
Aplikacijski programski vmesnik za sistem upravljanja z energijo (EMS-API) - 403.
del: Dostop do rodovnih podatkov (IEC 61970-403:2008)

Energy management system application program interface (EMS-API) -- Part 403:
Generic data access

Schnittstelle für Anwendungsprogramme für Netzführungssysteme (EMS-API) - Teil 403:
Allgemeiner Datenzugriff

Interface de programmation d'application pour système de gestion d'énergie (EMS-API) -
Partie 403: Accès aux données génériques

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**Energy management system application program interface (EMS-API) -
Part 403: Generic data access
(IEC 61970-403:2008)**

Interface de programmation d'application
pour systèmes de gestion d'énergie
(EMS-API) -
Partie 403: Accès
aux données génériques
(CEI 61970-403:2008)

Schnittstelle für Anwendungsprogramme
für Netzführungssysteme (EMS-API) -
Teil 403: Allgemeiner Datenzugriff
(IEC 61970-403:2008)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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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

Foreword

The text of document 57/929/FDIS, future edition 1 of IEC 61970-403, 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 61970-403 on 2008-07-01.

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) 2009-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2011-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61970-403:2008 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 61968-1	NOTE Harmonized as EN 61968-1:2004 (not modified).
IEC 61968-3	NOTE Harmonized as EN 61968-3:2004 (not modified).
IEC 61970-301	NOTE Harmonized as EN 61970-301:2004 (not modified).
IEC 61970-404	NOTE Harmonized as EN 61970-404:2007 (not modified).
IEC 61970-405	NOTE Harmonized as EN 61970-405:2007 (not modified).
IEC 61970-407	NOTE Harmonized as EN 61970-407:2007 (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 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	CLC/TS 61970-2	2005 ²⁾
IEC/TS 61970-401	- ¹⁾	Energy management system application program interface (EMS-API) - Part 401: Component interface specification (CIS) framework	-	-
IEC 61970-402	- ¹⁾	Energy management system application program interface (EMS-API) - Part 402: Common services	EN 61970-402	2008 ²⁾
OMG DAF	2002	Utility Management System (UMS) Data Access Facility (DAF)	-	-

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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INTERNATIONAL STANDARD

**Energy management system application program interface (EMS-API) –
Part 403: Generic data access**

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

Part 403: Generic data access

FOREWORD

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International Standard IEC 61970-403 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
57/929/FDIS	57/948/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.

A list of all parts of the IEC 61970 series, under the general title *Energy Management System Application Program Interface (EMS-API)*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 version of this publication may be issued at a later date.

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INTRODUCTION

This standard is one of the IEC 61970 series parts that define services for utility operational systems. This standard is based upon the work of the Electric Power Research Institute (EPRI) Control Center API (CCAPI) research project (RP-3654-1).

The IEC 61970-4xx series specifies a set of interfaces that a component (or application) should implement to be able to exchange information with other components and/or access publicly available data in a standard way. The 61970-4xx series component interfaces describe the specific event types and message contents that can be used by applications independent of any particular component technology. The implementation of these messages using a particular component technology is described in the 61970-5xx series of documents. Thus, IEC 61970-4xx documents describe a Platform Independent Model (PIM), while IEC 61970-5xx documents describe a Platform Specific Model (PSM).

IEC 61970-403 Generic Data Access (GDA) defines services that are needed to access public entity objects for the power system domain that are defined in the IEC 61970-3xx series: Common Information Model (CIM). GDA permits a client to access data maintained by another component (either an application or database) or system without any knowledge of the logical schema used for internal storage of the data. Knowledge of the existence of the common model is sufficient.

This request and reply oriented service is intended for synchronous, non-real time access of complex data structures as opposed to high-speed data access of SCADA data, for example, which is provided by IEC 61970-404, High Speed Data Access. An example where the GDA would be used is for bulk data access of a persistent store to initialise an analysis application with the current state of a power system network, and then storage of the results with notification.

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

Part 403: Generic data access

1 Scope

This International Standard provides a generic request/reply-oriented data access mechanism for applications from independent suppliers to access CIM data in combination with IEC 61970-402: Common Services. An application is expected to use the Generic Data Access (GDA) service as part of an initialisation process or an occasional information synchronization step. GDA is generic in that it can be used by an application to access any CIM data. GDA is also generic in that it also provides a back end storage mechanism independent query capability that can be used to facilitate the creation of CIM data warehouses.

This specification provides a simple, concise service that meets the functionality requirements of current and future applications while:

- avoiding unnecessary complexity;
- not requiring any specific database technology for implementation.

This service is designed to support interaction where the application or system requesting information is developed, supplied, maintained, or operated by a separate agency from the application supplying the data. Furthermore, the update portion of this service assumes that it is undesirable for one system to directly write into another¹⁾. To support these objectives, the GDA capabilities are divided into three categories:

- a) read access;
- b) update access;
- c) change notification events.

It should be noted that the update portion of this service does not support unconditional access to critical real-time data. Rather, the update portion allows a requesting application to ask for data to be changed in a service provider, but the service provider is under no obligation to carry out that change at any particular time. Furthermore, a positive response from the update service does not indicate that the update has occurred, but only that the service provider has successfully received the request and that the request is syntactically and semantically correct.

GDA could be classified as an Enterprise Information Integration (EII) technology adapter specialized to the power industry via the assumed use of the CIM. There are a number of EII products currently available on the market, but there is no accepted cross-platform standard for writing connectors for these products and overall these products do not take full advantage of a common semantic model such as the CIM. In recommending GDA, WG 13 is recommending a standard EII connector model in the form of a simpler, less expensive, and more specialized interface.

¹⁾ For more information on how 61970 excludes direct control of one application by another, see IEC 61970-402 Annex C: The IEC 61970 services and mapping IEC 61968 verbs.