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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



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CONTENTS

FOREWORD 3
INTRODUCTION 4
1 Scope 6
2 Normative references 6
3 Terms, definitions and abbreviations 6
3.1 Terms and definitions 6
3.2 Abbreviations 7
4 Conformance 8
5 IGRS remote access (RA) system architecture 8
5.1 IGRS RA functionality overview 8
5.2 IGRS RA system structure 8
6 IGRS RA specification framework 10
6.1 IGRS RA specification framework overview 10
6.2 IGRS RA core protocol 10
6.3 IGRS RA service platform protocol 11
6.4 IGRS RA application profiles 12
6.4.1 Overview 12
6.4.2 Remote AV access profile 12
6.4.3 Remote universal management profile 12
6.4.4 Additional application profiles 13
6.5 IGRS remote user interface (RUI) protocol 13
6.6 IGRS RA test and verification protocol 13
7 Security 13
Bibliography 14

Figure 1 – IGRS RA system structure 9
Figure 2 – IGRS RA specification architecture 10
Figure 3 – Structure of IGRS RA service platform 11

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

FOREWORD

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International Standard ISO/IEC 14543-5-7 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

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.

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

- **IGRS 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.
- **IGRS Parts 5-21 and 5-22: Application profiles**
  - Based on the IGRS core protocol.
  - Specify device and service interaction mechanisms, 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
- **IGRS 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.
- **IGRS Part 5-4: Device validation**
  - Defines a standard method to validate an IGRS-compliant device.
- **IGRS Part 5-5: Device type**
  - Specifies IGRS device types used in IGRS applications.
- **IGRS Part 5-6: Service type**
  - Specifies basic service types used in IGRS applications.
- **IGRS 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 following parts of this series:
    - 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 between these parts are specified in this part.

➢ **IGRS Part 5-8: Remote access core protocol** (under consideration)

- Provides detailed system constructions, system function modules, basic conceptions 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.

➢ **IGRS Part 5-9: Remote access service platform** (under consideration)

- Specifies the IGRS RA service platform architectures and interfaces among servers in service platforms.
- Based on the IGRS Part 5-8: Remote access core protocol.

➢ **IGRS Part 5-101 and 5-102: Remote access application profiles** (under consideration)

- Define a device and service interaction mechanism for various applications
- Based on the IGRS Part 5-8: Remote access core protocol
- Two profiles are under development:
  - Part 5-101: Remote AV access profile. This part defines the common requirements for IGRS RA AV users/devices in IGRS networks.
  - Part 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 management frameworks.
- Additional application profiles will be specified in the future.

➢ **IGRS Part 5-11: Remote user interface** (under consideration)

- Specifies adaptive user interface generation and remote device control mechanisms suitable for different remote access applications and devices.

➢ **IGRS Part 5-12: Remote access test and verification** (under consideration)

- Defines a standard method to test and verify IGRS-RA compliant devices and service interfaces.

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

1 Scope

This part of ISO/IEC 14543 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 other parts of this series. The relationship among these parts are specified in this standard.

This standard is applicable to the 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, 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 18028-4, *Information technology – Security techniques – IT network security – Part 4: Securing remote access*

ISO/IEC 24767-1, *Information technology – Home network security – Part 1: Security requirements*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
IGRS AS
basic service unit composed of one or multiple IGRS servers

Note 1 to entry: Each IGRS AS (Autonomous System) provides services for a dedicated user/device group and constructs an IGRS RA domain. Different IGRS ASs exchange messages with each other according to the IGRS service platform protocol.

3.1.2
IGRS LAN device
device that conforms to ISO/IEC 14543-5-1 through ISO/IEC 14543-5-6

Note 1 to entry: An IGRS LAN device can join an IGRS remote access (RA) network with the assistance of an IGRS RA agent.