

# TECHNICAL REPORT



Application integration at electric utilities – System interfaces for distribution management –  
Part 900: Guidance for implementation of IEC 61968-9

[IEC TR 61968-900:2015](https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015)

<https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015>



**THIS PUBLICATION IS COPYRIGHT PROTECTED**  
**Copyright © 2015 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

**About the IEC**

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

**About IEC publications**

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

**IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)**

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

**Electropedia - [www.electropedia.org](http://www.electropedia.org)**

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

**IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)**

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

**IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)**

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

**IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)**

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

**IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)**

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

INTERNATIONAL STANDARDS (standards) IEC  
IEC TR 61968-200:2011  
https://standards.iec.ch/catalog/standards  
e4726eb13af/iec-tr-61968-200-2011

# TECHNICAL REPORT



---

**Application integration at electric utilities – System interfaces for distribution management –  
Part 900: Guidance for implementation of IEC 61968-9**

[IEC TR 61968-900:2015](#)

<https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015>

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 33.200

ISBN 978-2-8322-2950-7

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

## CONTENTS

FOREWORD.....	8
INTRODUCTION.....	10
1 Scope.....	13
2 Normative references.....	13
3 IEC 61968-100 basics.....	13
3.1 General.....	13
3.2 IEC 61968-100 message exchange patterns.....	14
3.3 IEC 61968-100 message types.....	14
3.3.1 General.....	14
3.3.2 Request messages.....	15
3.3.3 Response messages.....	17
3.3.4 Unsolicited event messages.....	18
3.4 IEC 61968-100 message content.....	19
3.4.1 General.....	19
3.4.2 Verb and noun elements in the message header.....	20
3.4.3 Get requests.....	20
3.4.4 Other requests.....	21
3.4.5 The CorrelationID element.....	21
3.4.6 Other elements in the message header.....	21
3.4.7 The Message.xsd (XSD schema definition file).....	22
4 Request and response messages in detail.....	23
4.1 General.....	23
4.2 Several potential response messages for each request message.....	23
4.3 Response messages contain a status indication.....	24
4.4 Response messages containing data and error notifications.....	24
4.5 Specific error indications in the response messages.....	24
4.6 Implicit indication of success.....	27
4.7 General error indications in the response messages.....	28
4.7.1 General.....	28
4.7.2 Setting the <Reply><Result> element.....	28
4.7.3 Multiple response messages.....	29
4.8 Multiple <Request>, <Reply> and <Payload> elements.....	29
4.9 Implementation-specific messages.....	30
5 The naming of objects.....	30
5.1 General.....	30
5.2 Naming meters.....	30
5.3 EndDeviceGroups, UsagePoints and UsagePointGroups.....	32
5.4 Naming of other objects.....	33
5.5 Provisioning and interrogating a system.....	33
6 Meter read requests and responses.....	33
6.1 General.....	33
6.2 Message exchange patterns.....	34
6.2.1 General.....	34
6.2.2 Request message with a single response message.....	34
6.2.3 Request message with multiple response messages.....	35
6.3 GetMeterReadings request.....	37

6.3.1	General .....	37
6.3.2	Naming of meters.....	39
6.3.3	The ReadingType element.....	39
6.3.4	The ReadingQuality element .....	41
6.3.5	The TimeSchedule element .....	42
6.3.6	Specifying multiple constraints in a request message.....	43
6.3.7	Coincident meter reads .....	46
6.4	On-demand meter reads.....	47
6.4.1	General .....	47
6.4.2	Pinging a meter.....	49
6.5	MeterReadings response.....	49
6.5.1	General .....	49
6.5.2	The <MeterReading><Meter> element .....	51
6.5.3	The <MeterReading><Readings> element.....	52
6.5.4	The <MeterReading><Readings><ReadingQualities> element.....	53
6.5.5	The <MeterReading><Readings><ReadingType> element.....	53
6.5.6	The <MeterReading><Readings><IntervalBlocks> elements.....	53
6.5.7	The EndDeviceType, ReadingQualityType and ReadingType elements.....	53
6.6	Unsolicited meter reads.....	56
6.6.1	General.....	56
6.6.2	Message exchange pattern.....	56
6.6.3	Missing reads .....	58
6.6.4	Unsolicited MeterReads together with EndDeviceEvents .....	59
6.7	More about timestamps and interval data.....	60
6.7.1	General.....	60
6.7.2	Interval data.....	61
6.7.3	The interval block.....	62
6.7.4	Raw data .....	62
7	Meter control requests and responses.....	63
7.1	General.....	63
7.2	Message exchange pattern.....	64
7.3	Create(EndDeviceControls) message .....	65
7.3.1	General .....	65
7.3.2	EndDeviceControls element .....	66
7.4	Reply(EndDeviceControls) message.....	70
7.5	Created(EndDeviceEvents) message.....	71
7.5.1	General .....	71
7.5.2	EndDeviceEvents element.....	71
7.6	Unsolicited EndDeviceEvents Messages.....	74
7.6.1	General .....	74
7.6.2	Message exchange pattern.....	75
7.7	Premises area networks .....	75
7.7.1	General .....	75
7.7.2	Message exchange pattern.....	75
7.7.3	Pairing the Meter and PAN device .....	76
8	Configuration and provisioning.....	76
8.1	General.....	76
8.2	Message exchange pattern.....	77

8.3	Meter configuration .....	78
8.3.1	General .....	78
8.3.2	Create(MeterConfig) message .....	79
8.3.3	Reply(MeterConfig) message, success case .....	81
8.3.4	Reply(MeterConfig) message, failure case .....	81
8.4	Master data linkage .....	81
8.4.1	General .....	81
8.4.2	Create(MasterDataLinkage) message .....	82
8.5	OperationSets .....	83
8.5.1	General .....	83
8.5.2	OperationSet request message .....	84
8.5.3	OperationSet Response Message .....	86
9	Scheduling actions for future execution .....	87
9.1	General .....	87
9.2	Scheduling a meter read .....	87
9.2.1	General .....	87
9.2.2	Message exchange pattern .....	88
9.2.3	MeterReadSchedule element .....	89
9.3	Create(MeterReadSchedule) message .....	92
9.3.1	General .....	92
9.3.2	Reply(MeterReadSchedule) message .....	93
9.4	Cancelling a request .....	94
9.4.1	General .....	94
9.4.2	Cancel(MeterReadSchedule) request .....	94
10	Transporting IEC 61968-9 messages .....	95
10.1	General .....	95
10.2	Transporting over SOAP .....	95
10.2.1	General .....	95
10.2.2	Generic WSDL .....	96
10.2.3	Simple acknowledgement messages .....	96
10.2.4	Example message flow .....	97
10.3	Transporting over JMS .....	98
10.3.1	General .....	98
10.3.2	Explicit acknowledgements .....	99
10.3.3	JMS property details .....	99
10.3.4	Process details .....	99
10.3.5	Object details .....	100
11	Summary of message fields .....	100
11.1	General .....	100
11.2	Meter read operations .....	100
11.2.1	General .....	100
11.2.2	Request message .....	100
11.2.3	Response message .....	102
11.2.4	Unsolicited meter read .....	106
11.3	Meter control operations .....	106
11.3.1	General .....	106
11.3.2	Request message elements .....	106
11.3.3	Initial response message .....	108
11.3.4	Subsequent consequential event messages .....	109

11.3.5	Unsolicited meter event.....	111
11.4	Configuration and provisioning .....	111
11.4.1	General .....	111
11.4.2	Provisioning a meter .....	111
11.4.3	Creation of a ComModule.....	113
11.4.4	ServiceLocation .....	114
11.4.5	ServiceCategoryConfig.....	116
11.4.6	Service supplier .....	116
11.4.7	UsagePoint location .....	118
11.4.8	Usage point .....	120
11.4.9	Customer.....	122
11.4.10	Customer account.....	124
11.4.11	Customer Agreement .....	126
11.4.12	Pricing Structure .....	128
11.4.13	MasterDataLinkage .....	129
11.4.14	OperationSet .....	132
11.4.15	Adding, changing or deleting an object identifier .....	137
Figure 1	– Example message for a simple meter read request .....	16
Figure 2	– Example response message to a simple meter read request.....	17
Figure 3	– Example unsolicited event message .....	18
Figure 4	– RequestMessage definition according to Message.xsd .....	19
Figure 5	– ResponseMessage definition according to Message.xsd.....	19
Figure 6	– EventMessage definition according to Message.xsd .....	20
Figure 7	– Subelements allowed inside a <Header> element.....	23
Figure 8	– Example of a success indication in a Reply element.....	24
Figure 9	– Example of error indications in a Reply element (incomplete) .....	25
Figure 10	– Subelements allowed inside a <Reply> element .....	26
Figure 11	– Subelements allowed inside a <Reply><Error><ID> element.....	27
Figure 12	– Example of overall indication of success in a Reply element.....	28
Figure 13	– Example of error indications in a Reply element (corrected).....	28
Figure 14	– EndDevice definition.....	31
Figure 15	– Example of a Meter Read Request with NameType and NameTypeAuthority .....	32
Figure 16	– Message exchange pattern for a meter read request with a single response message.....	35
Figure 17	– Message exchange pattern for a meter read request with multiple response messages.....	37
Figure 18	– GetMeterReadings definition according to GetMeterReadings.xsd .....	39
Figure 19	– <GetMeterReading><ReadingType> definition .....	41
Figure 20	– <GetMeterReading><ReadingQuality> definition.....	42
Figure 21	– <GetMeterReadings><TimeSchedule> definition.....	43
Figure 22	– Example of a request message for two ReadingType codes over two meters.....	45
Figure 23	– Example of a request message for two meter/ReadingType combinations .....	46
Figure 24	– Message exchange pattern for an on-demand meter read.....	48

Figure 25 – Example of an on-demand meter read request message.....	49
Figure 26 – Example of a response to a meter read request.....	50
Figure 27 – MeterReadings definition according to MeterReadings.xsd .....	51
Figure 28 – <MeterReadings><Meter> definition .....	52
Figure 29 – <MeterReadings><Reading> definition .....	52
Figure 30 – <MeterReading><ReadingQuality> definition .....	53
Figure 31 – <MeterReadings><IntervalBlock> definition .....	54
Figure 32 – Example of a meter read response with named ReadingType and ReadingQuality elements .....	56
Figure 33 – Message exchange pattern for a set of unsolicited meter reads .....	57
Figure 34 – Example of an unsolicited meter read message .....	57
Figure 35 – Example of a missing reading in a published message .....	58
Figure 36 – Example of a known missing reading in a published message.....	59
Figure 37 – Example of a message showing both an event and a reading .....	60
Figure 38 – Reading Timestamps .....	61
Figure 39 – Example use of IntervalBlocks .....	63
Figure 40 – Message exchange pattern for a meter control operation.....	65
Figure 41 – Example of a create(EndDeviceControls) message for one meter .....	66
Figure 42 – Example of a create(EndDeviceControls) message for two meters .....	66
Figure 43 – EndDeviceControls definition.....	67
Figure 44 – EndDeviceControl definition.....	69
Figure 45 – EndDeviceControlType definition.....	70
Figure 46 – Example of a reply(EndDeviceControls) message.....	70
Figure 47 – Example of a created(EndDeviceEvents) message .....	71
Figure 48 – EndDeviceEvents definition .....	71
Figure 49 – EndDeviceEvent definition .....	73
Figure 50 – EndDeviceEventType definition.....	74
Figure 51 – Message exchange pattern for an unsolicited EndDevice event .....	75
Figure 52 – Message exchange pattern for a create(MeterConfig) message .....	78
Figure 53 – MeterConfig definition.....	79
Figure 54 – Example of a create(MeterConfig) message .....	80
Figure 55 – Example of a reply(MeterConfig) message, success case.....	81
Figure 56 – Example of a reply(MeterConfig) message, failure case.....	81
Figure 57 – MasterDataLinkageConfig Relationships .....	82
Figure 58 – Example of a create(MasterDataLinkageConfig) message .....	83
Figure 59 – Example of an execute(OperationSet) message .....	85
Figure 60 – Example of a reply(OperationSet) message, success case .....	86
Figure 61 – Example of a reply(OperationSet) message, failure case .....	87
Figure 62 – Message exchange pattern for scheduling a set of meter reads .....	89
Figure 63 – MeterReadSchedule definition .....	90
Figure 64 – MeterReadSchedule.TimeSchedule definition.....	92
Figure 65 – Example of a meter read schedule request.....	93
Figure 66 – Example of a response to a meter read schedule request.....	93



Figure 67 – Example of a meter read schedule cancel message.....	95
Figure 68 – Example of a simple meter read request imbedded in a SOAP message .....	95
Figure 69 – Example of a simple acknowledgement message .....	97
Figure 70 – Message exchange pattern showing the simple acknowledgement messages.....	98
Table 1 – Common EndDeviceControls and their corresponding EndDeviceEvent codes .....	64
Table 2 – Common EndDeviceEvent codes for unsolicited messages.....	75
Table 3 – Config Profiles.....	77
Table 4 – JMS properties .....	99
Table 5 – get(MeterReadings) fields.....	101
Table 6 – reply(MeterReadings) fields .....	103
Table 7 – create(EndDeviceControls) fields.....	107
Table 8 – reply(EndDeviceControls) fields .....	108
Table 9 – created(EndDeviceEvents) fields .....	109
Table 10 – create(MeterConfig) fields.....	111
Table 11 – create(ComModuleConfig) fields .....	113
Table 12 – create(ServiceLocationConfig) fields .....	115
Table 13 – create(ServiceCategoryConfig) fields.....	116
Table 14 – create(ServiceSupplierConfig) fields.....	117
Table 15 – create(UsagePointLocationConfig) fields.....	119
Table 16 – create(UsagePointConfig) fields.....	120
Table 17 – create(CustomerConfig) fields.....	123
Table 18 – create(CustomerAccountConfig) fields .....	125
Table 19 – create(CustomerAgreementConfig) fields .....	126
Table 20 – create(PricingStructureConfig) fields .....	128
Table 21 – create(MasterDataLinkageConfig) fields, example 1 .....	129
Table 22 – create(MasterDataLinkageConfig) fields, example 2 .....	131
Table 23 – execute(OperationSet) Header and Payload fields, example 1 .....	132
Table 24 – execute(OperationSet) Header and Payload fields, example 2 .....	135
Table 25 – execute(OperationSet) Header and Payload fields, example 3 .....	139

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 900: Guidance for implementation of IEC 61968-9**

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.  
<https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70->
- 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.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC TR 61968-900, which is a technical report, has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
57/1579/DTR	57/1616/RVC

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 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 present technical report refers to some ambiguities occurring essentially in IEC 61968-9 and IEC 61968-100 (labelled here as “Warnings”). These issues are being addressed in Working Group 14 of IEC technical committee 57 and will be resolved in the forthcoming new editions of IEC 61968-9 and IEC 61968-100.

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.**

[IEC TR 61968-900:2015](https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015)

<https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015>

## INTRODUCTION

### General

This technical report is intended to help users to interpret IEC 61968-9:2013.

IEC 61968-9 provides a uniform means for performing meter read and control operations over a distributed network.

The most recent version of IEC 61968-9 was published in 2013 and is the second edition. This technical report therefore concentrates on this edition.

Although this technical report concentrates on IEC 61968-9, a portion of this depends on another standard, IEC 61968-100:2013.

The purpose of IEC 61968-9 is to allow heterogeneous components, possibly produced by different vendors, to interoperate with one another. Such components typically include a customer information system (CIS), an outage management system (OMS), a meter data management system (MDMS) and a head-end system (HES).

The messages that are exchanged between the various components are XML documents. IEC 61968-9 defines how these messages are expressed according to the semantics of the operations supported by this standard.

For example, a MDMS might instruct a HES to read the forward bulk energy usage from a set of meters and return the corresponding values back to the MDMS. Alternatively, the HES might be instructed to perform some control operations on a meter – for instance, disconnect the power, reset the readings of that meter and then reestablish the power again. In both cases, IEC 61968-9 defines the precise way in which the appropriate request and response messages are formulated.

While IEC 61968-9 defines the various data items from which the request and response messages are constructed, it is less prescriptive about the corresponding message flows – that is, how a complete message exchange looks. This document provides examples of typical message exchange patterns.

In other words, IEC 61968-9 is informative rather than normative (mandatory) when it comes to describing use cases and message patterns.

IEC 61968-9 does not prescribe the means by which such messages are transmitted from component to component. However, it may be assumed that components communicate with one another either by means of web services (SOAP messages) or over a message bus such as JMS or equivalent.

### IEC 61968-9 XML schema definition files

IEC 61968-9 defines many different types of XML message according to the kind of data that are to be transmitted. These message types are referred to as profiles. For example, one such profile corresponds to a meter read request message and another to the corresponding response message.

Annexes H and I of IEC 61968-9:2013 contain listings of various XML schema definition (XSD) files, one for each profile supported by the standard. These constrain the formats of the various allowable XML messages and can be used both to generate sent messages as well as to validate received messages. XSD validation is often a first step in ensuring that received messages are at least syntactically correct, although it does not guarantee that the information in the various fields is always appropriate with regard to the application.

A paper or PDF listing is not a particularly practical way of accessing these XSD documents. However, they are also available in electronic form from the UCAIUG website<sup>1</sup>.

Such XSD files may be conveniently examined using a graphical editor such as XML Spy which is a commercial product from Altova GmbH<sup>2</sup>. Open-source tools such as Eclipse<sup>3</sup> offer similar functionality.

### Conventions used in this technical report

The examples used in this technical report generally refer to MDMS and HES systems. These names are used for illustrative purposes only. Other system names such as CIS and MDMS or client and server could just as equally well have been chosen.

XML fragments and examples, the names of files and other literal text are shown in a fixed-width font.

XML schemas are depicted using screen shots taken from XML Spy. The solid lines represent mandatory elements and the dotted lines represent optional elements. Please see the XML Spy documentation<sup>4</sup> for explanations of the other symbols used.



A sign like this denotes a warning. There are a few areas where special care needs to be taken with IEC 61968-9.

IEC STANDARD PREVIEW  
(standards.iteh.ai)

### How this technical report is organized

- Clause 3 of this technical report describes the basics of IEC 61968-100 as they relate to IEC 61968-9.
- Clause 4 describes more details concerning IEC 61968-100, especially as to what these have to do with formulating request and response messages and how notifications of errors are communicated. This clause also describes how the standard IEC 61968-9 set of messages may be augmented by implementation-specific messages.
- Clause 5 describes how meters and other objects are named in the IEC 61968-9 world.
- Clauses 6 and 7 respectively describe how meter read operations and meter control operations are carried out.
- Clause 8 shows how a MDMS or HES may be configured with provisioning information.
- Clause 9 discusses some of the less frequently used message exchange patterns, specifically how to schedule actions for execution at some future time and how to cancel them should the need arise.

<sup>1</sup> <http://iectc57.ucaiug.org/WG14/Part9/Shared%20Documents/Part%209%20Ed/IEC-Part9-Profiles-2nd-Edition%20FDIS.zip>

<sup>2</sup> <http://www.altova.com> – XML Spy is the trade name of a product supplied by Altova GmbH. This information is given for the convenience of users of this document and does not constitute an endorsement by the IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

<sup>3</sup> <http://www.eclipse.org> – Eclipse is the trade name of a product supplied by the Eclipse Foundation. This information is given for the convenience of users of this document and does not constitute an endorsement by the IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

<sup>4</sup> <http://www.altova.com/documents/XMLSpyTutorial.pdf>

- Clause 10 provides some details concerning transmitting IEC 61968-9 messages over SOAP (web services) or JMS transports.
- Clause 11 is a detailed reference of the various fields that are used within IEC 61968-9 messages.

## **iTeh STANDARD PREVIEW (standards.iteh.ai)**

[IEC TR 61968-900:2015](https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015)

<https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015>

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

## Part 900: Guidance for implementation of IEC 61968-9

### 1 Scope

This part of IEC 61968-9, which is a technical report, is a reference document and, as such, is not always suitable for someone new to the world of meter reading and control. In particular, it assumes significant domain knowledge.

This technical report is a companion document to the official standard. It is written from the viewpoint of a software developer or systems integrator who is tasked with implementing IEC 61968-9. It is not intended as a complete description of this standard. For full details, please refer to IEC 61968-9.

To get the most from this technical report, the user should have a good understanding of XML technologies, in particular of XML schema definitions and of web services.

This technical report contains informative recommendations which may be used to guide implementations of IEC 61968-9 and IEC 61968-100. It does not attempt to be exhaustive. In particular, it focuses on the most common IEC 61968-9 interfaces and assumes the user is using web services or JMS as the underlying transport mechanism. If the user is using other systems or the transport services are something other than web services or JMS, the recommendations in this technical report may be less relevant but perhaps still useful.

<https://standards.iteh.ai/catalog/standards/sist/5d975472-654f-4fa1-8d70-ef4726eb13af/iec-tr-61968-900-2015>

### 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 61968-9:2013, *Application integration at electric utilities – System interfaces for distribution management – Part 9: Interfaces for meter reading and control*

IEC 61968-100:2013, *Application integration at electric utilities – System interfaces for distribution management – Part 100: Implementation profiles*

### 3 IEC 61968-100 basics

#### 3.1 General

The IEC 61968-100 standard is shared across the other IEC 61968 standards, not just IEC 61968-9. In broad terms, whereas IEC 61968-9 is concerned with the *contents* of the various messages, IEC 61968-100 is more concerned with the *construction* of the messages and the *transport* of messages between systems.

An important part of IEC 61968-100 is the Message.xsd schema definition file<sup>5</sup>. This describes a message header which forms part of every IEC 61968-9 message. This is

<sup>5</sup> <http://iectc57.ucaug.org/WG14/part100/Shared%20Documents/Common%20Message/Message.xsd>