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INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

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FOREWORD

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International Standard ISO/IEC 14543-5-8 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 and ISO websites.

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.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The ISO/IEC 14543-5 series of standards 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.

The ISO/IEC 14543-5 series includes the following parts.

- Part 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.
- Parts 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:
    - Part 5-21: AV profile
    - Part 5-22: File profile
- Part 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.
- Part 5-4: Device validation
  - Defines a standard method to validate an IGRS-compliant device.
- Part 5-5: Device type
  - Specifies IGRS device types used in IGRS applications.
- Part 5-6: Service type
  - Specifies basic service types used in IGRS applications.
- Part 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:
    - ISO/IEC 14543-5-8: Remote access core protocol
    - ISO/IEC 14543-5-9: Remote access service platform
    - ISO/IEC 14543-5-101: Remote AV access profile
    - ISO/IEC 14543-5-102: Remote universal management profile
    - ISO/IEC 14543-5-11: Remote user interface
    - ISO/IEC 14543-5-12: Remote access test and verification
  - The relationships among these parts are specified in Part 5-7.

– Part 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.
– Part 5-9: Remote access service platform
  - Specifies the IGRS RA service platform (IRSP) architectures and interfaces among servers in the service platforms.
  - Based on Part 5-8: Remote access core protocol.
– Parts 5-10#: Remote access application profiles
  - Defines a device and service interaction mechanism for various applications.
  - Based on Part 5-8: Remote access core protocol.
  - Two profiles are under development:
    – Part 5-101: Remote AV access profile.[1] This part defines the common requirements for IGRS RA AV users and devices in IGRS networks.
    – Part 5-102: Remote universal management profile.[2] 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.
– Part 5-11: Remote user interface[3]
  - Specifies adaptive user interface generation and remote device control mechanisms suitable for different remote access applications and devices.
– Part 5-12: Remote access test and verification[4]
  - Defines a standard method to test and verify IGRS-RA compliant device and service interfaces.

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[1] Under preparation. Stage at the time of publication: ISO/IEC DIS 14543-5-101:2017.

[2] Under preparation. Stage at the time of publication: ISO/IEC CD 14543-5-102:2016.

[3] Under preparation. Stage at the time of publication: ISO/IEC DIS 14543-5-11:2017.

[4] Under preparation. Stage at the time of publication: ISO/IEC DIS 14543-5-12:2017.

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

1 Scope

This part of ISO/IEC 14543-5 specifies the core protocol of IGRS user and device remote access, including intelligent grouping and resource sharing. The protocol features are:

a) IGRS RA user and IGRS RA device concepts and relationship management mechanisms,

b) user and device remote discovery and online and offline status management mechanisms,

c) user and device remote access message formats and message exchanging flows, and

d) remote data and service distribution and sharing mechanisms.

This document is applicable to remote access of an IGRS sub-network (called an IGRS subnet) for resource sharing and service collaboration among home and/or remote computers, consumer electronics and communication 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 14543-5-9, *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 9594-8|Recommendation ITU-T X.509, *Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks*

IETF RFC 2616, *Hypertext Transfer Protocol – HTTP/1.1*

IETF RFC 2818, *HTTP over TLS*

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

IETF RFC 5246, *The Transport Layer Security (TLS) Protocol – Version 1.2*

IETF RFC 6120, *Extensible Messaging and Presence Protocol (XMPP): Core*

IETF RFC 6121, *Extensible Messaging and Presence Protocol (XMPP): Instant Messaging and Presence*

IETF RFC 7622, *Extensible Messaging and Presence Protocol (XMPP): Address Format*