# Energy management system application program interface (EMS-API) - Part 600-2: Common Grid Model Exchange Specification (CGMES) - Exchange profiles specification

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD



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|---|---|
| See Eesti standard EVS-EN IEC 61970-600-2:2021 sisaldab Euroopa standardi EN IEC 61970-600-2:2021 ingliskeelset teksti. | This Estonian standard EVS-EN IEC 61970-600-2:2021 consists of the English text of the European standard EN IEC 61970-600-2:2021. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.08.2021. | Date of Availability of the European standard is 06.08.2021. |
| Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest. | The standard is available from the Estonian Centre for Standardisation and Accreditation. |

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 33.200

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN IEC 61970-600-2

August 2021

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English Version

# 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)

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)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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



Ref. No. EN IEC 61970-600-2:2021 E

# 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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## Endorsement notice

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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)

# 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 |

# IEC 61970-600-2

Edition 1.0 2021-06

# INTERNATIONAL STANDARD



colour inside

## Energy management system application program interface (EMS-API) – Part 600-2: Common Grid Model Exchange Standard (CGMES) – Exchange profiles specification

IEC 61970-600-2:2021-06(en)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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# IEC 61970-600-2

Edition 1.0 2021-06

# INTERNATIONAL STANDARD



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## Energy management system application program interface (EMS-API) – Part 600-2: Common Grid Model Exchange Standard (CGMES) – Exchange profiles specification

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# Part 600-2: Common Grid Model Exchange Standard (CGMES) – Exchange profiles specification

## FOREWORD

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International Standard IEC 61970-600-2 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

This first edition cancels and replaces IEC TS 61970-600-2 published in 2017. This edition constitutes a technical revision.

The text of this international standard is based on the following documents:

| FDIS | Report on voting |
|---|---|
| 57/2361/FDIS | 57/2373/RVD |

Full information on the voting for the approval of this international standard can be found in the report on voting indicated in the above table.

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

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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
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# ENERGY MANAGEMENT SYSTEM APPLICATION PROGRAM INTERFACE (EMS-API) –

# Part 600-2: Common Grid Model Exchange Standard (CGMES) – Exchange profiles specification



## 1 Scope

This part of IEC 61970-600 defines the profiles included in the Common Grid Model Exchange Standard (CGMES) that are based on IEC 61970-450-series and IEC 61968-13 profiles. This document refers to the IEC 61970-450-series and IEC 61968-13 profiles only in cases where they are identical. If the referenced profile is not yet published, this document includes the profile definition and related constraints' definitions. In the case where a CGMES profile makes restriction on the referenced profile, the restriction is defined in this document.

The equipment boundary profile (EQBD) is the only profile that is not part of IEC 61970-450-series and IEC 61968-13 profiles. This profile is deprecated as modifications have been made to align between EQBP and the equipment profile (EQ). Although the updated EQBD is addressing the requirement that boundary also can be located inside a substation, which will be the case for many Distribution System Operators (DSOs), additional information would need to be exchanged. For instance, system integrity protection schemes, that can be shared by multiple utility would require another way of boundary handling. In this document EQBD is included in CGMES only to create better backwards compatibility with previous version of the CGMES.

The machine-readable documentation that supports model driven development of the profiles defined in this part are generated as Resource Description Framework Schema (RDFS) according to IEC 61970-501:2006 (with some extension) and IEC 61970-501:ED2 when published.

## 2 Normative references

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.

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

IEC 61968-13, *Application integration at electric utilities – System interfaces for distribution management – Part 13: CIM RDF Model exchange format for distribution*

IEC 61970-301:2020, *Energy management system application program interface (EMS-API) – Part 301: Common information model (CIM) base*

IEC 61970-302:2018, *Energy management system application program interface (EMS-API) – Part 302: Common information model (CIM) dynamics*

IEC 61970-452:2017, *Energy management system application program interface (EMS-API) – Part 452: CIM static transmission network model profiles*