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Responsible committee: IST/6 Data communications

Interested committees:

Title: BS ISO/IEC 14543-5-103 Information technology – Home Electronic System (HES) architecture – Part 5-103: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – RA smart audio interconnection profile

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- iii) requires additional national guidance or information

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This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



JTC1-SC25/3048/CD

COMMITTEE DRAFT (CD)

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SECRETARIAT:

Germany

SECRETARY:

Mr Marco Peter

OF INTEREST TO THE FOLLOWING COMMITTEES:

TC 23, SEG 9

PROPOSED HORIZONTAL STANDARD:

☐

Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☐ SAFETY

This document is still under study and subject to change. It should not be used for reference purposes.

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 5-103: Intelligent grouping and resource sharing for HES Class 2 and Class 3 – RA smart audio interconnection profile

NOTE FROM TC/SC OFFICERS:

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**INFORMATION TECHNOLOGY –
HOME ELECTRONIC SYSTEM (HES) Architecture –
ISO/IEC 14543**

**Part 5-103: Intelligent Grouping and Resource Sharing for HES Class 2
and Class 3 – RA Smart audio interconnection profile**

FOREWORD

- 1) ISO (International Organisation for Standardisation) and IEC (International Electrotechnical Commission) form the specialised system for worldwide standardisation. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organisation to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organisations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.
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This committee draft standard ISO/IEC 14543-5-103 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 (all parts), under the general title *Information technology – Home Electronic System (HES) architecture*, can be found on the IEC web site and ISO web site.

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

105 INTRODUCTION

106 ISO/IEC 14543-5 (all parts) specifies the services and protocol of the application layer for
 107 Intelligent Grouping and Resource Sharing (IGRS) devices and services in the Home
 108 Electronic System (HES). Some parts reference Classes 1, 2 and 3, which are HES
 109 designations specified in the HES architecture standard, ISO/IEC 14543-2-1.

110 ISO/IEC 14543-5 includes the following parts:

111 ➤ **ISO/IEC 14543-5-1: Core protocol**

- 112 • Specifies the TCP/IP protocol stack as the basis and the HTTP protocol as the
 113 message-exchange framework among devices.
- 114 • Specifies a series of device and service interaction/invocation standards, such as
 115 device and service discovery protocol, device and service description, service
 116 invocation and security mechanisms.
- 117 • Specifies core protocols for a type of home network that supports streaming media
 118 and other high-speed data transports within a home.

119 ➤ **ISO/IEC 14543-5-2#: Application profile**

- 120 • Based on the IGRS Core Protocol.
- 121 • Specifies a device and service interaction mechanism, as well as application
 122 interfaces used in IGRS basic applications.
- 123 • Multiple application profiles are specified, including:
 - 124 • ISO/IEC 14543-5-21: AV profile
 - 125 • ISO/IEC 14543-5-22: File profile

126 ➤ **ISO/IEC 14543-5-3: Basic application**

- 127 • Includes an IGRS basic application list.
- 128 • Specifies a basic application framework.
- 129 • Specifies operation details (device grouping, service description template, etc.),
 130 function definitions and service invocation interfaces.

131 ➤ **ISO/IEC 14543-5-4: Device validation**

- 132 • Specifies a standard method to validate an IGRS-compliant device.

133 ➤ **ISO/IEC 14543-5-5: Device type**

- 134 • Specifies IGRS Device types used in IGRS applications.

135 ➤ **ISO/IEC 14543-5-6: Service type**

- 136 • Specifies basic service types used in IGRS applications.

137 ➤ **ISO/IEC 14543-5-7: Remote access system architecture**

- 138 • Specifies the architecture and framework for remotely accessing IGRS devices and
 139 services in the Home Electronic System. The remote access communications protocol
 140 and application profiles are specified in the following parts of this series:
 - 141 • ISO/IEC 14543-5-8: Remote access core protocol
 - 142 • ISO/IEC 14543-5-9: Remote access service platform
 - 143 • ISO/IEC 14543-5-101: Remote media access profile
 - 144 • ISO/IEC 14543-5-102: Remote universal management profile

- 145 • ISO/IEC 14543-5-103: RA Smart audio interconnection profile
- 146 • ISO/IEC 14543-5-104: RA server-based smart lock application
- 147 • ISO/IEC 14543-5-105: RA server-based smart lock application test and verification
- 148 • ISO/IEC 14543-5-11: Remote user interface
- 149 • ISO/IEC 14543-5-12: Remote access test and verification
- 150 • ISO/IEC 14543-5-13: RA Smart home device control using voice recognition
- 151 • ISO/IEC 14543-5-141: Blockchain application protocols for HES based on IGRS RA
- 152 specifications: core framework
- 153 • The relationships among these parts are specified in part 5-7.

154 ➤ **ISO/IEC 14543-5-8: Remote access core protocol**

- 155 • Provides detailed system components, system function modules, basic concepts of
- 156 IGRS remote access elements and their relationships, message exchange
- 157 mechanisms and security related specifications.
- 158 • Specifies interfaces between IGRS Remote Access (RA) client and service platforms.
- 159 Defines co-operative procedures among IGRS RA clients.

160 ➤ **ISO/IEC 14543-5-9: Remote access service platform**

- 161 • Specifies the IGRS RA Service Platform (IRSP) architectures and interfaces among
- 162 servers in the service platforms.
- 163 • Based on ISO/IEC 14543-5-8: Remote Access Core protocol.

164 ➤ **ISO/IEC 14543-5-10#: Remote access application profiles**

- 165 • Specifies a device and service interaction mechanism for various applications.
- 166 • Based on ISO/IEC 14543-5-8: Remote Access Core protocol.
- 167 • Some of the profiles are under development, including:
 - 168 • ISO/IEC 14543-5-101: Remote media access profile. This part specifies the
 - 169 common requirements for IGRS RA media users and devices in IGRS networks.
 - 170 • ISO/IEC 14543-5-102: Remote universal management profile. This part specifies a
 - 171 mechanism for integrating devices with both relatively high and low processing
 - 172 capabilities into IGRS networks. It also specifies universal remote device discovery
 - 173 and a management framework.
 - 174 • ISO/IEC 14543-5-103: RA Smart audio interconnection profile. This part specifies
 - 175 the interoperability requirements for smart audio devices (audio devices with built-
 - 176 in computing and communication capabilities) and creates various application
 - 177 functionalities to enhance these audio devices. This standard introduces some new
 - 178 device types and specifies the mandatory device/service discovery, device control,
 - 179 content delivery and audio transcoding methods and interfaces, etc. to enable
 - 180 smart audio device interactions and content services.
 - 181 • ISO/IEC 14543-5-104: RA server-based smart lock application. This part specifies
 - 182 a server-based smart lock application that utilizes the ISO/IEC 14543-5 series of
 - 183 standards for device interoperability. This standard specifies the required device
 - 184 interaction models, message formats and APIs and the authentication and security
 - 185 methods.
 - 186 • ISO/IEC 14543-5-105: RA server-based smart lock application test and verification.
 - 187 This part is the verification test specification for ISO/IEC 14543-5-104. It describes
 - 188 all the required test cases and relevant pass/fail criteria to validate that a server-
 - 189 based smart lock device/application conforms to the ISO/IEC 14543-5 series of
 - 190 standard protocols (IGRS).
 - 191 • Additional application profiles will be specified in the future.

192 ➤ **ISO/IEC 14543-5-11: Remote user interface**

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

195 ➤ **ISO/IEC 14543-5-12: Remote access test and verification**

- 196 • Specifies a standard method to test and verify IGRS-RA compliant device and service
197 interfaces.

198 ➤ **ISO/IEC 14543-5-13: RA Smart home device control using voice recognition**

- 199 • Specifies the requirements to allow remote access and control of various smart home
200 devices that use the same IGRS RA device interoperability protocols with a variety of
201 voice recognition platforms. This standard extends current IGRS RA device types to
202 support the addition of voice recognition message format specifications. It introduces
203 an IGRS RA voice-enabled gateway profile in compliance with the HES gateway
204 (ISO/IEC 15045 series) and the IGRS RA platform. It extends the HES environment to
205 an external voice recognition service platform (“cross-platform” voice recognition
206 interface platform) that includes specifications for universal voice recognition skill sets
207 and translation interface service, platform security, IGRS RA (IGRS Remote Access
208 Service Platform) message server API, and IGRS RA device control protocol parsing
209 and status update service, etc.

210 ➤ **ISO/IEC 14543-5-14#: Blockchain application protocols for HES based on IGRS RA
211 specifications**

- 212 • Specifies a blockchain application framework and profiles for various smart home HES
213 applications.
- 214 • Based on the ISO/IEC 14543-5-8: Remote Access Core protocol.
- 215 • Some of the profiles are under development, including ISO/IEC 14543-5-141:
216 Blockchain application protocols for HES based on the IGRS RA specifications: core
217 framework. This is the first in a series of standards that specifies a blockchain
218 application framework to enhance the HES architecture using IGRS RA protocols.
219 Blockchain technology provides additional data storage protection and a trusted
220 authentication mechanism that includes a secure data exchange process. This
221 standard specifies the core framework requirements that establish a reference system
222 architecture, interaction model, blockchain identity authentication, blockchain
223 encryption-method requirements, generic data format template, RA server interface
224 and configuration specification.