ISO/IEC 14543-5-1

Edition 1.0 2010-02

INTERNATIONAL STANDARD

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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 35.240.67

ISBN 2-8318-1076-0

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FOREWORD

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International Standard ISO/IEC 14543-5-1 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 web site.

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, Intelligent Grouping and Resource Sharing for HES (IGRS), is divided into six parts:

- **IGRS Part 5-1: Core Protocol**
  - Specifies the TCP/IP protocol stack as the basis and the HTTP protocol as the message-exchanging framework among devices.
  - Defines 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 transport within a home.
- **IGRS Parts 5-2#: Application profile** (under consideration)
  - Based on the IGRS Core Protocol.
  - Defines a device and service interaction mechanism, as well as application interfaces used in IGRS Basic Applications.
  - Multiple application profiles are being developed, including:
    - Part 5-21: AV Profile (under consideration)
    - Part 5-22: File Profile (under consideration)
  - Additional application profiles are planned (part numbers to be assigned; these projects are under consideration)
    - Part 5-2w: DVD Profile
    - Part 5-2x:QoS Profile
    - Part 5-2y: DMCP Profile
    - Part 5-2z: Universal Control Profile
- **IGRS Part 5-3: Basic Application** (under consideration)
  - Includes an IGRS basic application list.
  - Defines a basic application framework.
  - Addresses operation specifics (device grouping, service description template, etc.), function definitions, and service invocation interfaces.
- **IGRS Part 5-4: Device Validation** (under preparation)
  - Defines a standard method to validate an IGRS-compliant device.
- **IGRS Part 5-5: Device Types** (under consideration)
  - Defines IGRS Device types used in IGRS applications.
- **IGRS Part 5-6: Service Types** (under consideration)
  - Defines basic service types used in IGRS applications.

INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

Part 5-1: Intelligent grouping and resource sharing for Class 2 and Class 3 – Core protocol

1 Scope

This part of the ISO/IEC 14543 specifies the services and protocol of the application layer for use by IGRS Devices in the Home Electronic System. An IGRS Device (Intelligent Grouping and Resource Sharing Device) includes the communications protocol specified in the multiple parts of ISO/IEC 14543-5. The objective of this standard is to enable resource sharing and service collaboration among devices. This standard describes:

- the interoperability mechanism;
- the process and messaging format of device discovery and device grouping;
- the process and messaging format of resource sharing among IGRS Devices;
- IGRS Device and service description requirements.

This standard is applicable to resource sharing and service collaboration among computers, consumer electronics, and communication devices in a Local Area Network (LAN) or Personal Area Network (PAN) environment, especially in a wireless dynamic network.

2 Normative references

The following referenced documents are indispensable for the application 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.

The provisions of the referenced specifications other than ISO/IEC, IEC, ISO and ITU documents, as identified in this clause, are valid within the context of this International Standard. The reference to such a specification within this International Standard does not give it any further status within ISO or IEC. In particular, it does not give the referenced specification the status of an International Standard.

ISO/IEC 9594-8:2005, *Information technology – Open Systems Interconnection – The directory: Public-key and attribute certificate frameworks*

ISO/IEC 10118-3:2004, *Information technology – Security techniques – Hash-functions – Part 3: Dedicated hash-functions*

ISO/IEC 18033-3, *Information technology – Security techniques – Encryption algorithms – Part 3: Block ciphers*

ISO/IEC 19790, *Information technology – Security techniques – Security requirements for cryptographic modules*

ISO/IEC 29341-1:2008, *Information technology – UPnP Device Architecture – Part 1: UPnP Device Architecture Version 1.0*

IEEE 1363:2000, *Standard Specifications For Public Key Cryptography*

IETF RFC 1510: *The Kerberos Network Authentication Service (V5)*

IETF RFC 1766: *Tags for the Identification of Languages*

IETF RFC 2234: *Augmented BNF for Syntax Specifications: ABNF*

IETF RFC 2616: *Hypertext Transfer Protocol -- HTTP/1.1*

IETF RFC 2774: *An HTTP Extension Framework*

IETF RFC 3447: *Public-Key Cryptography Standards (PKCS) #1: RSA Cryptography Specifications Version 2.1*

W3C-REC-XML-1998-210:1998, *Extensible Markup Language (XML) 1.0*

W3C SOAP 1.2: *Simple Object Access Protocol Version 1.2*
http://www.w3.org/2002/12/soap-envelope

W3C WSDL 2.0: *Web Service Description Language Version 2.0*
http://www.w3.org/TR/wsdl20/