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BSI Standards Publication

Use case methodology

Part 1: Concept and processes in standardization

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Part 1: Concept and processes in standardization

FOREWORD

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IEC TR 62559-1, which is a Technical Report, has been prepared by IEC systems committee Smart Energy. This first edition, together with the other parts of the IEC TR 62559 series as described in the Introduction, cancels and replaces IEC PAS 62559 published in 2008. This edition constitutes a technical revision.

The text of this document is based on the following documents:

Enquiry draft	Report on voting
SyCSmartEnergy/56/DTR	SyCSmartEnergy/60/RVDTR

Full information on the voting for the approval of this Technical Report 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 62559 series, published under the general title *Use case methodology*, 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- withdrawn,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.

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INTRODUCTION

Complex systems of systems such as Smart Grids, Smart Cities, Smart homes/buildings, Active Assisted Living (AAL) systems, etc. call for cooperation between experts from several different domains (home automation, health, energy, telematics, IT, etc.). In the specificiation and design of such systems, standards play an essential role to obtain interoperable, safe, secure and cost effective solutions. Thus, a common cooperation platform, including a collaboration framework (terminology, quality guidelines, workflows, etc.), for involved stakeholders is needed both in project development as well as in standardization work.

The work on the IEC 62559 series used IEC PAS 62559:2008 as a starting point. IEC PAS 62559 defined a methodology for power system domain experts to determine and describe their user requirements for automation systems, based on their utility business needs. Since its publication in January 2008, the IEC PAS 62559 use case methodology has been increasingly used within standardization and the need for a framework was recognized, e.g. for IEC experts to provide use cases in a consistent manner. The IEC SMB SG3 recommendation 7, approved by the Standardization Management Board (SMB) at its February 2010 meeting (SMB/4204/DL, Decision 137/10) requesting the urgent delivery of a generic use case repository for all Smart Grid applications introduced a need to transform IEC PAS 62559 to an IEC 62559 standard to support the development of an IEC use case repository and to provide support for the use case methodolgy in general.

IEC PAS 62559:2008, as well as experiences from the many activities which have already used it, provide central input to a full IEC 62559 standard series. This series will among other be the basis for a common use case management repository in order to gather use cases within IEC on a common collaborative platform and to organize a harmonization of use cases in order to develop and provide broadly accepted generic use cases as basis for the further standardization work. The new IEC 62559 series of standards is intended to support the standardization bodies needs to create and manage a common use case repository (Parts 1 to 3). In contrast to the original scope of IEC PAS 62559:2008, the IEC 62559 series of standards intends to be widely applicable for the development of different kinds of technical systems also outside the Smart Grid domain. But, as the development of the series was based on IEC PAS 62559, most examples come so far from the electrical energy supply domain of Smart Grids.

Figure 1 provides an overview of the intended first parts of the IEC 62559 series mainly describing the relation between Part 2 (the use case template), Part 3 (the XML import/export format) and the common use case repository.

– Part 1: Concept and processes in standardization

  IEC 62559-1 (this document) provides the basis for a common use case management repository in order to gather use cases within IEC on a common collaborative platform and to organize a harmonization of use cases in order to provide broadly accepted generic use cases as basis for the further standardization work. It describes processes and provides basics for the use case approach.

– Part 2: Definition of the templates for use cases, actor list and requirements list

  IEC 62559-2 defines the structure of a use case template, an actor list and a list for requirements. The document is mainly based on IEC PAS 62559:2008.

– Part 3: Definition of use case template artefacts into an XML serialized format

  Based on IEC 62559-2 template, IEC 62559-3 defines the required core concepts and their serialization into XML syntactic format of a use case template, an actor list and list for detailed requirements. The XML format is used to transfer the content of the template to other engineering systems (e.g. based on UML). It is intended to develop a UML profile definition based on this part in future.

– Part 4: Best practices in use case development for IEC processes and company projects

  IEC 62559-4 maintains the application of the use case methodology in IEC PAS 62559:2008 relating to company projects. Part 4 gathers recommendations

around the application of the use case approach for project specific developments in a broader sense, whereas Parts 1 to 3 concentrate on the application within standardization, the use case template and the management of an IEC use case repository.

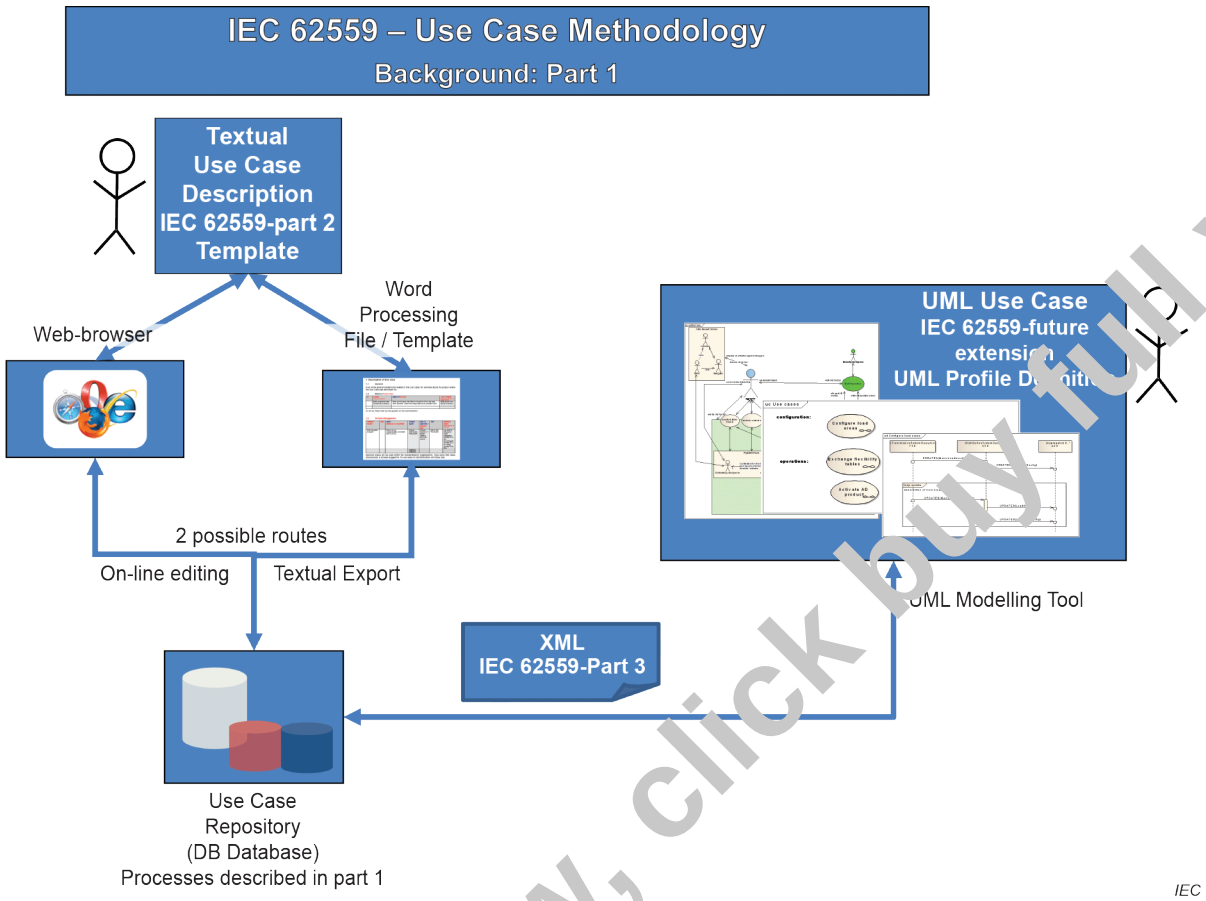

Figure 1 – IEC 62559 standard series

USE CASE METHODOLOGY –

Part 1: Concept and processes in standardization

1 Scope

This part of IEC 62559, which is a Technical Report, is the basis for a common use case repository, used to gather use cases within IEC on a common collaborative platform. The repository is used to organize and harmonize use cases in order to provide broadly accepted generic use cases as basis for the further standardization work.

This document gives an overview about the individual parts of the IEC 62559 series, provides the background/basics for the use case approach defined therein (like terms or use case types), and introduces processes for collaborative use case collection within IEC.

Operational documents like user manuals for software tools like the use case repository are not described in detail as they will be available online and might as well be frequently updated.

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.

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
actor
entity that communicates and interacts

Note 1 to entry: These actors can include people, software applications, systems, databases, and even the power system itself.

[SOURCE: IEC 62559-2:2015, 3.2]

3.2
role
role played by an actor in interaction with the system under discussion

Note 1 to entry: Alternative: A role represents the external intended behaviour of a party. A party cannot share a role.