

**Energy management system application
program interface (EMS-API) Part 501:
Common Information Model Resource
Description Framework (CIM RDF)
schema**

Energy management system application program
interface (EMS-API) Part 501: Common Information
Model Resource Description Framework (CIM RDF)
schema

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61970-501:2006 sisaldab Euroopa standardi EN 61970-501:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 22.09.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 61970-501:2006 consists of the English text of the European standard EN 61970-501:2006. This document is endorsed on 22.09.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This International Standard specifies a Component Interface Specification (CIS) for energy management systems application program interfaces. This part of IEC 61970 specifies the format and rules for producing a machine readable form of the Common Information Model (CIM) as specified in the IEC 61970-301 standard. It describes a CIM vocabulary to support the data access facility and associated CIM semantics.	Scope: This International Standard specifies a Component Interface Specification (CIS) for energy management systems application program interfaces. This part of IEC 61970 specifies the format and rules for producing a machine readable form of the Common Information Model (CIM) as specified in the IEC 61970-301 standard. It describes a CIM vocabulary to support the data access facility and associated CIM semantics.
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ICS 33.200

Võtmesõnad:

**Energy management system application program interface (EMS-API)
Part 501: Common Information Model Resource Description Framework
(CIM RDF) schema
(IEC 61970-501:2006)**

Système de gestion d'énergie
Interface de programmation d'application
(EMS-API)
Partie 501: Schéma de cadre général
pour la description des ressources
du modèle d'information commun
(CIM RDF)
(CEI 61970-501:2006)

Anwendungsprogramm-Schnittstelle
für Netzführungssysteme (EMS-API)
Teil 501: Allgemeines Informationsmodell
(CIM) –
Resource Description Framework
(CIM RDF) Schema
(IEC 61970-501:2006)

This European Standard was approved by CENELEC on 2006-04-01. 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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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 57/801/FDIS, future edition 1 of IEC 61970-501, 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 61970-501 on 2006-04-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2007-01-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-04-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61970-501:2006 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61970-1	- ¹⁾	Energy management system application program interface (EMS-API) Part 1: Guidelines and general requirements	EN 61970-1	2006 ²⁾
IEC/TS 61970-2	- ¹⁾	Energy management system application program interface (EMS-API) Part 2: Glossary	-	-
IEC 61970-301	- ¹⁾	Energy management system application program interface (EMS-API) Part 301: Common Information Model (CIM) Base	EN 61970-301	2004 ²⁾
IEC 60050	Series	International Electrotechnical Vocabulary (IEV)	-	-

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

INTERNATIONAL STANDARD

IEC
61970-501

First edition
2006-03

**Energy management system application
program interface (EMS-API) –**

**Part 501:
Common Information Model Resource
Description Framework (CIM RDF) schema**



Reference number
IEC 61970-501:2006(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ENERGY MANAGEMENT SYSTEM APPLICATION PROGRAM INTERFACE (EMS-API) –

Part 501: Common Information Model Resource Description Framework (CIM RDF) schema

FOREWORD

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International Standard IEC 61970-501 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
57/801/FDIS	57/813/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.

IEC 61970 consists of the following parts, under the general title *Energy Management System Application Program Interface (EMS-API)*:

- Part 1: Guidelines and general requirements
- Part 2: Glossary
- Part 301: Common Information Model (CIM) base
- Part 302: Common information model (CIM) financial, energy scheduling and reservations ¹
- Part 401: Component interface specification (CIS) framework
- Part 402: Component interface specification (CIS) – Common services¹
- Part 403: Component Interface Specification (CIS) – Generic data access¹
- Part 404: Component Interface Specification (CIS) – High speed data access¹
- Part 405: Component Interface Specification (CIS) – Generic eventing and subscription¹
- Part 407: Component Interface Specification (CIS) – Time series data access¹
- Part 453: Exchange of Graphics Schematics Definitions (Common Graphics Exchange) ¹
- Part 501: Common Information Model Resource Description Framework (CIM RDF) schema

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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 edition of this standard may be issued at a later date.

¹ Under consideration.

INTRODUCTION

This standard is part of the IEC 61970 series that define an Application Program Interface (API) for an Energy Management System (EMS). This standard is based upon the work of the EPRI Control Center API (CCAPI) research project (RP-3654-1).

This part specifies the mapping between the conceptual model specified as Unified Modeling Language (UML) defined in IEC 61970-3XX series: Common Information Model and the machine readable Extensible Markup Language (XML) representation of that schema using the Resource Description Framework (RDF) Schema specification language.

ENERGY MANAGEMENT SYSTEM APPLICATION PROGRAM INTERFACE (EMS-API) –

Part 501: Common Information Model Resource Description Framework (CIM RDF) schema

1 Scope

This International Standard specifies a Component Interface Specification (CIS) for energy management systems application program interfaces. This part of IEC 61970 specifies the format and rules for producing a machine readable form of the Common Information Model (CIM) as specified in the IEC 61970-301 standard. It describes a CIM vocabulary to support the data access facility and associated CIM semantics.

This part of IEC 61970 supports a mechanism for applications from independent suppliers to access CIM metadata in a common format and with standard services for the purpose of subsequent CIM data access. Secondary objectives are to provide CIM versioning capabilities and a mechanism that is easily extensible to support site-specific needs. The proposed solution:

- is both machine readable and human readable, although primarily intended for programmatic access;
- can be accessed using any tool that supports the Document Object Model (DOM) application program interface;
- is self-describing;
- takes advantage of current web standards.

This document is the Level 2 Component Interface Specification document that describes in narrative terms (with text and examples based on the CIM), the detailed definition of the CIM metadata interface to be standardized.

2 Normative references

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.

IEC 61970-1, *Energy management system application program interface (EMS-API) – Part 1: Guidelines and general requirements*

IEC 61970-2, *Energy management system application program interface (EMS-API) – Part 2: Glossary*

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

IEC 60050 series: *International Electrotechnical Vocabulary*