IEC 61968-9

Edition 2.0 2013-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Application integration at electric utilities – System interfaces for distribution management – Part 9: Interfaces for meter reading and control

Intégration d'applications pour les services électriques – Interfaces système pour la gestion de distribution – Partie 9: Interfaces pour le relevé et la commande des compteurs

IEC 61968-9:2013

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

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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colour inside

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE CODE PRIX XH

ICS 33.200

ISBN 978-2-8322-1165-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 61968-9 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision and includes the following significant technical changes with respect to the previous edition:

a) changes to and addition of new profiles to support PAN and UsagePoints;
b) extensions to support PAN devices generically as EndDevices;
c) extensions to the MeterReading model and profiles to support richer descriptions of metered quantities and to accommodate coincident readings;
d) addition of CIM Name class and corresponding revisions to profiles to allow reference by name instead of by mRID. Where the document may identify the use of mRID values as references, Name.name values may be alternatively used. This is described in more detail in Annex G;

e) reference of ReadingTypes, EndDeviceEventTypes and EndDeviceControlTypes using name references;

f) definition of normative enumerations for ReadingTypes, EndDeviceEventTypes and EndDeviceControlTypes in annexes;

g) various corrections to example sequence diagrams;

h) Removal of MeterAssetReading profile, where functionality is supported using the MeterReading profile;

i) MeterAsset class is now named Meter;

j) MeterAssetConfig profile now named MeterConfig;

k) EndDeviceAssets profile now named EndDeviceConfig;

l) removal of EndDeviceFirmware profile, where functionality is supported using the EndDeviceConfig profile;

m) use of new namespaces to reflect the new edition, where the namespaces is reflective of the year in which a profile is defined;

n) adoption of UsagePoint as a replacement for and a generalization of ServiceDeliveryPoint;

o) SDPLocationConfig has been deprecated in favor of UsagePointLocationConfig;

p) some profiles previously defined have been moved into the new subclause 5.10 which is focused on data linkages;

q) elimination of the MeterSystemEvents profile, as it provided no functionality that could not be achieved with the EndDeviceEvents profile;

r) there were several profiles originally defined in support of prepayment use cases that were identified to be more general in nature, and were consequentially moved to 5.10. Subclause 5.8 now consists of only those profiles that are specific to prepayment. In all cases there has been some refactoring of these profiles to reflect other necessary changes that have been described;

s) supplierConfig has been renamed ServiceSupplierConfig;

t) messages using the SUBSCRIBE verb have been removed as these are related to the underlying communication transport and do not reflect actual IEC 61968 messages.

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

FDIS	Report on voting
57/1377/FDIS	57/1394/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.

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.

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INTRODUCTION

The purpose of this document is to define a standard for the integration of Metering Systems (MS), which would include traditional (one or two-way) Automated Meter Reading (AMR) Systems, with other systems and business functions within the scope of IEC 61968. The scope of this standard is the exchange of meter reading, transactions, event and control information between systems within the utility enterprise and between enterprises. The specific details of communication protocols those systems employ are outside the scope of this standard. Instead, this standard will recognize and model the general capabilities that can be potentially provided by advanced and/or legacy meter infrastructures, including two-way communication capabilities such as load control, dynamic pricing, outage detection, distributed energy resource (DER) control signals and on-request read. In this way, this standard will not be impacted by the specification, development and/or deployment of next generation meter infrastructures, either through the use of standards or proprietary means.

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, *Interface architecture and general requirements.*