

**Energy Management System Application Program
Interface (EMS-API) -- Part 552: CIMXML Model Exchange
Format**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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**Energy Management System Application Program Interface (EMS-API) -
Part 552: CIMXML Model Exchange Format
(IEC 61970-552:2013)**

Interface de programmation d'application
pour système de gestion d'énergie (EMS-
API) -
Partie 552: Format d'échange de modèle
CIMXML
(CEI 61970-552:2013)

Schnittstelle für Anwendungsprogramme
für Netzführungssysteme (EMS-API) -
Teil 552: CIM-XML-Modell
Austauschformat
(IEC 61970-552:2013)

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European Committee for Electrotechnical Standardization
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Foreword

The text of document 57/1386/FDIS, future edition 1 of IEC 61970-552, 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 61970-552:2014.

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) 2014-09-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-12-03

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Endorsement notice

The text of the International Standard IEC 61970-552:2013 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 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 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 60050	Series	International Electrotechnical Vocabulary (IEV)	-	-
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/TS 61970-2	-	Energy management system application program interface (EMS-API) - Part 2: Glossary	CLC/TS 61970-2	-
IEC 61970-301	-	Energy management system application program interface (EMS-API) - Part 301: Common information model (CIM) base	EN 61970-301	-
IEC 61970-501	-	Energy management system application program interface (EMS-API) - Part 501: Common Information Model Resource Description Framework (CIM RDF) schema	EN 61970-501	-
W3C	-	Document Object Model (DOM)	-	-
W3C	-	RDF/XML Syntax Specification	-	-
W3C	-	Extensible Markup Language (XML) 1.0	-	-
W3C	-	XSL Transformations (XSLT)	-	-

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	7
4 Model exchange header	9
4.1 General.....	9
4.2 CIMXML documents and headers	9
4.3 Model and header data description	10
4.4 Work flow.....	12
5 Object identification	13
5.1 URIs as identifiers.....	13
5.2 About rdf:ID and rdf:about	14
5.3 CIMXML element identification	14
6 CIMXML format rules and conventions	15
6.1 General.....	15
6.2 Simplified RDF syntax	16
6.2.1 General.....	16
6.2.2 Notation	16
6.2.3 Syntax definition	16
6.2.4 Syntax extension for difference model	21
6.3 CIMXML format style guide.....	26
6.4 Representing new, deleted and changed objects as CIMXML elements	27
6.5 CIM RDF schema generation with CIM profile	27
6.6 CIM extensions	28
6.7 RDF simplified syntax design rationale	28
Bibliography	30
Figure 1 – Model with header	10
Figure 2 – Example work flow events.....	12
Figure 3 – Example work flow events with more dependencies.....	13
Figure 4 – CIMXML-based power system model exchange mechanism	15
Figure 5 – Relations between UML, profile and CIMXML tools.....	28
Table 1 – Header attributes	11

INTRODUCTION

This International standard is part of the IEC 61970 series that define an Application Program Interface (API) for an Energy Management System (EMS).

IEC 61970-301 specifies a Common Information Model (CIM): a logical view of the physical aspects of an electric utility operations. The CIM is described using the Unified Modelling Language (UML), a language used to specify, visualize, and document systems in an object-oriented manner. UML is an analysis and design language; it is not a programming language. In order for software programs to use the CIM, it must be transformed into a schema form that supports a programmable interface.

IEC 61970-501 describes the translation of the CIM in UML form into a machine readable format as expressed in the Extensible Markup Language (XML) representation of that schema using the Resource Description Framework (RDF) Schema specification language.

IEC 61970-552 specifies how the CIM RDF schema specified in IEC 61970-501 is used to exchange power system models using XML (referred to as CIMXML) defined in the 61970-45x series of profile standards, such as the CIM Transmission Network Model Exchange Profile described in IEC 61970-452.

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

Part 552: CIMXML Model exchange format

1 Scope

This International Standard specifies a Component Interface Specification (CIS) for Energy Management Systems Application Program Interfaces. This part specifies the format and rules for exchanging modelling information based upon the CIM. It uses the CIM RDF Schema presented in IEC 61970-501 as the meta-model framework for constructing XML documents of power system modelling information. The style of these documents is called CIMXML format.

Model exchange by file transfer serves many useful purposes. Profile documents such as IEC 61970-452 and other profiles in the 61970-45x series of standards explain the requirements and use cases that set the context for this work. Though the format can be used for general CIM-based information exchange, specific profiles (or subsets) of the CIM are identified in order to address particular exchange requirements. The initial requirement driving the solidification of this specification is the exchange of transmission network modelling information for power system security coordination.

This standard supports a mechanism for software from independent suppliers to produce and consume CIM described modelling information based on a common format. 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) and other standard XML application program interfaces,
- is self-describing,
- takes advantage of current World Wide Web Consortium (W3C) recommendations.

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 CIMXML format.

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 60050 series, *International Electrotechnical Vocabulary*

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

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