SLOVENSKI STANDARD
SIST EN 61968-8:2016

01-julij-2016

Združevanje aplikacij v elektropodjetjih - Sistemski vmesniki za upravljanje distribucije - 8. del: Standard vmesnika za podporo končnim uporabnikom

Application integration at electric utilities - System interfaces for distribution management - Part 8: Interface standard for customer support

Ta slovenski standard je istoveten z: **EN 61968-8:2016**

ICS:

29.240.30	Krmilna oprema za elektroenergetske sisteme	Control equipment for electric power systems
35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment

SIST EN 61968-8:2016 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61968-8

May 2016

ICS 33.200

English Version

Application integration at electric utilities - System interfaces for distribution management - Part 8: Interfaces for customer operations (IEC 61968-8:2015)

Application integration at electric utilities - System interfaces for distribution management - Part 8 : interface standard for customer support
(IEC 61968-8:2015)

Integration von Anwendungen in Anlagen der Elektrizitätsversorgung - Systemschnittstellen für Netzführung - Teil 8: Schnittstellen Normen für den Kundendienst
(IEC 61968-8:2015)

This European Standard was approved by CENELEC on 2015-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61968-8:2016 E

European foreword

The text of document 57/1548/FDIS, future edition 1 of IEC 61968-8, prepared by IEC/TC 57, "Power systems management and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61968-8:2016.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-11-13
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-05-13

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61968-8:2015 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050	-	International Electrotechnical Vocabulary (IEV)	-	-
IEC 61968-1	-	Application integration at electric utilities - System interfaces for distribution management -- Part 1: Interface architecture and general requirements	EN 61968-1	-
IEC 61968-6	-	Application integration at electric utilities - System interfaces for distribution management - Part 6: Interfaces for maintenance and construction	-	-
IEC 61968-11	-	Application integration at electric utilities - System interfaces for distribution management -- Part 11: Common information model (CIM) extensions for distribution	EN 61968-11	-
IEC 61968-100	-	Application integration at electric utilities - System interfaces for distribution management -- Part 100: Implementation profiles	EN 61968-100	-
IEC 61970-301	-		EN 61970-301	-
IEC/TS 61968-2	-	Application integration at electric utilities - System interfaces for distribution management -- Part 2: Glossary	-	-

IEC 61968-8

Edition 1.0 2015-05

INTERNATIONAL STANDARD

colour inside

Application integration at electric utilities – System interfaces for distribution management – Part 8: Interfaces for customer operations

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 33.200

ISBN 978-2-8322-2678-0

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

____

APPLICATION INTEGRATION AT ELECTRIC UTILITIES – SYSTEM INTERFACES FOR DISTRIBUTION MANAGEMENT –

Part 8: Interfaces for customer operations

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.

5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61968-8 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

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

FDIS	Report on voting
57/1548/FDIS	57/1573/RVD

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

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

A list of all parts of the IEC 61968 series, under the general title: *Application integration at electric utilities – System interfaces for distribution management*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication 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 purpose of this part of IEC 61968 is to define a standard for the integration of Customer Support (CS), which would include Customer Service, Trouble Management and Point of Sale related components integrated with other systems and business functions within the scope of IEC 61968. The scope of this standard is the exchange of information between a customer support system and other systems within the utility enterprise.

The IEC 61968 series of standards is intended to facilitate *inter-application integration* as opposed to intra-application integration. Intra-application integration is aimed at programs in the same application system, usually communicating with each other using middleware that is embedded in their underlying runtime environment, and tends to be optimised for close, real-time, synchronous connections and interactive request/reply or conversation communication models. IEC 61968, by contrast, is intended to support the inter-application integration of a utility enterprise that needs to connect disparate applications that are already built or new (legacy or purchased applications), each supported by dissimilar runtime environments. Therefore, these interface standards are relevant to loosely coupled applications with more heterogeneity in languages, operating systems, protocols and management tools. This series of standards is intended to support applications that need to exchange data every few seconds, minutes, or hours rather than waiting for a nightly batch run. This series of standards, which are intended to be implemented with middleware services that exchange messages among applications, will complement, not replace utility data warehouses, database gateways, and operational stores.

As used in IEC 61968, a Distribution Management System (DMS) consists of various distributed application components for the utility to manage electrical distribution networks. These capabilities include monitoring and control of equipment for power delivery, management processes to ensure system reliability, voltage management, demand-side management, outage management, work management, automated mapping and facilities management. Standard interfaces are defined for each class of applications identified in the Interface Reference Model (IRM), which is described in IEC 61968-1: *Application integration at electric utilities – System interfaces for distribution management – Interface Architecture and General Requirements*.

This part of IEC 61968 contains the clauses listed in Table 1.

Table 1 – Document overview for IEC 61968-8

Clause	Title	Purpose
1.	Scope	The scope and purpose of the document are described.
2.	Normative references	Documents that contain provisions which, through reference in this text, constitute provisions of this international standard.
3.	Terms, definitions and abbreviations	
4.	Reference and information models	Description of general approach to customer support, reference model, interface reference model, customer support functions and components, message type terms and static information model.
5.	Customer support message types	Message types related to the exchange of information for documents related to customer services.
Annex A	Sample XML schemas for message payloads	To provide XSD information for information use only.

APPLICATION INTEGRATION AT ELECTRIC UTILITIES – SYSTEM INTERFACES FOR DISTRIBUTION MANAGEMENT –

Part 8: Interfaces for customer operations

1 Scope

This part of IEC 61968 specifies the information content of a set of message types that can be used to support many of the business functions related to customer support. Typical uses of the message types include service request, customer agreement, and trouble management.

The purpose of this part of IEC 61968 is to define a standard for the integration of customer support (CS), which would include customer service, trouble management and point of sale related components integrated with other systems and business functions within the scope of IEC 61968. The scope of this standard is the exchange of information between a customer support system and other systems within the utility enterprise.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050, *International Electrotechnical Vocabulary*

IEC 61968-1, *Application integration at electric utilities – System interfaces for distribution management – Part 1: Interface architecture and general recommendations*

IEC TS 61968-2, *Application integration at electric utilities – System interfaces for distribution management – Part 2: Glossary*

IEC 61968-6, *Application integration at electric utilities – System interfaces for distribution management – Part 6: Interfaces for maintenance and construction*[1]

IEC 61968-11, *Application integration at electric utilities – System interfaces for distribution management – Part 11: Common information model (CIM) extensions for distribution*

IEC 61968-100, *Application integration at electric utilities – System interfaces for distribution management – Part 100: Implementation profiles*

IEC 61970-301, *Energy management system application program interface (EMS-API) – Part 301: Common information model (CIM) base*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this standard, the terms and definitions given in IEC 60050-300, IEC 61968-2, IEC 62051 and IEC 62055-31 apply.

Where there is a difference between the definitions in this standard and those contained in other referenced IEC standards, then those defined in IEC 61968-2 shall take precedence over the others listed, and those defined in this document shall take precedence over those defined in IEC 61968-2.

---

[1] To be published.

3.2 Abbreviations

CIM Common information model
CIS Customer information system
CRM Customer relationship management
CSR Customer service representative
ERT Estimated restoration time
IVR Interactive voice response
NO Network operations
OMS Outage management system
POS Point of sale
UML Unified modelling language
WM Work management
XSD XML schema definition

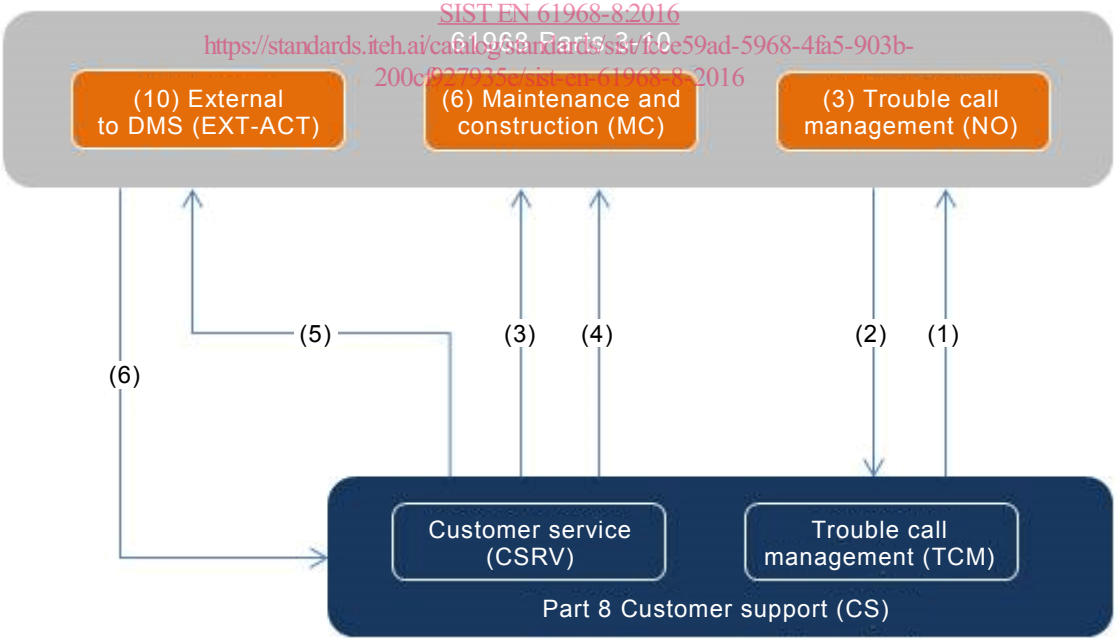
4 Reference and information models

4.1 Reference model

4.1.1 General

The diagram in Figure 1 serves as a reference model and provides examples of the logical components and data flows related to the context of this part of IEC 61968.

Figure 1 describes the information flows between the components defined in this part of IEC 61968 and the components in the reference model defined in IEC 61968-1.



1. Trouble ticket
2. Incident information
3. Service order
4. Work request
5. Customer agreement
6. Service request

Figure 1 – IEC 61968-8 context model

4.1.2 Customer support (CS)

Typical tasks of customer support:

- Customer services may include, but are not limited to, customer enquiries, new service, program enrollment and service or work request updates.
- Trouble call management may include, but are not limited to, trouble calls reported from customers and non-customers, outage notifications and restoration updates.

4.2 Customer support functions and components

Table 2 shows these functions and typical abstract components that are expected to be producers of information for these message types. Typical consumers of the information include, but are not restricted to, the other components as listed in IEC 61968-1.

Table 2 – Business functions and abstract components

Customer support (CS)	Customer service (CSRV)	Service requests
		Construction billing inquiry
		Billing inquiry
		Work status
		Self-service inquiry
		Customer connection
		Turn on, turn off
		Line losses
		Service level agreements
		Customer information analysis
		Customer information management
		Customer relationship management
	Trouble call management (TCM)	Outage calls
		Power quality
		Planned outage notifications
		Media communication
		Performance indices
		Restoration projection/confirmation
		Outage history
	Point of sale (POS)	

4.3 Static information model

4.3.1 General

The information model relevant to customer support consists of classes that provide a template for the attributes for each message.

The classes are defined in detail in IEC 61968-11, *Application integration at electric utilities – System interfaces for distribution management – Part 11: Common Information Model (CIM) Extensions for Distribution* or in IEC 61970-301, *Energy management system application program interfaces (EMS-API) – Part 301: Common information model (CIM) base*.

4.3.2 Classes for customer support

Table 3 lists classes used within message types. Usually all the attributes of these classes are contained within a message type. The descriptions provided describe usage within this part.

Classes described as type "Customer" are defined in the 61968/customer package of the CIM.