SLOVENSKI STANDARD
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Programski vmesnik za sistem za upravljanje energije (EMS-API) - 1. del: Smernice in splošne zahteve (IEC 61970-1:2005)

Energy management system application program interface (EMS-API) -- Part 1: Guidelines and general requirements

Schnittstelle der Anwendungsprotokolle von Energieverwaltungssystemen (EMS-API) -- Teil 1: Leitfaden und allgemeine Anforderungen

Interface de programmation d'application pour système de gestion d'énergie (EMS-API) -- Partie 1: Lignes directrices et exigences générales

Ta slovenski standard je istoveten z: **EN 61970-1:2006**

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Energy management system application program interface (EMS-API)
Part 1: Guidelines and general requirements
(IEC 61970-1:2005)

Interface de programmation d'application pour système de gestion d'énergie (EMS-API)
Partie 1: Lignes directrices et exigences générales
(CEI 61970-1:2005)

Schnittstelle der Anwendungsprotokolle von Energieverwaltungssystemen (EMS-API)
Teil 1: Leitfaden und allgemeine Anforderungen
(IEC 61970-1:2005)

This European Standard was approved by CENELEC on 2005-12-01. 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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CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

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Foreword

The text of document 57/777/FDIS, future edition 1 of IEC 61970-1, 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 61970-1 on 2005-12-01.

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)	2006-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2008-12-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61970-1:2005 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61968	NOTE Harmonized in the EN 61968 series (not modified).

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 Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 61970-2	– [1)]	Energy management system application program interface (EMS-API) Part 2: Glossary	CLC/TS 61970-2	2005 [2)]
IEC 61970-301	– [1)]	Energy management system application program interface (EMS-API) Part 301: Common Information Model (CIM) base	EN 61970-301	2004 [2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

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Première édition
First edition
2005-12

Interface de programmation d'application pour système de gestion d'énergie (EMS-API) –

Partie 1: Lignes directrices et exigences générales

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

Part 1: Guidelines and general requirements

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 1: Guidelines and general requirements

FOREWORD

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International Standard IEC 61970-1 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
57/777/FDIS	57/795/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 services[1]

Part 403: Component Interface Specification (CIS) – Generic data access[1]

Part 404: Component Interface Specification (CIS) – High speed data access[1]

Part 405: Component Interface Specification (CIS) – Generic eventing and subscription[1]

Part 407: Component Interface Specification (CIS) – Time series data access[1]

Part 453: Exchange of Graphics Schematics Definitions (Common Graphics Exchange)[1]

Part 501: Common Information Model (CIM) XML Codification for Programmable Reference and Model Data Exchange

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.

[1] Under consideration.

INTRODUCTION

This standard is part of the IEC 61970 series that defines application program interfaces (APIs) for an energy management system (EMS). This standard is based to a large extent upon the work of the EPRI Control Center API (CCAPI) research project (RP-3654-1). The principle objectives of the EPRI CCAPI project are to:

– reduce the cost and time needed to add new applications to an EMS or other system[2];

– protect the investment in existing applications that are working effectively;

– improve the capability to exchange information between disparate systems both within and external to the control center environment.

The technical approach is to provide an integration framework for interconnecting existing applications/systems that is

– based on a common architecture and information model;

– independent of the underlying technology.

The principal task of the IEC 61970 series of standards is to develop a set of guidelines and standards to facilitate 1) the integration of applications developed by different suppliers in the control center environment[3] and 2) the exchange of information to systems external to the control center environment. The scope of these specifications includes other transmission systems as well as distribution and generation systems external to the control center that need to exchange real-time operational data with the control center. Therefore, another related goal of these standards is to enable the integration of existing legacy systems as well as new systems built to conform to these standards in these application domains.

The complete set of standards includes the following parts:

Part 1: Guidelines and general requirements

Part 2: Glossary

Part 3XX: Common Information Model (CIM)

Part 4XX: Component Interface Specification (CIS)

Part 5XX: CIS Technology Mappings

IEC 61970-1 provides a set of guidelines and general infrastructure capabilities needed for the application of the EMS-API interface standards. It describes the reference model that provides the framework for the application of the other parts of the EMS-API standards. This reference model is based on a component architecture, which places the focus of the standards on component interfaces for information exchange between applications in a control center environment. The model is also applicable to similar information exchanges between control center applications and systems external to the control center environment, such as other control centers, Independent System Operators (ISOs), Regional Transmission Organizations (RTOs), and Distribution Management Systems (DMS).

IEC 61970-1 also includes general capabilities for the integration infrastructure, which while not part of this standard, is expected to provide certain essential services to support the EMS-API interface standards.

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2 Ideally, an application should be installed on a system with minimal effort and no modification of source code; i.e., the way software packages are installed on a desktop computer. The EMS-API Project goal is to at least approach that ideal by reducing the often significant efforts currently required to install third-party applications in an EMS.

3 The control center environment includes traditional transmission control within a utility as well as the newer Independent System Operators (ISOs) and Regional Transmission Operators (RTOs), which are not affiliated with any one utility.

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

Part 1: Guidelines and general requirements

1 Scope

This part of the IEC 61970 series provides a set of guidelines and general infrastructure capabilities required for the application of the EMS-API interface standards. This part of the IEC 61970 series describes typical integration scenarios where these standards are to be applied and the types of applications to be integrated. A reference model is defined to provide a framework for the application of the other parts of these EMS-API standards. This reference model is based on a component architecture that places the focus of the standards on component interfaces for information exchange between applications in a control center environment. While the primary objective of the EMS-API is to support the integration of applications within the control center, the reference model is also applicable to information exchanges between control center applications and systems external to the control center environment, such as other control centers, ISOs, RTOs, and distribution systems. This standard describes the role of the other parts of the standard, including the Common Information Model (CIM) in the IEC 61970-3XX series, the Component Interface Specifications (CIS) in the IEC 61970-4XX series, and Technology Mappings in the IEC 61970-5XX series.

This part of the IEC 61970 series also includes general capabilities that are needed by the integration infrastructure to facilitate the exchange of information via the component interfaces specified by the CIS. While the integration infrastructure itself is not part of this standard, it is expected to provide certain essential services to support the EMS-API interface standards. These services are enumerated in Clause 6.

This part of the IEC 61970 series does not specify individual implementations or products, nor does it constrain the representation of information within a computer system application. This standard specifies the externally visible interfaces, including semantics and syntax, required to support the interoperability of products supplied by different vendors.

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 61970-2, *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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61970-2 apply.