



Fastställd 2016-11-17

Utgåva 1 Sida 1 (1+60) Ansvarig kommitté

SEK TK 57

© Copyright SEK. Reproduction in any form without permission is prohibited.

# Integrering av tillämpningar för elförsörjning – Systemgränssnitt för distributionssystemstyrning – Del 8: Gränssnitt för kundhantering

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

Som svensk standard gäller europastandarden EN 61968-8:2016. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61968-8:2016.

# Nationellt förord

Europastandarden EN 61968-8:2016

består av:

- europastandardens ikraftsättningsdokument, utarbetat inom CENELEC
- IEC 61968-8, First edition, 2015 Application integration at electric utilities System interfaces for distribution management - Part 8: Interfaces for customer operations

utarbetad inom International Electrotechnical Commission, IEC.

ICS 33.200.00

### Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

# SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

#### Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

### Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard

Box 1284 164 29 Kista Tel 08-444 14 00 www.elstandard.se

# 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

© 2016 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

# **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: <a href="https://www.cenelec.eu">www.cenelec.eu</a>.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
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	-	-

# CONTENTS

F	DREWORD		4
1	Scope		7
2	Normativ	ve references	7
3	Terms, o	definitions and abbreviations	7
		rms and definitions	
		breviations	
4		ce and information models	
		ference model	
	4.1.1	General	
	4.1.2	Customer support (CS)	
		stomer support functions and components	
		atic information model	
	4.3.1	General	
	4.3.2	Classes for customer support	9
5	Custome	er support message types	10
	5.1 Ge	neral	10
		ouble ticket	
	5.2.1	General	
	5.2.2	Message format	
	5.3 Inc	ident information	
	5.3.1	General	12
	5.3.2	Message format	14
	5.4 Se	rvice request	15
	5.4.1	General	15
	5.4.2	Message format	16
	5.5 Se	rvice order	17
	5.5.1	General	17
	5.6 Wo	ork request	17
	5.6.1	General	17
	5.7 Cu	stomer agreement	18
	5.7.1	General	18
	5.7.2	Message format	20
Αı	nnex A (nor	mative) XML schemas for message payloads	21
Bi	bliography.		58
	•	C 61968-8 context model	
Fi	gure 2 – Ex	cample of trouble ticket exchange between CIS and OMS	11
Fi	gure 3 – Tr	ouble ticket message	12
Fi	gure 4 – Ex	cample of incident information exchange between OMS and CIS	13
Fi	gure 5 – In	cident information message	14
	-	cample of a service request exchange between CIS and WMS	
	_	ervice request message	
	_		
	_	cample of a service order exchange between CIS and WMS	
Ηİ	gure 9 – Ex	cample of a work request exchange between CIS and WMS	18

Figure 10 – Example of a customer exchange between CIS and external or third party systems	
Figure 11 – Customer agreement message	20
Figure A.1 – Trouble ticket XSD	24
Figure A.2 – Incident information XSD	28
Figure A.3 – Customer agreement XSD	35
Figure A.4 – Service request XSD	57
Table 1 – Document overview for IEC 61968-8	6
Table 2 – Business functions and abstract components	9
Table 3 – Customer support classes	10

# 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<sup>1</sup>

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

SEK Svensk Elstandard

<sup>1</sup> To be published.