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Kommunikation på energimarknaden – Del 301: Utvidgning av den gemensamma informationsmodellen (CIM) för marknader

Framework for energy market communications –

Part 301: Common information model (CIM) extensions for markets

Som svensk standard gäller europastandarden EN 62325-301:2014. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62325-301:2014.

Nationellt förord

Europastandarden EN 62325-301:2014

består av:

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- **IEC 62325-301, First edition, 2014 - Framework for energy market communications - Part 301: Common information model (CIM) extensions for markets**

utarbetad inom International Electrotechnical Commission, IEC.

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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.

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English Version

**Framework for energy market communications - Part 301:
Common information model (CIM) extensions for markets
(IEC 62325-301:2014)**

Cadre pour les communications pour le marché de l'énergie
- Partie 301: Extensions du modèle d'information commun
(CIM) pour les marchés
(CEI 62325-301:2014)

Kommunikation im Energiemarkt - Teil 301: CIM-Profil-
Erweiterung für Märkte
(IEC 62325-301:2014)

This European Standard was approved by CENELEC on 2014-06-12. 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.

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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.

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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

Foreword

The text of document 57/1438/FDIS, future edition 1 of IEC 62325-301, 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 62325-301:2014.

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) 2015-03-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-06-12

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Endorsement notice

The text of the International Standard IEC 62325-301:2014 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/TS 61970-2	NOTE	Harmonised as CLC/TS 61970-2.
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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: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	-
IEC 62325-450	-	Framework for energy market communications -- Part 450: Profile and context modelling rules	EN 62325-450	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –**Part 301: Common information model (CIM) extensions for markets****FOREWORD**

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International Standard IEC 62325-301 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
57/1438/FDIS	57/1469/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.

Throughout this document, references are made to the UML model. References to specific UML packages and classes are made by citing the name of package or class in single quotes, example, 'IEC 61970' or 'IdentifiedObject'.

A list of all parts of the IEC 62325 series, under the general title: *Framework for energy market communications*, 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 International Standard is part of the IEC 62325 series for deregulated energy market data exchanges. This standard was originally based upon the work of the European transmission system operators TF 14 EDI (Electronic data interchange) and the EPRI TR 1009455 and TR 1011431 (CIM extensions to support market operations, phase 1 and phase 2).

The principal objective of the IEC 62325 series of standards is to produce standards which facilitate the integration of market application software developed independently by different vendors into a market management system, between market management systems and market participant systems. This is accomplished by defining message exchanges to enable these applications or systems access to public data and exchange information independent of how such information is represented internally.

The common information model (CIM) specifies the basis for the semantics for this message exchange. The profile specifications, which are contained in other parts of the IEC 62325 standards, specify the content of the messages exchanged. Profile specifications in other parts of the IEC 62325 standard support both European style markets based on the European regulations and the Third Party Access and zonal market concepts and US style markets characterized by day ahead unit commitment by a market operator, intraday and real time balancing through central dispatch, and settlement based on locational marginal prices. These markets are used in the US and in other parts of the world and are not exclusively limited to North America.

The CIM is an abstract model that represents all the major objects in an electric utility enterprise typically needed to model the operational aspects of a utility. This model includes public classes and attributes for these objects, as well as the relationships between them.

The objects represented in the CIM are abstract in nature and may be used in a wide variety of applications. The use of the CIM goes far beyond its application in a market management system. This standard should be understood as a tool to enable integration in any domain where a market system model is needed to facilitate interoperability and plug compatibility between applications and systems independent of any particular implementation.

The IEC 62325 standards are part of a series of standards. IEC 61970 standards define the EMS application programming interfaces and the IEC 61968 standards define System interfaces for distribution management. IEC 62325-301 corresponds to the IEC 61970-301 and the IEC 61968-11 standards that describe parts of the common information model relevant to modeling interfaces for EMS, DMS and MMS systems. While there are multiple IEC standards dealing with different parts of the CIM, there is a single, unified information model comprising the CIM behind all these individual standards documents.

FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –

Part 301: Common information model (CIM) extensions for markets

1 Scope

This part of IEC 62325 specifies the common information model for energy market communications.

The common information model (CIM) is an abstract model that represents all the major objects in an electric utility enterprise typically involved in utility operations and electricity market management. By providing a standard way of representing power system resources as object classes and attributes, along with their relationships, the CIM facilitates the integration of market management system (MMS) applications developed independently by different vendors, between entire MMS systems developed independently, or between an MMS system and other systems concerned with different aspects of market management, such as capacity allocation, day-ahead management, balancing, settlement, etc.

The CIM facilitates integration by defining a common language (i.e. semantics) based on the CIM to enable these applications or systems to access public data and exchange information independent of how such information is represented internally.

The object classes represented in the CIM are abstract in nature and may be used in a wide variety of applications. The use of the CIM goes far beyond its application in a market management system.

Due to the size of the complete CIM, the object classes contained in the CIM are grouped into a number of logical packages, each of which represents a certain part of the overall power system being modeled. Collections of these packages are progressed as separate international standards. This particular international standard specifies a set of packages which provide a logical view of the functional aspects of market management within an electricity market that is shared between all applications. Other standards specify more specific parts of the model that are needed by only certain applications. Subclause 4.2 provides the current grouping of packages into standards documents.

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 61968-11, *Application integration at electric utilities – System interfaces for distribution management – Part 11: Common information model (CIM) extensions for distribution*

IEC 61970-301, *Energy management system application program interface (EMS-API) – Part 301: Common information model (CIM) base*

IEC 62325-450, *Framework for energy market communications – Part 450: Profile and context modelling rules*

Object management group: *UML 2.0 specification* – available at <<http://www.omg.org>>