2-4: Electric transportation related domain

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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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FOREWORD

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IEC SRD 62913-2-4, 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/85/DTS	SyCSmartEnergy/101/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- withdrawn,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

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 System 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 related 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*;
- Part 2-5: *Support functions related domains* – these include metering management and asset management.

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 grid.

The purpose of this document is to define the generic smart grid requirements of electric transportation domain, i.e. electric transportation domain, based on the methods and tools developed in IEC SRD 62913-1.

The document for each domain is composed as follows.

– Purpose and scope.

– Business analysis: to address the 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 2-4: Electric transportation related domain

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 the electric transportation domain, 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 "Use 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 terms 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 electric transportation in a smart grid environment when relevant. Table 1 highlights the domains and business Use Cases described in this document.

Table 1 – Content of IEC SRD 62913-2-4:2019

Domain	Content	Scope
Electric transportation	Described with 6 business Use Cases and 1 system Use Case	EV Charging Smart charging and bidirectional power transfer Vehicle to grid

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61851-1:2017, *Electric vehicle conductive charging system – Part 1: General requirements*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.