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INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE – Part 5-102: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Remote universal management profile

FOREWORD

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International Standard ISO/IEC 14543-5-102 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.

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

FDIS	Report on voting
JTC1-SC25/2898/FDIS	JTC1-SC25/2908/RVD

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

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

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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 14543-5-2#: 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 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.

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INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

Part 5-102: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Remote universal management profile

1 Scope

This part of ISO/IEC 14543 specifies the system architecture and communication protocols of remote universal management profile to achieve intelligent grouping, resource sharing and service collaboration among different devices and controllers. The protocol features are:

a) remote universal device discovery and management framework that includes connection methods and network architecture, device configuration interfaces, management message formats and message exchange flows;

b) request/response message formats for four remote universal management profile device types: water heater, refrigerator, air conditioner, microwave.

This document is applicable to remote access of water heaters, refrigerators, air conditioners, microwave ovens at home, office or other remote environments, to achieve universal management and interactions among these controllers and devices.

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/IEC 14543-5-1, *Information technology – Home electronic system (HES) architecture – Part 5-1: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Core protocol*

ISO/IEC 14543-5-7, *Information technology – Home electronic system (HES) architecture – Part 5-7: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Remote access system architecture*

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

ISO/IEC 15045 (all parts), *Information technology – Home electronic system (HES) gateway*