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

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

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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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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- withdrawn,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
- amended.

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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: Common distribution power system model profiles*

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*

IEC 61970-453:2014, *Energy management system application program interface (EMS-API) – Part 453: Diagram layout profile*

IEC 61970-456:2018, *Energy management system application program interface (EMS-API) – Part 456: Solved power system state profiles*

IEC 61970-600-1:2020, *Energy management system application program interface (EMS-API) – Part 600-1: Common Grid Model Exchange Standard (CGMES) – Structure and rules*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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INTERFACE DE PROGRAMMATION D'APPLICATION POUR SYSTÈME DE GESTION D'ÉNERGIE (EMS-API) –

Partie 600-2: Norme pour l'échange de modèle de réseau commun (CGMES) – Spécification des profils d'échange

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Cette première édition annule et remplace l'IEC TS 61970-600-2 parue en 2017. Cette édition constitue une révision technique.

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La version française de cette norme n'a pas été soumise au vote.

Le présent document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série IEC 61970, publiées sous le titre général *Interface de programmation d'application pour système de gestion d'énergie (EMS-API)*, se trouve sur le site web de l'IEC.

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INTERFACE DE PROGRAMMATION D'APPLICATION POUR SYSTÈME DE GESTION D'ÉNERGIE (EMS-API) –

Partie 600-2: Norme pour l'échange de modèle de réseau commun (CGMES) – Spécification des profils d'échange

1 Domaine d'application

La présente partie de l'IEC 61970-600 définit les profils inclus dans la Norme pour l'échange de modèle de réseau commun (CGMES) et qui reposent sur les profils de la série IEC 61970- 450 et de l'IEC 61968-13. Le présent document fait référence aux profils de la série IEC 61970-450 et de l'IEC 61968-13 uniquement lorsqu'ils sont identiques. Si le profil référencé n'est pas encore publié, le présent document inclut sa définition et les définitions des contraintes associées. Lorsqu'un profil de la CGMES impose une restriction sur le profil référencé, cette restriction est définie dans le présent document.

Le profil d'équipement frontière (EQBD) est le seul profil qui ne fait pas partie des profils de la série IEC 61970-450 et de l'IEC 61968-13. Ce profil est déconseillé, des modifications ayant été apportées pour aligner l'EQBP sur le profil d'équipement (EQ). Bien que l'EQBD mis à jour réponde à l'exigence selon laquelle la frontière peut également se trouver à l'intérieur d'un poste, ce qui est le cas pour de nombreux opérateurs de réseaux de distribution (DSO), il est nécessaire d'échanger des informations supplémentaires. Par exemple, les plans de protection de l'intégrité système, qui peuvent être partagés par plusieurs entreprises de services publics, exigent une autre manière de gérer les frontières. Dans le présent document, l'EQBD n'est inclus dans la CGMES que pour améliorer la rétrocompatibilité avec la version antérieure de la CGMES.

La documentation lisible par une machine qui vient à l'appui du développement piloté par modèle des profils définis dans la présente partie est produite sous forme de schéma RDF (RDFS) selon l'IEC 61970-501:2006 (avec des extensions) et l'IEC 61970-501:ED2 après publication.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 61968-11, *Intégration d'applications pour les services électriques – Interfaces système pour la gestion de distribution – Partie 11: Extensions du modèle d'information commun (CIM) pour la distribution*

IEC 61968-13, *Intégration d'applications pour les services électriques – Interfaces système pour la gestion de distribution – Partie 13: Profils de modèle commun de système électrique de distribution*

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

IEC 61970-302:2018, *Interface de programmation d'application pour système de gestion d'énergie (EMS-API) – Partie 302: Régimes dynamiques de modèle d'information commun (CIM)*

IEC 61970-452:2017, *Interface de programmation d'application pour système de gestion d'énergie (EMS-API) – Partie 452: Profils du modèle de réseau de transport statique CIM*

IEC 61970-453:2014, *Interface de programmation d'application pour système de gestion d'énergie (EMS-API) – Partie 453: Profil de disposition de diagramme*

IEC 61970-456:2018, *Interface de programmation d'application pour système de gestion d'énergie (EMS-API) – Partie 456: Profils d'état de réseaux électriques résolus*

IEC 61970-600-1:2020, *Energy management system application program interface (EMS-API) – Part 600-1: Common Grid Model Exchange Standard (CGMES) – Structure and rules* (disponible en anglais seulement)