

STN	Metodika prípadu použitia Časť 3: Definícia artefaktov šablóny prípadu použitia v serializovanom formáte XML	STN EN IEC 62559-3 33 0105
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Use case methodology - Part 3: Definition of use case template artefacts into an XML serialized format

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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**Use case methodology - Part 3: Definition of use case template
artefacts into an XML serialized format
(IEC 62559-3:2017)**

Méthodologie des cas d'utilisation - Partie 3: Définition des
artefacts de formulaire type de modèle de cas d'utilisation
au format sérialisé XML
(IEC 62559-3:2017)

Anwendungsfallmethodik - Teil 3: Definition von Artefakten
der Anwendungsfallvorlage in einem in XML-serialisierten
Format
(IEC 62559-3:2017)

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EN IEC 62559-3:2018 (E)**European foreword**

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IEC 61968-100	NOTE	Harmonized as EN 61968-100.
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(normative)**Normative references to international publications
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IEC 62559-3

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INTERNATIONAL STANDARD



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

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

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CONTENTS

FOREWORD.....	9
INTRODUCTION.....	11
1 Scope.....	13
2 Normative references	14
3 Terms and definitions	14
4 Methodological framework for developing this standard	15
4.1 Model-based approach for developing the data exchange format	15
4.2 Example for the model-based process in the context of IEC 62559	17
4.3 Development of specific data exchange profiles.....	20
5 Application of the methodological framework for defining a set of key syntactic exchange formats (use cases, actors, requirements)	20
6 Models' detailed content (automatic generation from UML models).....	21
6.1 UML use case core concepts (UML Information Model).....	21
6.1.1 General	21
6.1.2 Model package UseCaseCoreConcepts	21
6.2 Use case library exchange format	47
6.2.1 UML use case library exchange model (UML Contextual Model)	47
6.2.2 Use case library XML syntactic format	75
6.3 Actor library exchange Format	93
6.3.1 UML actor library exchange model (UML Contextual Model)	93
6.3.2 Actor library XML syntactic format	96
6.4 Requirement library exchange Format.....	98
6.4.1 UML requirement library exchange model (UML Contextual Model)	98
6.4.2 Requirement library XML syntactic format.....	101
Bibliography.....	103
Figure 1 – IEC 62559 standard series	11
Figure 2 – A common XML format for importing/exporting use case information between a variety of modelling software and repositories.....	13
Figure 3 – Model-based development framework for the definition of the IEC 62559-3 standard XML-based data exchange format	16
Figure 4 – UML Information Model for the Scenario-Actor relationship example	17
Figure 5 – UML Contextual Model based on the Scenario-Actor relationship example	18
Figure 6 – XML Schema corresponding to the Scenario-Actor relationship example	19
Figure 7 – Producing key XML exchange formats based on a unique IEC 62559 UML Information Model.....	21
Figure 8 – Class diagram UseCaseCoreConcepts::UseCaseCore_Libraries	22
Figure 9 – Class diagram UseCaseCoreConcepts::UseCaseCore_ActorLibrary.....	22
Figure 10 – Class diagram UseCaseCoreConcepts::UseCaseCore_UseCaseLibrary.....	23
Figure 11 – Class diagram UseCaseCoreConcepts::UseCaseCore_DetailedActivities	23
Figure 12 – Class diagram UseCaseCoreConcepts::UseCaseCore_AreaLibrary	24
Figure 13 – Class diagram UseCaseCoreConcepts::UseCaseCore_BusinessCaseLibrary	24
Figure 14 – Class diagram UseCaseCoreConcepts::UseCaseCore_BusinessObjectLibrary	25

Figure 15 – Class diagram UseCaseCoreConcepts::UseCaseCore_CommonTermLibrary	25
Figure 16 – Class diagram UseCaseCoreConcepts::UseCaseCore_RequirementLibrary	25
Figure 17 – Class diagram Primitives::Primitives	46
Figure 18 – Package diagram UseCase_ExchangeModel::ContextualModel_Dependency	48
Figure 19 – Class diagram UseCase_ExchangeModel::UseCase_Repository	49
Figure 20 – Class diagram UseCase_ExchangeModel::UseCase_ShortDescription	50
Figure 21 – Class diagram UseCase_ExchangeModel::UseCase_DetailedActivities	51
Figure 22 – Class diagram UseCase_ExchangeModel::UseCase_CompleteDescription	52
Figure 23 – Class diagram ActorLibrary_ExchangeModel::ActorLibrary	93
Figure 24 – Package diagram ActorLibrary_ExchangeModel::ActorLibrary	94
Figure 25 – Class diagram RequirementLibrary_ExchangeModel::RequirementLibrary	98
Figure 26 – Package diagram RequirementLibrary_ExchangeModel::RequirementLibrary	99
Table 1 – Attributes of UseCaseCoreConcepts::Activity	26
Table 2 – Association ends of UseCaseCoreConcepts::Activity with other classes	27
Table 3 – Attributes of UseCaseCoreConcepts::Actor	27
Table 4 – Association ends of UseCaseCoreConcepts::Actor with other classes	28
Table 5 – Attributes of UseCaseCoreConcepts::ActorGrouping	28
Table 6 – Association ends of UseCaseCoreConcepts::ActorGrouping with other classes	28
Table 7 – Attributes of UseCaseCoreConcepts::ActorLibrary	29
Table 8 – Association ends of UseCaseCoreConcepts::ActorLibrary with other classes	29
Table 9 – Attributes of UseCaseCoreConcepts::Area	29
Table 10 – Association ends of UseCaseCoreConcepts::Area with other classes	29
Table 11 – Attributes of UseCaseCoreConcepts::AreaLibrary	30
Table 12 – Association ends of UseCaseCoreConcepts::AreaLibrary with other classes	30
Table 13 – Attributes of UseCaseCoreConcepts::Assumption	30
Table 14 – Association ends of UseCaseCoreConcepts::Assumption with other classes	30
Table 15 – Attributes of UseCaseCoreConcepts::Author	31
Table 16 – Association ends of UseCaseCoreConcepts::Author with other classes	31
Table 17 – Attributes of UseCaseCoreConcepts::BusinessCase	31
Table 18 – Association ends of UseCaseCoreConcepts::BusinessCase with other classes	31
Table 19 – Attributes of UseCaseCoreConcepts::BusinessCaseLibrary	32
Table 20 – Association ends of UseCaseCoreConcepts::BusinessCaseLibrary with other classes	32
Table 21 – Attributes of UseCaseCoreConcepts::BusinessObject	32
Table 22 – Association ends of UseCaseCoreConcepts::BusinessObject with other classes	32
Table 23 – Attributes of UseCaseCoreConcepts::BusinessObjectLibrary	33
Table 24 – Association ends of UseCaseCoreConcepts::BusinessObjectLibrary with other classes	33
Table 25 – Attributes of UseCaseCoreConcepts::CommonTerm	33

Table 26 – Association ends of UseCaseCoreConcepts::CommonTerm with other classes	33
Table 27 – Attributes of UseCaseCoreConcepts::CommonTermLibrary	34
Table 28 – Association ends of UseCaseCoreConcepts::CommonTermLibrary with other classes	34
Table 29 – Attributes of UseCaseCoreConcepts::Condition	34
Table 30 – Association ends of UseCaseCoreConcepts::Condition with other classes	34
Table 31 – Attributes of UseCaseCoreConcepts::CustomInformation	35
Table 32 – Association ends of UseCaseCoreConcepts::CustomInformation with other classes	35
Table 33 – Attributes of UseCaseCoreConcepts::Drawing	35
Table 34 – Association ends of UseCaseCoreConcepts::Drawing with other classes	36
Table 35 – Literals of UseCaseCoreConcepts::DrawingClassification	36
Table 36 – Attributes of UseCaseCoreConcepts::FurtherActorInformation	36
Table 37 – Association ends of UseCaseCoreConcepts::FurtherActorInformation with other classes	37
Table 38 – Attributes of UseCaseCoreConcepts::IdentifiedObject	37
Table 39 – Attributes of UseCaseCoreConcepts::KeyPerformanceIndicator	37
Table 40 – Association ends of UseCaseCoreConcepts::KeyPerformanceIndicator with other classes	37
Table 41 – Attributes of UseCaseCoreConcepts::Narrative	38
Table 42 – Association ends of UseCaseCoreConcepts::Narrative with other classes	38
Table 43 – Attributes of UseCaseCoreConcepts::Objective	38
Table 44 – Association ends of UseCaseCoreConcepts::Objective with other classes	39
Table 45 – Attributes of UseCaseCoreConcepts::Reference	39
Table 46 – Association ends of UseCaseCoreConcepts::Reference with other classes	39
Table 47 – Attributes of UseCaseCoreConcepts::Remark	40
Table 48 – Association ends of UseCaseCoreConcepts::Remark with other classes	40
Table 49 – Attributes of UseCaseCoreConcepts::Requirement	40
Table 50 – Association ends of UseCaseCoreConcepts::Requirement with other classes	40
Table 51 – Attributes of UseCaseCoreConcepts::RequirementCategory	41
Table 52 – Association ends of UseCaseCoreConcepts::RequirementCategory with other classes	41
Table 53 – Attributes of UseCaseCoreConcepts::RequirementLibrary	41
Table 54 – Association ends of UseCaseCoreConcepts::RequirementLibrary with other classes	41
Table 55 – Attributes of UseCaseCoreConcepts::Scenario	42
Table 56 – Association ends of UseCaseCoreConcepts::Scenario with other classes	42
Table 57 – Attributes of UseCaseCoreConcepts::TriggeringEvent	42
Table 58 – Association ends of UseCaseCoreConcepts::TriggeringEvent with other classes	42
Table 59 – Attributes of UseCaseCoreConcepts::UseCase	43
Table 60 – Association ends of UseCaseCoreConcepts::UseCase with other classes	44
Table 61 – Attributes of UseCaseCoreConcepts::UseCaseLibrary	44

Table 62 – Association ends of UseCaseCoreConcepts::UseCaseLibrary with other classes	45
Table 63 – Attributes of UseCaseCoreConcepts::UseCaseRepository	45
Table 64 – Association ends of UseCaseCoreConcepts::UseCaseRepository with other classes	45
Table 65 – Attributes of UseCaseCoreConcepts::Version	46
Table 66 – Association ends of UseCaseCoreConcepts::Version with other classes	46
Table 67 – Attributes of UseCase_ExchangeModel::Activity	53
Table 68 – Association ends of UseCase_ExchangeModel::Activity with other classes	54
Table 69 – Attributes of UseCase_ExchangeModel::Actor	54
Table 70 – Association ends of UseCase_ExchangeModel::Actor with other classes	54
Table 71 – Attributes of UseCase_ExchangeModel::ActorGrouping	55
Table 72 – Association ends of UseCase_ExchangeModel::ActorGrouping with other classes	55
Table 73 – Attributes of UseCase_ExchangeModel::ActorLibrary	55
Table 74 – Association ends of UseCase_ExchangeModel::ActorLibrary with other classes	55
Table 75 – Attributes of UseCase_ExchangeModel::Area	56
Table 76 – Association ends of UseCase_ExchangeModel::Area with other classes	56
Table 77 – Attributes of UseCase_ExchangeModel::AreaLibrary	56
Table 78 – Association ends of UseCase_ExchangeModel::AreaLibrary with other classes	56
Table 79 – Attributes of UseCase_ExchangeModel::Assumption	56
Table 80 – Association ends of UseCase_ExchangeModel::Assumption with other classes	57
Table 81 – Attributes of UseCase_ExchangeModel::Author	57
Table 82 – Association ends of UseCase_ExchangeModel::Author with other classes	57
Table 83 – Attributes of UseCase_ExchangeModel::BusinessCase	57
Table 84 – Association ends of UseCase_ExchangeModel::BusinessCase with other classes	58
Table 85 – Attributes of UseCase_ExchangeModel::BusinessCaseLibrary	58
Table 86 – Association ends of UseCase_ExchangeModel::BusinessCaseLibrary with other classes	58
Table 87 – Attributes of UseCase_ExchangeModel::BusinessObject	58
Table 88 – Association ends of UseCase_ExchangeModel::BusinessObject with other classes	59
Table 89 – Attributes of UseCase_ExchangeModel::BusinessObjectLibrary	59
Table 90 – Association ends of UseCase_ExchangeModel::BusinessObjectLibrary with other classes	59
Table 91 – Attributes of UseCase_ExchangeModel::CommonTerm	59
Table 92 – Association ends of UseCase_ExchangeModel::CommonTerm with other classes	60
Table 93 – Attributes of UseCase_ExchangeModel::CommonTermLibrary	60
Table 94 – Association ends of UseCase_ExchangeModel::CommonTermLibrary with other classes	60
Table 95 – Attributes of UseCase_ExchangeModel::Condition	60

Table 96 – Association ends of UseCase_ExchangeModel::Condition with other classes	60
Table 97 – Attributes of UseCase_ExchangeModel::CustomInformation	61
Table 98 – Association ends of UseCase_ExchangeModel::CustomInformation with other classes	61
Table 99 – Attributes of UseCase_ExchangeModel::Drawing	61
Table 100 – Association ends of UseCase_ExchangeModel::Drawing with other classes	62
Table 101 – Literals of UseCase_ExchangeModel::DrawingClassification	62
Table 102 – Attributes of UseCase_ExchangeModel::KeyPerformanceIndicator	62
Table 103 – Association ends of UseCase_ExchangeModel::KeyPerformanceIndicator with other classes	63
Table 104 – Attributes of UseCase_ExchangeModel::Narrative	63
Table 105 – Association ends of UseCase_ExchangeModel::Narrative with other classes	63
Table 106 – Attributes of UseCase_ExchangeModel::Objective	64
Table 107 – Association ends of UseCase_ExchangeModel::Objective with other classes	64
Table 108 – Attributes of UseCase_ExchangeModel::Ref_Actor	64
Table 109 – Association ends of UseCase_ExchangeModel::Ref_Actor with other classes	64
Table 110 – Attributes of UseCase_ExchangeModel::Ref_Area	65
Table 111 – Association ends of UseCase_ExchangeModel::Ref_Area with other classes	65
Table 112 – Attributes of UseCase_ExchangeModel::Ref_BusinessCase	65
Table 113 – Association ends of UseCase_ExchangeModel::Ref_BusinessCase with other classes	65
Table 114 – Attributes of UseCase_ExchangeModel::Ref_BusinessObject	65
Table 115 – Association ends of UseCase_ExchangeModel::Ref_BusinessObject with other classes	66
Table 116 – Attributes of UseCase_ExchangeModel::Ref_CommonTerm	66
Table 117 – Association ends of UseCase_ExchangeModel::Ref_CommonTerm with other classes	66
Table 118 – Attributes of UseCase_ExchangeModel::Ref_Objective	66
Table 119 – Association ends of UseCase_ExchangeModel::Ref_Objective with other classes	66
Table 120 – Attributes of UseCase_ExchangeModel::Ref_Requirement	67
Table 121 – Association ends of UseCase_ExchangeModel::Ref_Requirement with other classes	67
Table 122 – Attributes of UseCase_ExchangeModel::Ref_UseCase	67
Table 123 – Association ends of UseCase_ExchangeModel::Ref_UseCase with other classes	67
Table 124 – Attributes of UseCase_ExchangeModel::Reference	68
Table 125 – Association ends of UseCase_ExchangeModel::Reference with other classes	68
Table 126 – Attributes of UseCase_ExchangeModel::Remark	68
Table 127 – Association ends of UseCase_ExchangeModel::Remark with other classes	68
Table 128 – Attributes of UseCase_ExchangeModel::Requirement	69

Table 129 – Association ends of UseCase_ExchangeModel::Requirement with other classes	69
Table 130 – Attributes of UseCase_ExchangeModel::RequirementCategory	69
Table 131 – Association ends of UseCase_ExchangeModel::RequirementCategory with other classes	69
Table 132 – Attributes of UseCase_ExchangeModel::RequirementLibrary	70
Table 133 – Association ends of UseCase_ExchangeModel::RequirementLibrary with other classes	70
Table 134 – Attributes of UseCase_ExchangeModel::Resource_String	70
Table 135 – Literals of UseCase_ExchangeModel::ResourceType	70
Table 136 – Attributes of UseCase_ExchangeModel::Scenario	70
Table 137 – Association ends of UseCase_ExchangeModel::Scenario with other classes	71
Table 138 – Attributes of UseCase_ExchangeModel::TriggeringEvent	71
Table 139 – Association ends of UseCase_ExchangeModel::TriggeringEvent with other classes	71
Table 140 – Attributes of UseCase_ExchangeModel::UseCase	72
Table 141 – Association ends of UseCase_ExchangeModel::UseCase with other classes	72
Table 142 – Attributes of UseCase_ExchangeModel::UseCaseLibrary	73
Table 143 – Association ends of UseCase_ExchangeModel::UseCaseLibrary with other classes	73
Table 144 – Attributes of UseCase_ExchangeModel::UseCaseRepository	73
Table 145 – Association ends of UseCase_ExchangeModel::UseCaseRepository with other classes	74
Table 146 – Attributes of UseCase_ExchangeModel::Version	74
Table 147 – Association ends of UseCase_ExchangeModel::Version with other classes	74
Table 148 – Attributes of UseCase_ExchangeModel::FurtherActorInformation	75
Table 149 – Association ends of UseCase_ExchangeModel::FurtherActorInformation with other classes	75
Table 150 – Use case library XSD	75
Table 151 – Attributes of ActorLibrary_ExchangeModel::Actor	95
Table 152 – Association ends of ActorLibrary_ExchangeModel::Actor with other classes	95
Table 153 – Attributes of ActorLibrary_ExchangeModel::ActorLibrary	95
Table 154 – Association ends of ActorLibrary_ExchangeModel::ActorLibrary with other classes	95
Table 155 – Attributes of ActorLibrary_ExchangeModel::Ref_Actor	96
Table 156 – Association ends of ActorLibrary_ExchangeModel::Ref_Actor with other classes	96
Table 157 – Association ends of ActorLibrary_ExchangeModel:: UseCaseRepository with other classes	96
Table 158 – Actor library XSD	96
Table 159 – Attributes of RequirementLibrary_ExchangeModel::RequirementLibrary	99
Table 160 – Association ends of RequirementLibrary_ExchangeModel::RequirementLibrary with other classes	100
Table 161 – Attributes of RequirementLibrary_ExchangeModel::RequirementCategory	100

Table 162 – Association ends of RequirementLibrary_ExchangeModel::RequirementCategory with other classes	100
Table 163 – Attributes of RequirementLibrary_ExchangeModel::Ref_RequirementCategory	100
Table 164 – Association ends of RequirementLibrary_ExchangeModel::Ref_RequirementCategory with other classes	101
Table 165 – Attributes of RequirementLibrary_ExchangeModel::Requirement	101
Table 166 – Association ends of RequirementLibrary_ExchangeModel::Requirement with other classes	101
Table 167 – Requirement library XSD	101

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USE CASE METHODOLOGY –

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

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SyCSmartEnergy/28/CDV	SyCSmartEnergy/48/RVC

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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.

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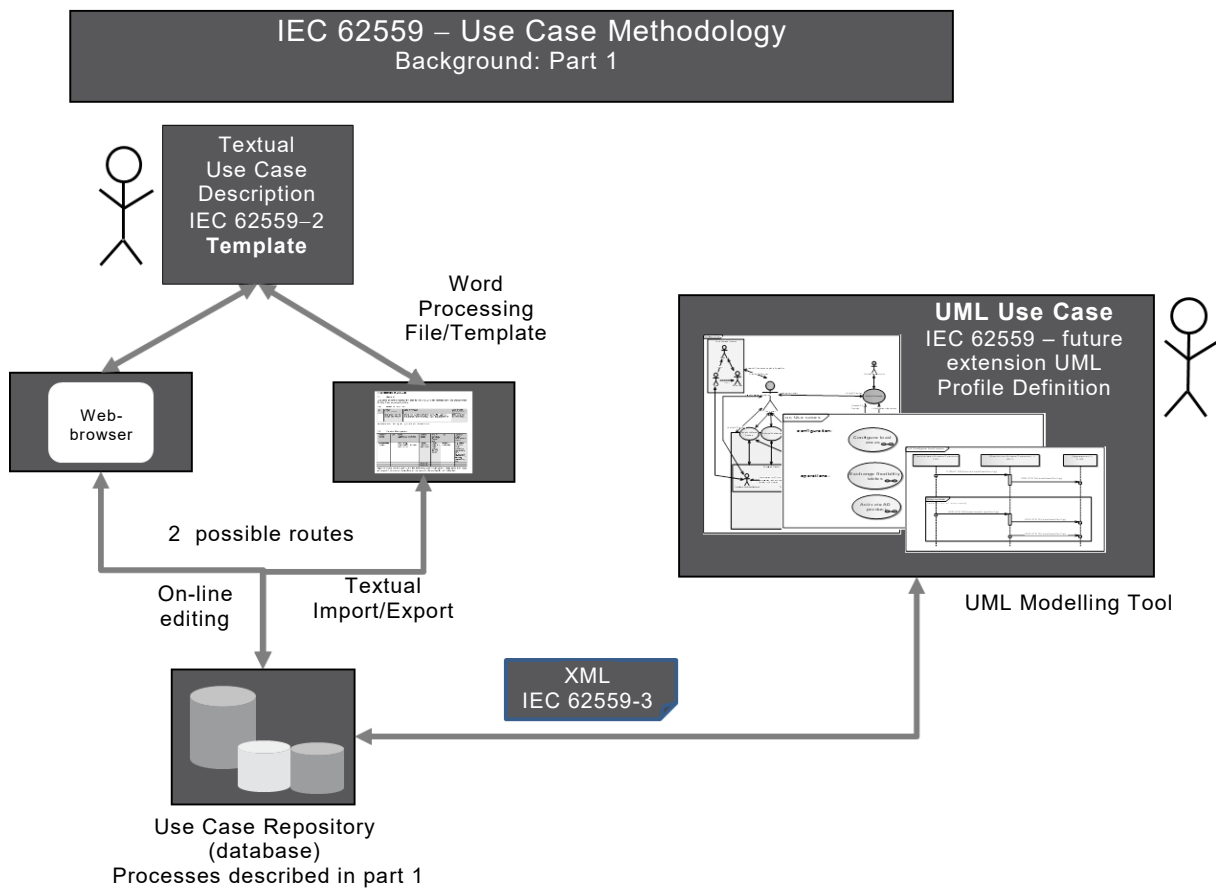
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INTRODUCTION

For complex systems, the use case methodology supports a common understanding of functionalities, Actors and processes across different technical committees or even different organizations. Developed as software engineering tool, the methodology can be used to support the development of standards as it facilitates the analysis of requirements in relation to new or existing standards. Further arguments for the use case methodology and background information are available in IEC 62559-1.

Figure 1 provides an overview of the intended first parts of the IEC 62559 series, mainly describing the relation between IEC 62559-2 and IEC 62559-3.



IEC

Figure 1 – IEC 62559 standard series

IEC 62559-1 – Concept and processes in standardization

IEC 62559-1 will be the basis for a common use case repository in order to gather use cases within IEC on a common collaborative platform. This repository will also be used to organize a harmonization of use cases in order to provide broadly accepted generic use cases as a basis for further standardization work. It describes processes and provides basics for the use case methodology like terms or use case types.

IEC 62559-2 – 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 and shall be read together with IEC 62559-1.

IEC 62559-3 – Definition of use case template artefacts into an XML serialized format

Based on IEC 62559-2, this document defines the required core concepts and their serialization into an XML format of a use case template, an Actor list and a list for detailed requirements. The XML format is used to transfer the content of the template to other engineering systems (e.g. UML modelling tools). These documents are developed using the energy system and Smart Grids as examples, but they are general enough to be transferred to other domains and systems. It is intended to develop a UML profile definition based on this part in the future.

The IEC 62559 series is needed to fulfil the SG3 decision 7 made by the 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. Nevertheless, the use case methodology described in this document is intended for a broader application within standardization exceeding Smart Grid systems.

More and more complex systems such as Smart Grids or Smart Cities are raising the question of managing system level requirements, which have to be fed by many domains of expertise (in standardization related to different Technical Committees (TCs)), and which have to be broken down further and shared by many TCs in charge of specifying standards to support these system level functions.

One way to handle this transversality efficiently is to set some common methods and terms. The use case methodology is the current state of the art and supports further engineering activities.

The use case methodology offers a unique way for sharing ideas and requirements of new use cases or business cases between many experts/TCs with different backgrounds: for example, domain experts with knowledge about energy systems or business processes on one hand and system-/IT-experts defining exchanged information and communication on the other hand. In the requirement development process, domain experts provide general ideas and functional requirements. The main goal is for system experts to detail down these use cases to a level where they can be used to specify interfaces, dedicated functionality, data and service model exchange. However, safety- or EMC-experts (as examples) may also make use of the described use cases, their terminology and identified requirements.

However the starting point is to set up a framework for consistency within IEC, helping IEC members to provide use cases in a consistent manner – IEC 62559 serves as a basis for use case repositories in order to gather, administrate, maintain, and evaluate use cases.

Within IEC, a use case repository serves as common collaborative platform for use case elaboration and to organize a harmonization of use cases in order to provide broadly accepted generic use cases as a basis for further standardization work.

But the use case template defined in this document may serve not only for the development of standards, but also – as was the original purpose of IEC PAS 62559:2008 – as a helpful means for the realization of projects within the area of complex systems. Also other applications, which need the benefits of a structured requirements development and formalized description of functionality, may make use of the suggested template.

The use case methodology is seen as a process which starts with the definition of business ideas, goals and requirements, detailing these in use case descriptions. This information can be used as a basis to identify/link reference architectures describing the types of components used, and going further down to an analysis for the further standardization process.

Further developments regarding the use case template are expected. These developments are mainly related to information, which is required in the use case description for further analysis, and which can be mapped to other information (e.g. to a reference architecture, IT security methods, standards and data models). Partly this is considered in the suggested template of IEC 62559-2. Further relations will be described separately as they are still under development and they can be considered for the further development of the IEC use case repository.

USE CASE METHODOLOGY –

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

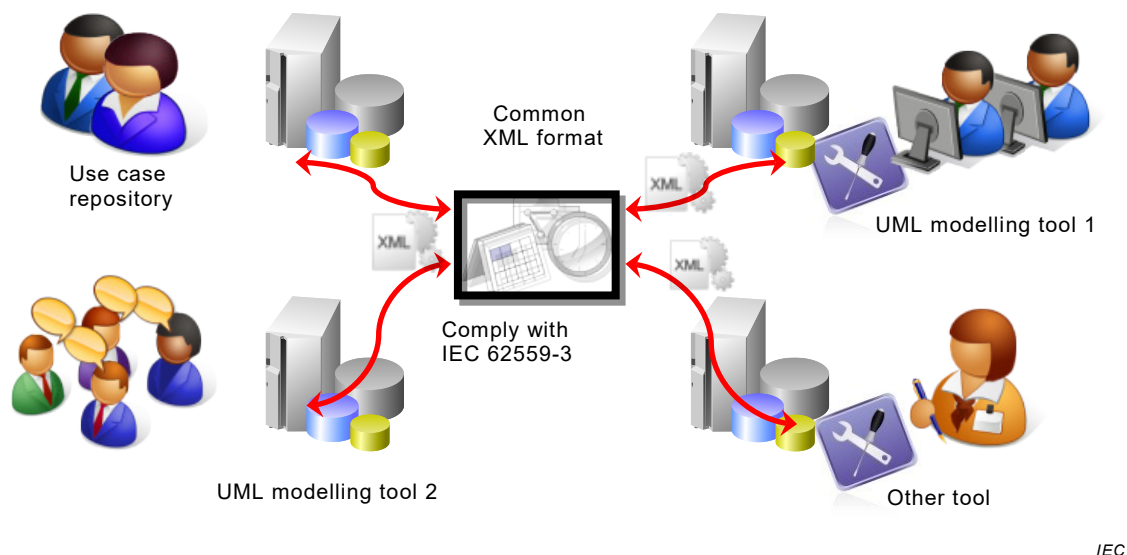
1 Scope

In order to exchange use cases based on the template which is defined in IEC 62559-2, this part of IEC 62559 establishes the interfaces between the different use case repositories and/or UML engineering software tools.

Therefore, this document 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.

As shown in Figure 2, the modelling approach is leveraging the use of UML in order to graphically represent the data contained in a use case based on the IEC 62559 template. Therefore the textual format of the use case template may be in the use case development process just a starting point for business experts or an easy way to modify use case data for non UML experts. As a consequence, it is important for the IEC 62559 series to provide a reliable way for converting this textual format into UML format and reciprocally. As soon as a use case repository is maintained based on the IEC 62559 series, another related need is to be able to import/export between different UML tools and different use case repositories the use case related information based on a tool independent format.

The main purpose of this document is to propose an independent format for transferring the use case information between modelling software. In order to satisfy this goal, the syntactic XML format is chosen to serialize the use case data. This document defines in detail the core concepts of the template into UML and their transformations into XML using the XSD standard.



IEC

**Figure 2 – A common XML format for importing/exporting use case information
between a variety of modelling software and repositories**

This document, as shown in Figure 2, supports the interoperability between modelling software used by different companies over the world.

Once this level of interoperability is achieved, IEC 62559 can provide a reliable mechanism to interpret those XML data in order to represent graphically UML use cases. This need will be covered as well in a future part of IEC 62559 (to be defined).

This document focuses on a methodological framework which is also used by IEC TC 57 standards and which is summarized in Clause 4.

In order to exchange use cases based on the template which is defined in IEC 62559-2, this document establishes the interfaces between the different use case repositories and/or UML tools.

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 62559-2, *Use case methodology – Part 2: Definition of the templates for use cases, actor list and requirements list*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN