SLOVENSKI STANDARD
SIST EN 61968-100:2013

01-december-2013

Integracija vrst uporabe pri elektropodjetjih - Sistemski vmesniki za upravljanje distribucije - 100. del: Profili implementacije (IEC 61968-100:2013)

Application integration at electric utilities - System interfaces for distribution management - Part 100: Implementation profiles

Intégration d'applications pour les services électriques - Interfaces système pour la gestion de distribution - Partie 100: Profils de mise en œuvre

Ta slovenski standard je istoveten z: EN 61968-100:2013

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 61968-100:2013 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61968-100

November 2013

ICS 33.200

English version

Application integration at electric utilities - System interfaces for distribution management - Part 100: Implementation profiles

(IEC 61968-100:2013)

Intégration d'applications pour les services électriques - Interfaces système pour la gestion de distribution - Partie 100: Profils de mise en œuvre (CEI 61968-100:2013)

Integration von Anwendungen in Anlagen der Elektrizitätsversorgung - Systemschnittstellen für Netzführung - Teil 100: Implementations-Profile (IEC 61968-100:2013)

This European Standard was approved by CENELEC on 2013-08-30. 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.

CENELEC

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 61968-100:2013 E

Foreword

The text of document 57/1358/FDIS, future edition 1 of IEC 61968-100, 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 61968-100:2013.

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)	2014-05-30
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-08-30

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 61968-100:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61968-9	NOTE	Harmonised as EN 61968-9.
IEC 61968-13	NOTE	Harmonised as EN 61968-13.
IEC 61970-452	NOTE	Harmonised as EN 61970-452.
IEC 61970-453	NOTE	Harmonised as EN 61970-453.
IEC 62361-100	NOTE	Harmonised as EN 62361-100.

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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-300	-	International Electrotechnical Vocabulary - Electrical and electronic measurements and measuring instruments - Part 311: General terms relating to measurements - Part 312: General terms relating to electrical measurements - Part 313: Types of electrical measuring instruments - Part 314: Specific terms according to the type of instrument	-	-
IEC 61968-1	-	Application integration at electric utilities - System interfaces for distribution management - Part 1: Interface architecture and general requirements	EN 61968-1	-
IEC/TS 61968-2	-	Application integration at electric utilities - System interfaces for distribution management - Part 2: Glossary	-	-
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 61970-301	-	Energy management system application program interface (EMS-API) - Part 301: Common information model (CIM) base	EN 61970-301[1)]	-
IEC 61970-552	-	Energy Management System Application Program Interface (EMS-API) - Part 552: CIMXML Model Exchange Format	EN 61970-552[1)]	-
ISO 8601	-	Data elements and interchange formats - Information interchange - Representation of dates and times	-	-

[1)] At draft stage.

IEC 61968-100

Edition 1.0 2013-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Application integration at electric utilities – System interfaces for distribution management – Part 100: Implementation profiles

Intégration d'applications pour les services électriques – Interfaces système pour la gestion de distribution – Partie 100: Profils de mise en oeuvre

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX **XE**

ICS 33.200

ISBN 978-2-8322-1007-9

Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 100: Implementation profiles

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 61968-100 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
57/1358/FDIS	57/1382/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 in the IEC 61968 series, published 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.

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

This part of IEC 61968 defines a set of implementation profiles for IEC 61968 using technologies commonly used for enterprise integration. More specifically, this document describes how message payloads defined by parts 3-9 of IEC 61968 are conveyed using web services and the Java Messaging System. Guidance is also provided with respect to the use of Enterprise service Bus (ESB) technologies. The goal is to provide details that would be sufficient to enable implementations of IEC 61968 to be interoperable. In addition, this document is intended to describe integration patterns and methodologies that can be leveraged using current and future integration technologies.

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, 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.

This standard is based upon the EPRI Technical Report 1018795 and other contributed works.

The IEC 61968 series, taken as a whole, defines interfaces for the major elements of an interface architecture for distribution systems within a utility enterprise. Part 1: Interface Architecture and General Recommendations, identifies and establishes requirements for standard interfaces based on an Interface Reference Model (IRM). Parts 3 through 9 of IEC 61968 define interfaces relevant to each of the major business functions described by the Interface Reference Model.

As described in IEC 61968, there are a variety of distributed application components used by 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, meter reading, meter control and facilities management. This set of standards is limited to the definition of interfaces and is implementation independent. It provides for interoperability among different computer systems, platforms, and programming languages. Methods and technologies used to implement functionality conforming to these interfaces are considered outside of the scope of these standards; only the interface itself is specified in these standards.

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

Part 100: Implementation profiles

1 Scope

This part of IEC 61968 specifies an implementation profile for the application of the other parts of IEC 61968 using common integration technologies, including JMS and web services. This International Standard also provides guidance with respect to the use of Enterprise Service Bus (ESB) technologies. This provides a means to derive interoperable implementations of IEC 61968-3 to IEC 61968-9. At the same time, this International Standard can be leveraged beyond information exchanges defined by IEC 61968, such as for the integration of market systems or general enterprise integration.

Figure 1 attempts to provide an overview of scope, where IEC 61968 compliant messages are conveyed using web services or JMS. Through the use of an ESB integration layer, the initiator of an information exchange could use web services, where the receiver could use JMS, and vice versa. The integration layer also provides support for one to many information exchanges using publish/subscribe integration patterns and key functionality such as delivery guarantees.

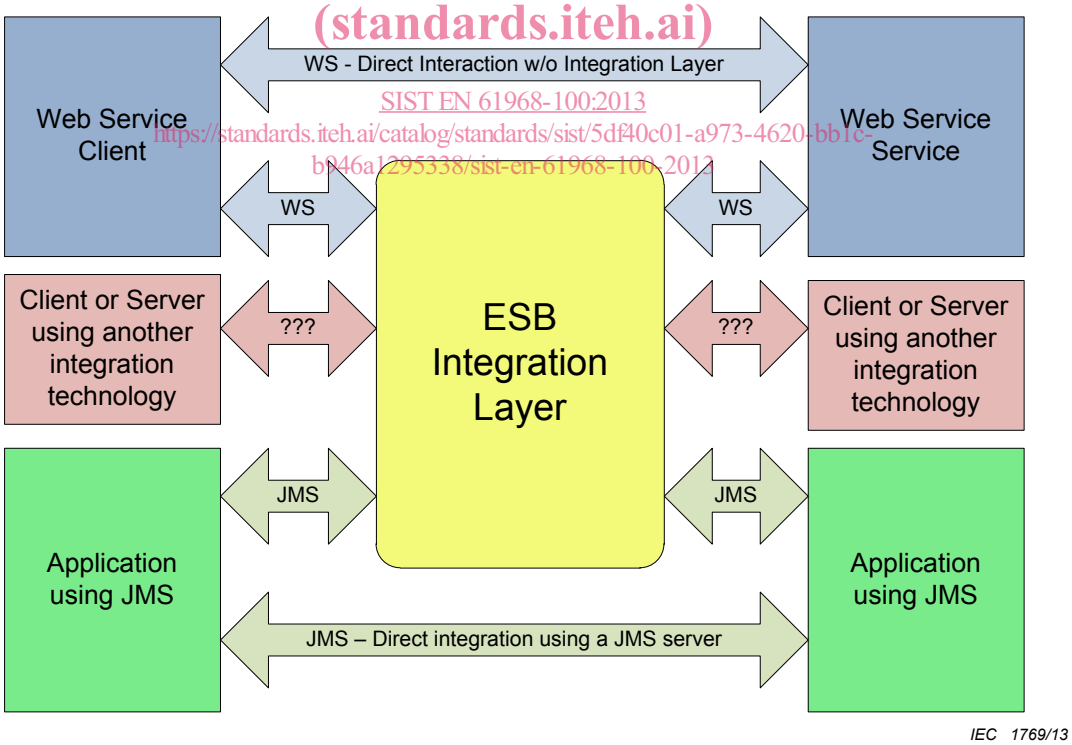

Figure 1 – Overview of Scope

The scope of this document specifically includes the following:

- integration patterns that support IEC 61968 information exchanges
- design of interfaces for use of strongly typed web services
- design of interfaces for use of generically typed web services
- design of interfaces using JMS