ICS 91.140.50, 97.120 SLOVENSKÁ TECHNICKÁ NORMA Júl 2022

| STN | **Všeobecné požiadavky na bytové a domové elektronické systémy (HBES) a domové automatizačné a riadiace systémy (BACS)<br>Časť 12-2: Inteligentná sieť<br>Špecifikácia aplikácie<br>Rozhranie a rámec pre zákazníka<br>Rozhranie medzi bytovým/domovým CEM (Customer Energy Manager) a správcom zdrojov<br>Dátový model a zasielanie správ** | **STN<br>EN 50491-12-2**<br><br>36 8055 |
|---|---|---|

General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 12-2: Smart grid - Application specification - Interface and framework for customer - Interface between the Home / Building CEM and Resource manager(s) - Data model and messaging

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/22

Obsahuje: EN 50491-12-2:2022

obsahuje farebné strany

**135132**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 50491-12-2

April 2022

ICS 91.140.50; 97.120

English Version

# General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 12-2: Smart grid - Application specification - Interface and framework for customer - Interface between the Home / Building CEM and Resource manager(s) - Data model and messaging

Exigences générales relatives aux systèmes électroniques pour les foyers domestiques et les bâtiments (HBES) et aux systèmes de gestion technique du bâtiment (SGTB) - Partie 12-2: Réseau intelligent - Spécification d'application - Interface et cadre pour le client - Interface entre le gestionnaire d'énergie pour le client (CEM, Customer Energy Manager) et le gestionnaire de ressources pour foyers domestiques/bâtiments - Modèle de données et échange de messages

Allgemeine Anforderungen an die Elektrische Systemtechnik für Heim und Gebäude (ESHG) und an Systeme der Gebäudeautomation (GA) - Teil 12-2: Smart grid - Anwendungsspezifikation - Schnittstelle und Modell für Anwender - Schnittstelle zwischen dem Heim-/Gebäude CEM und den Ressourcenmanagern - Datenmodell und Informationsaustausch

This European Standard was approved by CENELEC on 2022-02-17. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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 50491-12-2:2022 E

# Contents

Page

# European foreword

This document (EN 50491-12-2:2022) has been prepared by CLC/TC TC 205, “Home and Building Electronic Systems (HBES)”.

The following dates are fixed:

| | | |
|---|---|---|
| • latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2023-02-17 |
| • latest date by which the national standards conflicting with this document have to be withdrawn | (dow) | 2025-02-17 |

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document is part of the EN 50491 series of European Standards — General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS), which will comprise the following parts:

— Part 1: General requirements;

— Part 2: Environmental Conditions;

— Part 3: Electric Safety Requirements;

— Part 4-1: General functional safety requirements for products intended to be integrated in Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS);

— Part 5-1: EMC requirements, conditions and test set-up;

— Part 5-2: EMC requirements for HBES/BACS used in residential, commercial and light industry environment;

— Part 5-3: EMC requirements for HBES/BACS used in industry environment;

— Part 6-1: HBES installations — Installation and planning;

— Part 6-3: HBES installations — Assessment and definition of levels;

— Part 11: Smart Metering — Application Specification — Simple External Consumer Display;

— Part 12: Smart grid — Application specification — Interface and framework for customer;

— Part 12-1: Interface between the CEM and Home/Building Resource manager– General Requirements and Architecture;

— Part 12-2: Interface between the Home/Building CEM and Resource manager(s)– Data model and messaging;

— Future Part 12-3: Home/Building Customer Energy Manager (CEM);

— Future Part 12-4: Resource Manager.

# Introduction

Over recent decades, energy production and its consumption patterns have changed dramatically. Although central energy production is still dominant, the trend for distributed production is distinctive following an increasing number of renewables. Alternative energy sources are highly fluctuating in their production capabilities, which may result in the grid operators having difficulty to keep a balance between energy production and consumption. The complexity of keeping the grid reliable is further increased by the change in the electric energy consumption and production of the customer itself, e.g. the use of electric vehicles and personal generation facilities.

A Smart Grid that allows the grid operator to be flexible and reactive is needed. Such reactivity requires a communication flow between energy consuming and producing entities, from single family houses to large factories.

The EN 50491-12 series describes aspects of the smart grid that relate specifically to the premises (home/building) part of the smart grid and describes the common interface between equipment in the premises and the smart grid. This part 2 of the series defines the fundamental aspects of semantic interoperability for the S2 interface and the related data exchange between a CEM and the Resource Managers within the premises.

Different use cases are explained in Annex A, which should help to understand the philosophy of this document.

# 1 Scope

This document specifies the fundamental aspects of semantic interoperability for the S2 interface and the related data exchange between a CEM and the Resource Managers within the premises. It provides a technology independent set of data models and interaction patterns in order to enable applications for Energy Management within the premises. This document does not include:

— mappings to concrete data representations (XML, JSON and similar);

— mappings to application protocols for the message passing;

— security related aspects.

# 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.

ISO/DIS 15118-20, *Road vehicles — Vehicle to grid communication interface*

ISO 4217, *Codes for the representation of currencies*