DIN EN IEC 61970-600-2

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Schnittstelle der Anwendungsprotokolle von Energieverwaltungssystemen (EMS-API) – Teil 600-2: Austausch von Elektrizitätsversorgungssystemmodellen (CGMES) – Spezifikation der Austauschprofile (IEC 61970-600-2:2021); Englische Fassung EN IEC 61970-600-2:2021

Energy management system application program interface (EMS-API) –
Part 600-2: Common Grid Model Exchange Specification (CGMES) –
Exchange profiles specification
(IEC 61970-600-2:2021);
English version EN IEC 61970-600-2:2021

Interface de programmation d'application pour système de gestion d'énergie (EMS-API) –
Partie 600-1: Spécification pour l'échange de modèle de réseau commun (CGMES) –
Spécification de profils d'échange
(IEC 61970-600-2:2021);
Version anglaise EN IEC 61970-600-2:2021

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Anwendungsbeginn

Anwendungsbeginn für die von CENELEC am 2021-07-09 angenommene Europäische Norm als DIN-Norm ist 2023-07-01.

Nationales Vorwort

Vorausgegangener Norm-Entwurf: E DIN EN IEC 61970-600-2:2021-12.

Für dieses Dokument ist das nationale Arbeitsgremium DKE/K 952 „Netzleittechnik“ der DKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik in DIN und VDE (www.dke.de) zuständig.

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Da sich die Benutzer der vorliegenden Norm der englischen Sprache als Fachsprache bedienen, wird die Englische Fassung der EN IEC 61970-600-2 veröffentlicht. Zu deren Abschnitt 1, der den Anwendungsbereich festlegt und Abschnitt 3, der die Begriffe und Abkürzungen festlegt, wurde eine Übersetzung angefertigt und als informativer Nationaler Anhang NA der vorliegenden Norm hinzugefügt. Für die meisten der verwendeten Begriffe existieren keine gebräuchlichen deutschen Benennungen, da sich die deutschen Anwender in der Regel ebenfalls der englischen Benennungen bedienen. Diese Norm steht nicht in unmittelbarem Zusammenhang mit Rechtsvorschriften und ist nicht als Sicherheitsnorm anzusehen.

Das Original-Dokument enthält Bilder in Farbe, die in der Papierversion in einer Graustufen-Darstellung wiedergegeben werden. Elektronische Versionen dieses Dokuments enthalten die Bilder in der originalen Farbdarstellung.

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Nationaler Anhang NA
(informativ)

Auszugsweise Übersetzung

Reihenfolge und Inhalt der folgenden Abschnitte sind identisch mit denen in den jeweiligen Abschnitten der Englischen Fassung.

1 Anwendungsbereich

Dieser Teil von IEC 61970-600 definiert die Profile, die im Standard für den Austausch von Elektrizitätsversorgungssystemmodellen (en: Common Grid Model Exchange, CGMES) enthalten sind und auf der Normenreihe IEC 61970-450 und den Profilen nach IEC 61968-13 basieren. Dieses Dokument bezieht sich auf die Normenreihe IEC 61970-450 und die Profile nach IEC 61968-13 nur in den Fällen, in denen sie identisch sind. Wenn das referenzierte Profil noch nicht veröffentlicht wurde, enthält dieses Dokument Profildefinitionen und zugehörige Definitionen der Einschränkungen. Wenn das CGMES-Profil eine Einschränkung am referenzierten Profil vornimmt, ist die Einschränkung in diesem Dokument definiert.

Das Betriebsmittelgrenzprofil (EQBD) ist das einzige Profil, das nicht Teil der Normenreihe IEC 61970-450 und der Profile nach IEC 61968-13 ist. Dieses Profil wird abgelehnt, da Änderungen vorgenommen wurden, um es zwischen EQBP und dem Betriebsmittelprofil (EQ) auszurichten. Obwohl das aktualisierte EQBD die Anforderung behandelt, dass sich eine Grenze auch in einer Station befinden kann, was bei vielen Verteilungsnetzbetreibern (DSOs) der Fall sein wird, müssten weitere Informationen ausgetauscht werden. Zum Beispiel erfordern Systemintegritäts-Schutzprogramme, die von mehreren Versorgungsunternehmen geteilt werden können, einen anderen Weg der Grenzhandhabung. In diesem Dokument ist EQBD nur im CGMES enthalten, um eine bessere Rückwärtskompatibilität mit den früheren Versionen des CGMES zu erhalten.

Die maschinenlesbare Dokumentation, die die modellorientierte Entwicklung der in diesem Teil definierten Profile unterstützt, wird als Schema des Ressourcen-Beschreibungssystems (RDFS) nach IEC 61970-501:2006 (mit einigen Erweiterungen) und IEC 61970-501:ED2 bei Veröffentlichung erstellt.

3 Begriffe und Abkürzungen

Für die Anwendung dieses Dokuments gelten die folgenden Begriffe.

ISO und IEC stellen terminologische Datenbanken für die Verwendung in der Normung unter den folgenden Adressen bereit:

– IEC Electropedia: verfügbar unter http://www.electropedia.org/

– ISO Online Browsing Platform: verfügbar unter http://www.iso.org/obp

ANMERKUNG Für Begriffe, die nicht im CGMES festgelegt sind, gelten die Begriffe nach IEC CIM 61970.

3.1 Begriffe

3.1.1
Grenzpunkt
BP
Anschlusspunkt zwischen zwei Model Authority Sets, der von beiden zutreffenden Model Authoritys vereinbart wurde

[QUELLE: IEC 61970-600-1]

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3.1.2
Grenzsatz
Satz, der alle Grenzpunkte enthält, die für ein Zusammenführungsmodell benötigt werden

[QUELLE: IEC 61970-600-1]

3.1.3
Verteilung
spezifische Darstellung eines Datensatzes

Anmerkung 1 zum Begriff: Ein Datensatz kann mit mehreren Seriennummern verfügbar sein, die sich auf verschiedene Weisen voneinander unterscheiden, einschließlich natürlicher Sprache, Media Type oder Format, schematische Organisation, zeitliche und räumliche Auflösung. Der Detailgrad in der Verteilung wird durch ein oder mehrere Profile, denen der Datensatz entspricht, definiert.

[QUELLE: IEC 61970-600-1]

3.1.4
Standard für den Austausch von Elektrizitätsversorgungssystemmodellen
CGMES, en: Common Grid Model Exchange Standard
Sammlung von den in der Normenreihe IEC 61970-600 definierten Normen, die den Austausch von Elektrizitätsversorgungssystemmodellen (z. B. Einzelnetzmodell oder gemeinsames Netzmodell) unter Modellstellen (TSO, DSO, usw.) für die Durchführung von koordinierten Dienstleistungssätzen im gleichen Modell entsprechend der Gesetzgebung oder des allgemeinen Datenaustauschs im Rahmen der Systembetriebs-, Systementwicklungs- oder Projekte der Versorgungsunternehmen unterstützen

[QUELLE: IEC 61970-600-1]

3.1.5
Europäische Erweiterungen
Sammlung von Klassen, Attributen und Beziehungen, die sich entweder auf das IEC-CIM-Standardmodell ausweiten oder in diesem definiert sind (Normenreihen IEC 61970-300, IEC 91968-11 und IEC 62325-300)

Anmerkung 1 zum Begriff: Die europäischen Erweiterungen sollen die Anforderungen entsprechend der europäischen Gesetzgebung erfüllen und können daher nicht zwingend auf andere Kontinente angewendet werden. Die weltweite Übernahme dieser Erweiterungen entspricht möglicherweise nicht genau der definierten Erweiterung.

[QUELLE: IEC 61970-600-1]

3.1.6
Profil
Datenmodell zur Beschreibung der Instanzdatei für den Austausch von CIM-Daten

Anmerkung 1 zum Begriff: Ein Profil ist eine Teilmenge von Klassen, Beziehungen und Attributen, die benötigt wird, um einen speziellen Schnittstellentyp zu definieren und auf einem CIM-Datenmodell beruht. Profile können strengere Regeln für Original-Klassen und -Beziehungen festlegen. Ein Profil wird üblicherweise in ein Schema (XSD, RDF, OWL usw.) konvertiert, das zur Erstellung, zum Lesen und zur Validierung von Instanzdateien für den Datenaustausch verwendet werden kann.

Anmerkung 2 zum Begriff: Dieser Begriff darf verwendet werden, um entweder das semantische Modell für die Nutzdaten einer Instanz oder das Syntax-Schema der Nutzdaten einer Instanz zu definieren. Ein Profil darf in XSD-, RDF- und/oder OWL-Dateien beschrieben werden. Die Konformität von Instanzdaten mit einem Profil kann durch Datenaustausch zwischen Anwendungen geprüft werden. Ein Profil ist notwendig, um das kanonische Modell „verwenden“ zu können.

[QUELLE: IEC 61970-600-1]

3.2 Abkürzungen

BP	Grenzpunkt
CIM	Common Information Model (Energiebranche)
CGMES	Standard für den Austausch von Elektrizitätsversorgungssystemmodellen (en: Common Grid Model Exchange Standard)
DL	Diagrammlayout-Profil
DSO	Verteilungsnetzbetreiber (en: Distribution System Operator)

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DY	Dynamikprofil
ENTSO-E	Verband Europäischer Übertragungsnetzbetreiber (en: European Network of Transmission System Operators for Electricity)
EQ	Kern-Betriebsmittelprofil
EQBD	Betriebsmittelgrenzprofil
GL	Standortprofil
HVDC	Hochspannungsgleichstrom (en: High Voltage Direct Current)
IEC	Internationale Elektrotechnische Kommission (en: International Electrotechnical Commission)
IOP	Interoperabilitätsprüfung
ISO	unabhängiger Systembetreiber (en: Independent System Operator)
MAS	Model Authority Set
mRID	CIM Master Resource Identifier
OCL	Objektzusicherungssprache (en: Object Constraint Language)
OP	Betriebsprofil
OWL	Web-Ontologiesprache
RCC	Regionales Koordinationszentrum (en: Regional Coordination Centre)
RDF	Resource Description Framework
RDFS	RDF-Schema
SC	Kurzschlussprofil
SHACL	Formenzusicherungssprache (en: Shapes Constraint Language)
SSH	Steady State Hypothesis-Profil
SV	Zustandsvariablenprofil
TP	Topologieprofil
TSO	Übertragungsnetzbetreiber (en: Transmission System Operator)
URI	Einheitlicher Bezeichner für Ressourcen (en: Uniform Resource Identifier)
UUID	universell eindeutiges Kennzeichen (en: Universally Unique Identifier)
XML	Erweiterbare Auszeichnungssprache
XSD	XML-Schema-Definition

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Interface de programmation d'application pour système de gestion d'énergie (EMS-API) – Partie 600-1: Spécification pour l'échange de modèle de réseau commun (CGMES) – Spécification de profils d'échange (IEC 61970-600-2:2021)

Schnittstelle der Anwendungsprotokolle von Energieverwaltungssystemen (EMS-API) – Teil 600-2: Austausch von Elektrizitätsversorgungssystemmodellen (CGMES) – Spezifikation der Austauschprofile (IEC 61970-600-2:2021)

This European Standard was approved by CENELEC on 2021-07-09. 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.

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

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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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 57/2361/FDIS, future edition 1 of IEC 61970-600-2, 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 IEC 61970-600-2:2021.

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)	2022-04-09
– latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2024-07-09

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Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61970-600-2:2021 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 61970-501:2006	NOTE	Harmonized as EN 61970-501:2006 (not modified).
IEC 61970-552:2016	NOTE	Harmonized as EN 61970-552:2016 (not modified).

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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.

Publication	Year	Title	EN/HD	Year
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 61968-13	–	Application integration at electric utilities – System interfaces for distribution management – Part 13: Common distribution power system model profiles	EN IEC 61968-13	–
IEC 61970-301	2020	Energy management system application program interface (EMS-API) – Part 301: Common information model (CIM) base	EN IEC 61970-301	2020
IEC 61970-302	2018	Energy management system application program interface (EMS-API) – Part 302: Common information model (CIM) dynamics	EN IEC 61970-302	2018
IEC 61970-452	2017	Energy management system application program interface (EMS-API) – Part 452: CIM static transmission network model profiles	EN 61970-452	2017
IEC 61970-453	2014	Energy management system application program interface (EMS-API) – Part 453: Diagram layout profile	EN 61970-453	2014
IEC 61970-456	2018	Energy management system application program interface (EMS-API) – Part 456: Solved power system state profiles	EN IEC 61970-456	2018
IEC 61970-600-1	2021	Energy management system application program interface (EMS-API) – Part 600-1: Common Grid Model Exchange Standard (CGMES) – Structure and rules	EN IEC 61970-600-1	2021

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