



## PRE-RELEASE VERSION (FDIS)

---

**Information technology – Home electronic system (HES) architecture –  
Part 5-12: Intelligent grouping and resource sharing for HES Class 2 and  
Class 3 – Remote access test and verification**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 35.200

**Warning! Make sure that you obtained this publication from an authorized distributor.**



# JTC1-SC25/2854/FDIS

FINAL DRAFT INTERNATIONAL STANDARD (FDIS)

PROJECT NUMBER:  
**ISO/IEC 14543-5-12 ED1**

DATE OF CIRCULATION:  
**2019-01-18**

CLOSING DATE FOR VOTING:  
**2019-03-15**

SUPERSEDES DOCUMENTS:  
**JTC1-SC25/2825A/RVC**

IEC ISO/IEC JTC 1/SC 25 : INTERCONNECTION OF INFORMATION TECHNOLOGY EQUIPMENT	
SECRETARIAT: Germany	SECRETARY: Mr Jürgen Tretter
OF INTEREST TO THE FOLLOWING COMMITTEES:	HORIZONTAL STANDARD: <input type="checkbox"/>
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING	<input checked="" type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is a draft distributed for approval. It may not be referred to as an International Standard until published as such.

In addition to their evaluation as being acceptable for industrial, technological, commercial and user purposes, Final Draft International Standards may on occasion have to be considered in the light of their potential to become standards to which reference may be made in national regulations.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

**Information technology - Home electronic system (HES) architecture - Part 5-12: Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Remote access test and verification**

PROPOSED STABILITY DATE: N/A

NOTE FROM TC/SC OFFICERS:

non

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	5
1 Scope.....	7
2 Normative references.....	7
3 Terms, definitions and abbreviated terms .....	7
3.1 Terms and definitions .....	7
3.2 Abbreviated terms .....	8
4 Conformance.....	8
5 Overview .....	8
5.1 Purpose .....	8
5.2 Test configuration .....	8
5.3 Requirement of verification.....	9
5.4 Test environment .....	9
6 IGRS RA test suite structure .....	9
6.1 Structure overview .....	9
6.2 IGRS RA user conformance test suite.....	10
6.3 IGRS RA device conformance test suite.....	10
6.4 Rules of the test suite .....	11
7 IGRS RA user conformance test suite .....	11
7.1 User register conformance test suite.....	11
7.1.1 Message and flow .....	11
7.1.2 Test case set .....	11
7.2 User login conformance test suite.....	12
7.2.1 Message and flow .....	12
7.2.2 Test case set .....	12
7.3 Relationship establishment conformance test suite .....	12
7.3.1 Message and flow .....	12
7.3.2 Test case set .....	13
7.4 Relationship releasing conformance test suite.....	13
7.4.1 Message and flow .....	13
7.4.2 Test case.....	13
7.5 Device verification code management conformance test suite .....	14
7.5.1 Message and flow .....	14
7.5.2 Test case.....	14
7.6 Device access rights configuration conformance test suite .....	15
7.6.1 Message and flow .....	15
7.6.2 Test case.....	15
7.7 Message exchange conformance test suite .....	16
7.7.1 Message and flow .....	16
7.7.2 Test case set .....	16
7.8 User logout conformance test suite.....	17
7.8.1 Message and flow .....	17
7.8.2 Test case set .....	18
8 IGRS RA device conformance test suite .....	18
8.1 Device registration conformance test suite.....	18

8.1.1	Message and flow .....	18
8.1.2	Test case set .....	18
8.2	Device login conformance test suite.....	19
8.2.1	Message and flow .....	19
8.2.2	Test case set .....	19
8.3	Relationship releasing conformance test suite.....	19
8.3.1	Message and flow .....	19
8.3.2	Test case set .....	20
8.4	Device verification code management conformance test suite .....	20
8.4.1	Message and flow .....	20
8.4.2	Test case.....	20
8.5	Message exchange conformance test suite .....	21
8.5.1	Message and flow .....	21
8.5.2	Test case set .....	21
8.6	Device logout conformance test suite.....	23
8.6.1	Message and flow .....	23
8.6.2	Test case.....	23
Bibliography .....		24
Figure 1 – Environment configuration for IGRS RA conformance test .....		9
Figure 2 – Structure of IGRS conformance test suite .....		10
Table 1 – Test conditions under normal environment .....		9

## INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

### Part 5-12: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Remote access test and verification

#### FOREWORD

- 1) ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.
- 2) The formal decisions or agreements of IEC and ISO on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees and ISO member bodies.
- 3) IEC, ISO and ISO/IEC publications have the form of recommendations for international use and are accepted by IEC National Committees and ISO member bodies in that sense. While all reasonable efforts are made to ensure that the technical content of IEC, ISO and ISO/IEC publications is accurate, IEC or ISO cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees and ISO member bodies undertake to apply IEC, ISO and ISO/IEC publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any ISO, IEC or ISO/IEC publication and the corresponding national or regional publication should be clearly indicated in the latter.
- 5) ISO and IEC do not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. ISO or IEC are not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or ISO or its directors, employees, servants or agents including individual experts and members of their technical committees and IEC National Committees or ISO member bodies for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication of, use of, or reliance upon, this ISO/IEC publication or any other IEC, ISO or ISO/IEC publications.
- 8) Attention is drawn to the normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this ISO/IEC publication may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 14543-5-12 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

The list of all currently available parts of the ISO/IEC 14543 series, under the general title *Information technology – Home electronic system (HES) architecture*, can be found on the IEC website and ISO website.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

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

## INTRODUCTION

ISO/IEC 14543-5 (all parts) specifies the services and protocol of the application layer for intelligent grouping and resource sharing (IGRS) devices and services in the home electronic system. Some parts reference Classes 1, 2 and 3, which are HES designations specified in the HES architecture standard, ISO/IEC 14543-2-1.

ISO/IEC 14543-5 (all parts) includes the following parts.

- ISO/IEC 14543-5-1: Core protocol
  - Specifies the TCP/IP protocol stack as the basis and the HTTP protocol as the message-exchange framework among devices.
  - Specifies a series of device and service interaction/invocation standards, including device and service discovery protocol, device and service description, service invocation, security mechanisms, etc.
  - Specifies core protocols for a type of home network that supports streaming media and other high-speed data transports within a home.
- ISO/IEC 14543-5-21 and ISO/IEC 14543-5-22: Application profile
  - Based on the IGRS core protocol.
  - Specifies a device and service interaction mechanism, as well as application interfaces used in IGRS basic applications.
  - Multiple application profiles are specified, including:
    - i) ISO/IEC 14543-5-21: AV profile
    - ii) ISO/IEC 14543-5-22: File profile
- ISO/IEC 14543-5-3: Basic application
  - Includes an IGRS basic application list.
  - Specifies a basic application framework.
  - Specifies operation details (device grouping, service description template, etc.), function definitions and service invocation interfaces.
- ISO/IEC 14543-5-4: Device validation
  - Defines a standard method to validate an IGRS-compliant device.
- ISO/IEC 14543-5-5: Device type
  - Specifies IGRS device types used in IGRS applications.
- ISO/IEC 14543-5-6: Service type
  - Specifies basic service types used in IGRS applications.
- ISO/IEC 14543-5-7: Remote access system architecture
  - Specifies the architecture and framework for the remote access of IGRS devices and services in the home electronic system. The remote access communications protocol and application profiles are specified in the following parts of ISO/IEC 14543-5:
    - i) ISO/IEC 14543-5-8: Remote access core protocol
    - ii) ISO/IEC 14543-5-9: Remote access service platform
    - iii) ISO/IEC 14543-5-101: Remote media access profile
    - iv) ISO/IEC 14543-5-102: Remote universal management profile
    - v) ISO/IEC 14543-5-11: Remote user interface
    - vi) ISO/IEC 14543-5-12: Remote access test and verification
  - The relationships among these parts are specified in Part 5-7.
- ISO/IEC 14543-5-8: Remote access core protocol

- Provides detailed system components, system function modules, basic concepts of IGRS remote access elements and their relationships, message exchange mechanisms and security related specifications.
- Specifies interfaces between IGRS remote access (RA) client and service platforms. Defines co-operative procedures among IGRS RA clients.
- ISO/IEC 14543-5-9: Remote access service platform
  - Specifies the IGRS RA service platform (IRSP) architectures and interfaces among servers in the service platforms.
  - Based on ISO/IEC 14543-5-8: Remote access core protocol.
- ISO/IEC 14543-5-101 and ISO/IEC 14543-5-102: Remote access application profiles
  - Defines a device and service interaction mechanism for various applications
  - Based on the ISO/IEC 14543-5-8: Remote access core protocol
  - Two profiles have been developed:
    - i) ISO/IEC 14543-5-101: Remote media access profile. This part defines the common requirements for IGRS RA media users and devices in IGRS networks.
    - ii) ISO/IEC 14543-5-102: Remote universal management profile. This part specifies a mechanism for integrating devices with both relatively high and low processing capabilities into IGRS networks. It also specifies universal remote device discovery and a management framework.
  - Additional application profiles will be specified in the future.
- ISO/IEC 14543-5-11: Remote user interface
  - Specifies adaptive user interface generation and remote device control mechanisms suitable for different remote access applications and devices.
- ISO/IEC 14543-5-12: Remote access test and verification
  - Defines a standard method to test and verify IGRS-RA compliant device and service interfaces.

## INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

### Part 5-12: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Remote access test and verification

#### 1 Scope

This part of ISO/IEC 14543

- specifies the test and verification methods for an IGRS remote access (RA) user or device,
- defines the structure of a user and device testing system for IGRS remote access,
- describes and specifies the exchange process between a user or device-under-test with a standard IGRS RA service platform (IRSP), and
- describes and specifies the rules to have validating messages.

This document is applicable to the test and verification of an IGRS RA device or user.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14543-5-8, *Information technology – Home electronic system (HES) architecture – Part 5-8: Intelligent grouping and resource sharing for Class 2 and Class 3 – Remote access core protocol*

ISO/IEC 14543-5-9, *Information technology – Home electronic system (HES) architecture – Part 5-9: Intelligent grouping and resource sharing for Class 2 and Class 3 – Remote access service platform*

IETF RFC 4422, *Simple Authentication and Security Layer (SASL)*