BS EN 61968-13:2008

BSI British Standards

Application integration at electric utilities — System interfaces for distribution management —

Part 13: CIM RDF Model exchange format for distribution

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This British Standard is the UK implementation of EN 61968-13:2008. It is identical to IEC 61968-13:2008.

The UK participation in its preparation was entrusted to Technical Committee PEL/57, Power systems management and associated information exchange.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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(IEC 61968-13:2008)

Intégration d'applications pour les services électriques - Système d'interfaces pour la gestion de la distribution - Partie 13: Format d'échange du modèle CIM RDF pour la distribution (CEI 61968-13:2008)

Integration von Anwendungen in Anlagen der Elektrizitätsversorgung - Systemschnittstellen für Netzführung - Teil 13: RDF-Austauschformat des CIM-Models für Verteilnetze (IEC 61968-13:2008)

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CENELEC
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Foreword

The text of document 57/930/FDIS, future edition 1 of IEC 61968-13, prepared by IEC TC 57, Power systems management and associated information exchange, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61968-13 on 2008-09-01.

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– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-06-01
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Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61968-13:2008 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 referenced documents are indispensable for the application of this document. 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 61968-1	-[7)]	Application integration at electric utilities - System interfaces for distribution management - Part 1: Interface architecture and general requirements	EN 61968-1	2004[8)]
IEC 61968-3	-[7)]	Application integration at electric utilities - System interfaces for distribution management - Part 3: Interface for network operations	EN 61968-3	2004[8)]
IEC 61968-4	-[7)]	Application integration at electric utilities - System interfaces for distribution management - Part 4: Interfaces for records and asset management	EN 61968-4	2007[8)]
IEC 61970-301	-[7)]	Energy management system application program interface (EMS-API) - Part 301: Common Information Model (CIM) base	EN 61970-301	2004[8)]
IEC 61970-501	-[7)]	Energy management system application program interface (EMS-API) - Part 501: Common Information Model Resource Description Framework (CIM RDF) schema	EN 61970-501	2006[8)]

[7)] Undated reference.

[8)] Valid edition at date of issue.

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INTRODUCTION

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 optimized 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 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. Standards 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 –

Part 13: CIM RDF Model exchange format for distribution

1 Scope

This part of IEC 61968 specifies the format and rules for exchanging modeling information based upon the CIM (Common Information Model) and related to distribution network data.

The intention of this part of IEC 61968 is to allow the exchange of instance data in bulk. Thus, the imported network model data should be sufficient to allow performing network connectivity analysis, including network tracing, outage analysis, load flow calculations, etc. This part could be used for synchronizing geographical information system databases with remote control system databases.

This part is closely linked to IEC 61970-452 Energy Management System Application Program Interface (EMS-API) CIM Network applications model exchange specification. Thus, this document has been written in order to reduce its maintenance. It describes only differences with IEC 61970-452. Nevertheless, as IEC 61970-452 is a future international standard, this part still has duplicate information with IEC 61970-452, in order to be more understandable.

It uses the CIM RDF[1)] Schema presented in IEC 61970-501 as the meta-model framework for constructing XML[2)] documents containing power system modeling information. The syntax of these documents is called CIM XML format. Model exchange by file transfer serves many useful purposes, specially when some applications need to have the complete network model defined. Though the format can be used for general CIM-based information exchange, in this part of IEC 61968, specific profiles (or subsets) of the CIM are identified in order to address particular exchange requirements.

Given the CIM RDF Schema described in IEC 61970-501, a DMS power system model can be converted for export as an XML document, see Figure 1. This document is referred to as a CIM XML document. All of the tags (resource descriptions) used in the CIM XML document are supplied by the CIM RDF schema. The resulting CIM XML model exchange document can be parsed and the information imported into a foreign system. This part of IEC 61968 is aligned to CIM Model version 11, CPSM 3.0 profile.

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1) RDF: Resource Description Framework.

2) XML: eXtensible Markup Language.