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**ISO/IEC JTC 1/SC 25
INTERCONNECTION OF INFORMATION TECHNOLOGY EQUIPMENT
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ISO/IEC JTC 1/SC 25 BUSINESS PLAN

INTERCONNECTION OF INFORMATION TECHNOLOGY EQUIPMENT.

PERIOD COVERED:

15th October 2012 to 25th September 2013

SUBMITTED BY:

Dr. Walter P. von Pattay (Secretary SC 25) and as updated with help of conveners of WG 1, WG 3, WG 4 and PTTT, expecting input from the 23rd plenary of SC 25, 2012-09-14, Geneva, Switzerland.

1 MANAGEMENT SUMMARY

1.1 JTC 1/SC 25 STATEMENT OF SCOPE and membership

Scope as it would read based on the proposed resolution of comments

Standardization of microprocessor systems; and of interfaces, protocols, architectures and associated interconnecting media for information technology equipment and networks, generally for commercial and residential environments, to support embedded and distributed computing environments, storage systems, other input/output components, home and building electronic systems including customer premises smart grid applications for electricity, gas, water and heat.

NOTE: This scope includes requirements for components, assemblies and subsystems. However, standardization of cables, waveguides and connectors remains within the relevant product technical committees and subcommittees of IEC. The scope includes the development of network interfaces, in liaison with committees for external utility networks, to support smart grid applications at the customer premises..

With the explicit mentioning of electricity, gas, water and heat and its co-operative modus operandi in the updated scope SC 25 shows its contribution to the upcoming energy change.

Presently SC 25 has the following membership

29 P-Members: Austria (OVE), Australia (SA), Belgium (NBN), Canada (SCC), China (CESI), Czech Republic (UNMZ), Denmark (DS), Finland (SFS), France (UTE), Germany (DKE), Ireland (NSAI), India (BIS), Israel (SII), Italy (CEI), Japan (JISC), Lebanon (LIBNOR), Republic of Korea (KATS), Kazakhstan (KAZMEMST), Mexico (DGN), The Netherlands (NEC), , Norway (NEK), Poland (PKN), Russian Federation(), Singapore (SPRING), Spain (AENOR), Sweden (SEKOM), Switzerland (ELECTROSUISSE), United Kingdom (BSI), U.S.A. (ANSI)

19 O-Members: Argentina (IRAM), , Colombia (ICONTEC), Croatia (HZN),Cuba (NC), Ghana (GSB), Greece (ELOT), Hong Kong (ITCHKSAR), Hungary (MSZT), Iceland (IST), Indonesia (BSN), Kenya (KEBS), Malaysia (DSM), New Zealand (SNZ), Philippines (BPS), Romania (ASRO), Serbia (ISS), Turkey (TSE), Ukraine (DSSU).

1.3 PROJECT REPORT

A complete listing of the Projects including published Standards and Technical Reports can be found in the systems of IEC and ISO.

At the end of the Report Period, there were 266 (ISO count) and 265 (IEC count) respectively publications (excluding consolidated editions) and 41 and 46 respectively active and approved projects assigned to JTC 1/SC 25..

Of these, 65 / 66 published IEC or ISO/IEC Standards, Technical Reports, Amendments and Corrigenda.5 documents with 111, pages were published from November last year to mid September of this year.

1.4 CO-OPERATION AND COMPETITION

Due to the diverse spectrum of activities the mode of operation and liaisons differ considerably between the three WGs and PTTT of SC 25.

A detailed list of liaisons is provided in SC 25 N 2015 (planned).

WG 1:

WG 1 maintains formal and informal liaisons through overlapping membership in the following standards bodies:

ISO/IEC JTC 1/SC 25/WG 3, Customer premises Cabling
ISO/IEC JTC 1/SC 6/WG 3, Physical Layer
ISO/IEC JTC 1/SC 22, Programming Languages, their Environments and Systems Software Interfaces
ISO/IEC JTC 1/SC 27, Information Security Techniques
ISO/IEC JTC 1/SC 32, Data Management and Interchange
ISO/IEC JTC 1/SC 36, Information Technology for Learning, Education, and Training
IEC PC 118, Smart Grid User Interfaces
IEC TC 57 Power System Management and Associated Information Exchange (pending)
IEC TC 59 Performance of Household and similar Electrical Appliances (pending)
IEC SC 86C, Fibre Optics
IEC TC 65, SC65C, Field Bus
IEC TC 79, Alarm Systems
IEC SC 77B/WG 5 Mains Signalling,
IEC TC100, Audio/Video
IEC ACOS WG1, Safety in HES
ISO TC 205/WG 3, Building Automation and Protocols
CENELEC TC205 WG5 Gateways
CENELEC TC205 WG 16, Monitor Single Residential Environment in Europe
ITU-T, SG-9, Video Distribution
Broadband Forum (formerly called DSL Forum)
GridWise Architecture Council
Smart Grid Interoperability Panel
UPnP Forum

WG 3:

Co-operation with committees developing applications for cabling, i. e. SC 25/WG 1, SC 25/WG 4, IEEE 802.3, ETSI ATTM, IEC SC 65C, TC 100/TA5 and /TA9, ITU-T and JTC 1/SC 6 to gain early knowledge about their needs and to inform them on cabling performance expected in the future.

Continue collaboration with IEC components committees, like TC 46, TC 48, and TC 86 and their subcommittees providing the material cabling is made from, with committees that specify environmental conditions and EMC like CISPR/SC I, and the test methods for its performance to the extent of joint development of international standards.

Continue the intensive exchange of information with CENELEC, ETSI and TIA, in order to keep content of international and regional standards as close as necessary and possible.

Co-operation with IEC SC 65C and IEC TC 86 continues either to amend publications that have been developed jointly or to revise them.

WG 4:

WG 4 maintains liaisons with JTC 1 committees working on network standards, and with IEC committees working on component as well as on multimedia standards.

IEC SC 86C, Fibre Optics
IEC SC 86B,
IEC TC 65, SC65C, Field Bus

PTTT:

Project team taxonomy and terminology has established working relationship with ITU-T.

2.0 PERIOD REVIEW

2.1 MARKET REQUIREMENTS

Developments in WGs and PTTT

The home systems industry is in an active phase of commercialisation. Renewed attention by industry, consumers and governments in energy management, conservation, and greenhouse gas emissions, renewable sources of energy, energy storage, transactive energy (for grid stability), electric vehicle interconnection with home networks and the “smart grid” will further expand the market for home networking applications. Home networks using structured cabling specified by SC 25 in ISO/IEC 15018 are now routinely offered for many new home constructions and renovations. Wireless and power line carrier technologies are facilitating the introduction of networks into existing homes. Home networks can support the emerging market for televisions with Internet connectivity to receive Internet TV (IPTV). Homes are increasingly equipped with home systems meeting HES standards ISO/IEC 14543-x-y series that support competitive markets and interoperability of products from different sources within its sub-series. This series was extended to include a wireless protocol optimised for energy harvested by devices such as sensors. Standards for remote access and management of home equipment are being developed. Products meeting these specifications have been well received by the market and enable smart grids to interact with intelligent homes. (It should be noted that homes are made intelligent with interconnected sensors, actuators and smart consumer appliances. Such networks use a variety of media: IT cabling, wireless and power line communication. In addition SC 25 seeks to facilitate system interoperability beyond the sub series within ISO/IEC 14543 by continuing development of subsequent parts to the SC 25 standards for the residential gateway (ISO/IEC 15045) and product interoperability (ISO/IEC 18012). The energy management model published as a Technical Report (ISO/IEC 15067-3) has been upgraded to a standard. Proposals for additional standards to specify an architecture for distributed energy resources are being considered. SC 25 is pursuing projects that foster seamless delivery of applications developed for home and public networks. The interconnection of public networks with home networks poses risks for consumer privacy, safety, and security. These issues are included in relevant sections of the residential gateway and application interoperability standards. In addition SC 25 has published a two-part standard for “Home Network Security” and revised a Technical Report on safety to a standard (ISO/IEC 14762: Information technology - Home and Building Electronic Systems (HBES) - Guidelines for functional safety).

A series of standards for wireless home network communications (ISO/IEC 29145, WiBEEM Standard for Wireless Home Network Services) are expected published soon. This is a radio technology for home control that is superior to other RF technologies because it offers quality-of-service and longer, battery life, network expandability and device mobility.

Work continues on “Home Network Resource Management” (HNRM) (ISO/IEC 30100). Home resource management allows uniform fault processing, diagnostics and configuration management of HES elements in a home environment. Among the elements that may be managed with this protocol are:

- A server operated by a home network service provider.
- A server operated by the management office of an apartment complex.
- A home residential gateway or set-top box.
- A NWIP and CD for extending the HES architecture series 14543 for Echonet Lite was proposed by WG 1. A NWIP for IGRS version 2 for remote access has been approved. A NWIP for a modular communications interface for energy management has been approved.
- The UPnP Architecture that was approved under the fast track procedure and published as ISO/IEC 29341 in 2008 has been updated and extended under the JTC 1 PAS transposition procedures in 2011 and will be further maintained and extended. WG 1 completed multiple parts of a series of standards to add IGRS (Intelligent Grouping and Resource Sharing) to the HES Architecture as ISO/IEC 14543-5-y that specifies comparable functions.

The market for office cabling had accepted the principles of generic cabling as specified in ISO/IEC 11801:1995 and drove the enhancement of the cabling performance to a new edition of ISO/IEC 11801:2002-09. The great market acceptance of ISO/IEC 11801 resulted in further development of components used to implement these cabling systems as well as the applications that make use of balance copper channels. Two amendments to ISO/IEC 11801:2002 that specify channels, links and on the contribution of components to these channels and links up to 1 GHz have been published and provide planning confidence for application committees and users. To meet the increasing demand to use the IT-cabling to feed power to other DTEs a technical report has been published that gives appropriate guidance also for existing installations. Intensive dialogues with the committees responsible for applications and for components are conducted.

The success of generic cabling in the office environment asked for appropriate standards also for other premises. SC 25 responds swiftly. By now cabling standards for homes, developed in consultation with IEC TC 100 and industrial premises, developed in a joint activity with IEC SC 65C and data centres have been published.

In support of the recently approved new IEEE 802.3 activity for so-called "next generation cabling", the development of ISO/IEC TR 11801-99-1 on cabling in support of at least 40 Gbit/s over twisted pair has been started.

ISO/IEC 15018, the cabling standard for homes that includes the support of a group of applications described by the term "commands, controls and communications in buildings", of IT and of multimedia cabling shows to be supportive to the advance the market penetration for intelligent homes.

A revision of all generic cabling standards (addressing offices, industrial premises, homes and data centres) has just been started and will take into account the requirements of the upcoming 40 Gbit/s specification; this will further develop the work done in ISO/IEC TR 11801-99-1 into a fully fledged International Standard. Besides that, the previously stand-alone standards will become a series of IS, that refers to a common set of basic specifications.

With the success of generic cabling users become more and more interested in automated documentation and management of passive and active IT cabling infrastructure, that can even be integrated into facility management software tools. In response to this market demand, a new project ISO/IEC 18598 has been started to define the properties and minimum requirements of such systems.

The market for systems and peripherals has been enhanced by wide acceptance of information technology interfaces within the scope of SC 25. These standards are typically developed by INCITS, IEEE and other technical committees and internationally standardized by SC 25. In addition standards for certain specialized peripherals originate within other national organisations (e.g. SCSI Optical Memory Card Reader/Writers with an interface command set definition originating in Japan) which are then proposed for international standardisation within SC 25.

WG 4 international standards are some of the most widely used IT standards in the world. All storage systems interfaces, copper or fibre optics, for HDDs, SSDs, tape, USB "flash", PCIEx, optical, and similar devices are specified by WG4. The floating point standard originally developed as IEEE 754 and published as IEC 60559, is used in almost all major CPUs.

PTTT is a project team that has been established in response to the request from JTC 1 to take the lead in co-ordinating the standardisation activities for intelligent homes. PTTT has three meetings with good participation in connection with the SC 25 plenaries in September 2007, October 2008 and September 2009. A taxonomy tool to find areas where specifications are missing or overlapping is published (DTR 29107). The terminology project (PDTR 29108) collects and defines terms used in specifications for intelligent homes is on its way. The taxonomy and the terminology projects are expected to greatly help SC 25 in their co-ordination activities.

Fast track documents

The ISO/IEC 14908 series for control systems in buildings approved by Fast Track and prepared for publication with considerable effort by SC 25 have been handed over to ISO TC 205 as directed by ISO TMB. ISO TC 205 changed titles and scopes and put them to a vote that made them fail. SMB moved them back to JTC 1 where they were approved by a majority of 76 % facing JTC 1 with the challenge of having two approved versions of the same specification. By now the project has been handed over to JTC 1/SC 6.

One of the two proposals under the MOU with IEEE that had failed in the first attempt was resubmitted after being updated by IEEE and published last year after a positive vote in SC 25. This process took 31 months. The second project is still being expected as IEEE considers the replacement of a reference to a US standard with a reference to the international standard with identical content as a technical change that has to go through the whole IEEE process. It should be noted that in the normal process this would be an editorial question that can be solved in most cases within hours. These examples show the clumsiness of this procedure. The normal procedure is faster and allows to harvest the added value provided by the commenting countries while it is not appreciated in this special procedure.

Other fast track documents have lost much time during the preparation time for the publication showing again that the fast track procedure in most cases is not faster than the normal process. For example ISO/IEC 14543-3-10 took less than 14 months from NWIP to publication.

2.2 ACHIEVEMENTS

SC 25 has developed and maintains the following Standards and Technical Reports. **All changes since Geneva 2013 are marked yellow.**

ISO 9314-1: 1989-12	IT - Fibre Distributed Data Interface (FDDI) - Part 1: Token Ring Physical Layer Protocol (PHY) [31 pages]
ISO 9314-2: 1989-12	IT - Fibre Distributed Data Interface (FDDI) - Part 2: Media Access Control (MAC) [67 pages]
ISO 6951: 1968	IT -Processor system bus interface (Eurobus A) [54 pages]
ISO/IEC 9314-3: 1990-12	IT - Fibre Distributed Data Interface (FDDI) - Part 3: Physical Layer Medium Dependent (PMD) [470 pages]
ISO/IEC 9314-4: 1999-10	IT - Fibre Distributed Data Interface (FDDI) - Part 4: Single-mode fibre physical layer medium dependent (SMF-PMD) [52 pages]
ISO/IEC 9314-5: 1995-02	IT - Fibre Distributed Data Interface (FDDI) - Part 5: Hybrid Ring Control (FDDI HRC) [108 pages]
ISO/IEC 9314-6: 1998-08	IT - Fibre Distributed Data Interface (FDDI) - Part 6: Station Management (FDDI SMT) [204 pages]
ISO/IEC 9314-7: 1998-08	IT - Fibre Distributed Data Interface (FDDI) - Part 7: Physical Layer Protocol-2 (FDDI PHY-2) [46 pages]
ISO/IEC 9314-8: 1998-08	IT - Fibre Distributed Data Interface (FDDI) - Part 8: Media Access Control-2 (FDDI MAC-2) [98 pages]
ISO/IEC 9314-9: 2000-06	IT - Fibre Distributed Data Interface (FDDI) - Part 9: Low-cost fibre physical layer medium dependent (LCF-PMD) [42 pages]
ISO/IEC 9314-13: 1998-08	IT - Fibre Distributed Data Interface (FDDI) - Part 13: Conformance Test Protocol Implementation - Conformance Statement Proforma (CT-PICS) [28 pages]
ISO/IEC 9314-20:2001-03	IT - Fibre Distributed Data Interface (FDDI) - Part 20: Abstract Test Suite for FDDI physical medium dependent conformance testing (PMD-ATS) [38 pages]
ISO/IEC 9314-21:2000-10	IT - Fibre Distributed Data Interface (FDDI) - Part 21: Physical Layer Protocol Abstract Test Suite (PHY-ATS) [22 pages]
ISO/IEC 9314-25: 1998-11	IT - Fibre Distributed Data Interface (FDDI) - Part 25: Station Management: Abstract Test Suite (SMT-ATS) [903 pages]
ISO/IEC 9314-26: 2001-04	IT - Fibre Distributed Data Interface (FDDI) - Part 26: Media Access Control Conformance Testing (MAC-ATS) [70 pages]
ISO 9315:1998-12	Information processing systems - Interface between flexible disk cartridge drives and their host controllers [17 pages]
ISO/IEC 9316:1989	IT - Small Computer System Interface-2 (SCSI) [439 pages]
ISO/IEC 9316-2:2000-06	IT - Small Computer System Interface-2 (SCSI-2) – Part 2: Common Access Method (CAM) Transport and SCSI interface module [109 pages]
ISO/IEC 9318-4:2002-12	IT - Intelligent Peripheral Interface - Part 4: Device generic command set for magnetic tape drives [61 pages]
ISO/IEC TR 10192-1:2002-08	IT - Home Electronic System Interfaces, Part 1: Universal Interface (UI) Type 1 [29 pages]
ISO/IEC TR 10192-2:2000-10	IT - Home Electronic System Interfaces, Part 2: Simple Interface Type 1 [11 pages]
ISO/IEC 10859:1997-06	IT - 8-bit backplane interface: STEbus and mechanical core specifications for microcomputers [97 pages] withdrawn 2005-10
ISO/IEC 10861:1994-04	IT - Microprocessor systems - High-performance synchronous 32-bit bus: MULTIBUS II [130 pages]
ISO/IEC 11002:2008-07	IT - Multipath Management API (78 pages)
ISO/IEC 11458:1993-12	IT - Microprocessor systems - VICbus: Inter-crate cable bus [93 pages]
ISO/IEC 11458-am1: 2000-07	IT - Microprocessor systems - VICbus: Inter-crate cable bus / Amendment 1 [3 pages]
ISO/IEC 11518-1:1995-06	IT – High Performance Parallel Interface (HIPPI) - Part 1: Mechanical, Electrical, and Signalling Protocol Specification (HIPPI-PH) [44 pages]

ISO/IEC 11518-2:2000-10	IT – High Performance Parallel Interface (HIPPI) - Part 2: Framing Protocol (HIPPI-FP) [29 pages]
ISO/IEC 11518-3:1996-06	IT - High Performance Parallel Interface (HIPPI) – Part 3: Encapsulation of ISO/IEC 8802-2 (IEEE Std 802.2) Logical Link Control Protocol Data Units (HIPPI-LE) [16 pages]
ISO/IEC 11518-6:2000-06	IT - High Performance Parallel Interface (HIPPI) – Part 6: Physical Switch Control (HIPPI-SC) [23 pages]
ISO/IEC 11518-8:1999-08	IT - High Performance Parallel Interface (HIPPI) - Part 8: Mapping to Asynchronous Transfer Mode (HIPP-ATM) [22 pages] withdrawn 2005-10
ISO/IEC 11518-9:1999-04	IT - High Performance Parallel Interface (HIPPI) – Part 9: Serial Specification (HIPPI-SERIAL) [30 pages]
ISO/IEC 11518-10:2001-03	IT - High Performance Parallel Interface (HIPPI) – Part 10: 6 400 Mbit/s Physical Layer (HIPPI-6400-PH) [68 pages]
ISO/IEC 11801 Ed. 2:2002-09	IT – Generic cabling for customer premises [136 pages]
ISO/IEC 11801 Corr.1: 2002-10 [1 page]	
ISO/IEC 11801 Corr.2: 2002-12 [1 page]	
ISO/IEC 11801 AM1: 2008-04	Amendment 1 to IT – Generic cabling for customer premises [30 page]
ISO/IEC 11801 Edition2.1: 2008-05	IT – Generic cabling for customer premises [151 pages]
ISO/IEC 11801 AM1 C1 Ed.2.0:2008-09-30	Corrigendum 1 - Amendment 1 - IT - Generic cabling for customer premises [2 pages]
ISO/IEC 11801 C3 Ed.2.0:2008-09-30	Corrigendum 3 - IT - Generic cabling for customer premises [4 pages]
ISO/IEC 11801 AM2: 2010-04	Amendment 2 to IT – Generic cabling for customer premises [101 page]
ISO/IEC 11801 AM2 C1: 2010-11	Corrigendum 1 to Amendment 2 to IT – Generic cabling for customer premises [10 page]
ISO/IEC 11801 Edition2.2: 2011-06	IT – Generic cabling for customer premises [190 pages]
ISO/IEC 11989:2010-03	IT - iSCSI management API [198 pages]
ISO/IEC 13187:2011-07-20	IT - Server management command line protocol (SM CLP) specification [159 pages]
ISO/IEC 13213:1994-10	IT - Microprocessor systems - Control and Status registers (CSR) Architecture for microcomputer buses [135 pages]
ISO/IEC 13961:2000-07	IT - Scalable Coherent Interface (SCI) [265 pages]
ISO/IEC 14165-114:2005-04	IT - Fibre Channel – Part 114: 100 MB/s copper physical interface (FC-100-DF-EL-S) (16 Pages)
ISO/IEC 14165-115:2006-02	IT - Fibre Channel – Part 115: Physical Interfaces (FC-PI) (97 Pages)
ISO/IEC 14165-116:2005-08	IT - Fibre Channel – Part 116: 10 Gigabit (10GFC) (85 Pages)
ISO/IEC 14165-116 Am 1:2009-01	IT - Fibre Channel – Part 116: 10 Gigabit (10GFC) Amendment 1 (4 Pages)
ISO/IEC TR 14165-117:2007-09	IT - Fibre Channel – Part 117: Methodologies for Jitter and Signal Quality Specification (MJSQ) (224 pages)
ISO/IEC 14165-122:2005-06	IT - Fibre Channel – Part 122: Arbitrated Loop-2 (FC-AL-2) (141 Pages)
ISO/IEC 14165-122Am1:2008-08	Amendment 1 - Information technology - Fibre channel - Part 122: Arbitrated loop-2 (FC-AL-2) (5 pages)
ISO/IEC 14165-122:2008-11Ed1.1	IT - Fibre Channel – Part 122: Arbitrated Loop-2 (FC-AL-2) (147 Pages)
ISO/IEC 14165-131:2000-05	IT - Fibre Channel - Part 131: Switch Fabric Requirements (FC-SW) [83 pages]
ISO/IEC 14165-133:2010-02	IT - Fibre Channel - Part 133: Fibre Channel Switch Fabric-3 (FC-SW-3) [237 pages]
ISO/IEC 14165-141:2001-06	IT - Fibre Channel - Part 141: Switch Generic Requirements (FC-FG) [24 pages]
ISO/IEC 14165-222:2005-05	IT - Fibre Channel - Part 222: Single-byte command sets-2 mapping protocol (FC-SB-2) (172 pages)
ISO/IEC 14165-241:2005-05	IT - Fibre Channel - Part 241: Backbone 2 (FC-BB-2) [109 pages]
ISO/IEC 14165-243 ed1.0:2012-12	IT - Fibre Channel - Part 243: Fibre Channel Backbone-3 (FC-BB-3) [145 pages]
ISO/IEC 14165-251:2005-05	IT - Fibre Channel - Part 251 - Framing and Signalling (FC-FS) [533 pages]
ISO/IEC 14165-312:2009-08	IT - Fibre Channel - Part 312 - Avionics Environment Upper Layer Protocol MIL-STD-1553B Notice 2 (FC-AE- up 1553) [91 pages]
ISO/IEC 14165-313:2013-02	IT - Fibre Channel - Part 313: Avionics Environment - Anonymous Synchronous Messaging (FC-AE-ASM) [10 pages]

ISO/IEC 14165-314:2013-02	IT - Fibre cChannel - Part 314: Avionics Environment - Remote Direct Memory Access (FC-AE-RDMA) [23 pages]
ISO/IEC 14165-321:2009-11	IT - Fibre Channel - Part 321 - Audio Video (FC-AV) [113 pages]
ISO/IEC 14165-372:2011-02	IT - Fibre Channel - Part 372: Methodologies for Interconnects-2 (FC-MI-2) [63 pages]
ISO/IEC 14165-414:2007-06	IT - Fibre Channel - Part 414: Generic Services - 4 (FC-GS-4) [355 pages]
ISO/IEC 14165-521:2009-01	IT - Fibre Channel - Part 512: Fabric Application Interface Standard (FAIS) [98 pages]
ISO/IEC 14543-2-1: 2006-09	IT - Home Electronic Systems (HES) Architecture - Part 2-1: Introduction and device modularity [21 pages]
ISO/IEC 14543-3-1: 2006-08	IT - Home Electronic Systems (HES) Architecture - Part 3-1: Communication layers- Application layer for HES Class 1 [74 pages]
ISO/IEC 14543-3-2: 2006-08	IT - Home Electronic Systems (HES) Architecture - Part 3-2: Communication layers - Transport, network and general parts of data link layer for HES Class 1 [56 pages]
ISO/IEC 14543-3-3: 2007-01	IT -- Home electronic system (HES) architecture -- Part 3-3: User process for network based control of HES Class 1 [20 pages]
ISO/IEC 14543-3-4: 2007-01	IT -- Home electronic system (HES) architecture -- Part 3-4: System management -- Management procedures for network based control of HES Class 1 [88 pages]
ISO/IEC 14543-3-5: 2007-05	IT -- Home electronic system (HES) architecture -- Part 3-5: Media and media dependent layers -- Power line for network based control of HES Class 1 [39 pages]
ISO/IEC 14543-3-6: 2007-01	IT -- Home electronic system (HES) architecture -- Part 3-6: Media and media dependent layers -- Network based on HES Class 1, twisted pair [80 pages]
ISO/IEC 14543-3-7:2007-01	IT -- Home electronic system (HES) architecture -- Part 3-7: Media and media dependent layers -- Radio frequency for network based control of HES Class 1 [28 pages]
ISO/IEC 14543-3-10:2012-03	IT -- Home electronic system (HES) architecture -- Part 3-10: Wireless short-packet (WSP) protocol optimised for energy harvesting – Architecture and lower layer protocols [28 pages]
ISO/IEC TR 14543-4 TR: 2002-10	IT - Home Electronic System (HES) Architecture, Part 4: Home and building automation in a mixed-use building [13 pages]
ISO/IEC 14543-4-1: 2008-05	IT - Home Electronic System (HES) Architecture, Part 4-1: Communications layers - application layer for the network enhanced control devices of HES Class 1 [47 pages]
ISO/IEC 14543-4-2: 2008-05	IT - Home Electronic System (HES) Architecture, Part 4-2: Communication layers – Transport, network and general parts of data link layer for network enhanced control devices of HES Class 1 [107 pages]
ISO/IEC 14543-5-1:2010-02	IT -- Home electronic system (HES) architecture -Intelligent grouping and resource sharing for HES Class 2 and Class 3 - part 5-1: The protocol [259 pages]
ISO/IEC 14543-5-21:2012-02	IT -- Home electronic system (HES) architecture - Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Part 5-21: Application profile -- AV profile [48 pages]
ISO/IEC 14543-5-22:2010-02	IT -- Home electronic system (HES) architecture - Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Part 5-22: Application profile - File profile [72 pages]
ISO/IEC 14543-5-3:2012-02	IT -- Home electronic system (HES) architecture - Part 5-3: Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Basic application [15 pages]
ISO/IEC 14543-5-4:2010-02	IT -- Home electronic system (HES) architecture - Part 5-4: Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Device validation [112 pages]
ISO/IEC 14543-5-5:2012-02	IT -- Home electronic system (HES) architecture - Part 5-5: Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Device type [13 pages]
ISO/IEC 14543-5-6:2012-02	IT -- Home electronic system (HES) architecture - Part 5-6: Intelligent grouping and resource sharing for HES Class 2 and Class 3 - Service type [279 pages]
ISO/IEC 14575:2000-07	IT - Microprocessor systems - Heterogeneous InterConnect (HIC) (Low-Cost, Low-Latency Scalable Serial Interconnect for Parallel System Construction) [148 pages]
ISO/IEC 14576:1999-12	IT - Synchronous split transfer type system bus (STbus) - Logical layer [81 pages]

ISO/IEC 14709-1: 1997-09	IT - Configuration of customer premises cabling for applications - Part 1: ISDN basic access (16 pages)
ISO/IEC 14709-1-am-1:2004-08:	Amendment 1 to 14709-1: IT - Configuration of customer premises cabling for applications - Part 1: ISDN basic access (9 pages)
ISO/IEC 14709-2: 1998-05	IT - Configuration of customer premises cabling for applications - Part 2: ISDN Primary Access [9 pages]
ISO/IEC 14709-2-am-1:2005-07:	Amendment 1 - Information technology - Configuration of customer premises cabling (CPC) for applications - Part 2: Integrated services digital network (ISDN) primary rate [5 pages]
ISO/IEC 14762: 2009-01	IT – Home Electronic Systems – Guidelines for functional safety [26 pages]
ISO/IEC 14763-1:1999-10	IT - Implementation and operation of customer premises cabling – Part 1: Administration (14 pages)
ISO/IEC TR 14763-1-am-1: 2004-05	Amendment 1 on classes of administration (4 pages)
ISO/IEC 14763-2:2012-02	IT - Implementation and operation of customer premises cabling – Part 2: Planning and installation (144 pages)
ISO/IEC TR 14763-2-1:2011-10	IT - Implementation and operation of customer premises cabling – Part 2-1: Planning and installation – Identifiers within administration systems (34 pages)
ISO/IEC 14763-3:2006-06	IT - Implementation and operation of customer premises cabling - Part 3: Testing of optical fibre cabling (52 pages)
ISO/IEC 14763-3-am1:2009-11	Ed. 1.0 Amendment 1 - IT - Implementation and operation of customer premises cabling - Part 3: Testing of optical fibre cabling (21 pages)
ISO/IEC 14763-3:Ed. 1.1	IT - Implementation and operation of customer premises cabling - Part 3: Testing of optical fibre cabling (75 pages)
ISO/IEC 14776-112:2002-5	IT - Small Computer System Interface-3 (SCSI-3) – Part 112: Parallel Interface-2 (SPI-2) [205 pages]
ISO/IEC 14776-113:2002-8	IT - Small Computer System Interface-3 (SCSI-3) – Part 113: Parallel interface-3 (SPI-3) [271 pages]
ISO/IEC 14776-115:2004-11	IT - Small Computer System Interface-3 (SCSI-3) – Part 115: Parallel Interface-5 (SPI-5); (326 pages)
ISO/IEC 14776-121:2010-11	IT - Small Computer System Interface (SCSI) – Part 121: Passive Interconnect Performance (PIP); (94 pages)
ISO/IEC 14776-150:2004-11	IT - Small Computer System Interface-3 (SCSI-3) – Part 151: SCSI, Serial Attached SCSI (SAS-1.1); (569 pages).
ISO/IEC 14776-151:2010-07	IT - Small Computer System Interface-3 (SCSI-3) – Part 150: SCSI, Serial Attached SCSI (SAS); (451 pages).
ISO/IEC 14776-222:2005-02	IT - Small Computer System Interface-3 (SCSI-3) – Part 222: Fibre Channel Protocol for SCSI, Version 2 (FCP-2); (146 pages).
ISO/IEC 14776-223:2008-05	IT - Small Computer System Interface-3 (SCSI-3) – Part 222: Fibre Channel Protocol for SCSI, Version 3 (FCP-3); (123 pages).
ISO/IEC 14776-232:2001-11	IT - Small Computer System Interface-3 (SCSI-3) – Part 232: Serial Bus Protocol 2 (SBP-2) [93 pages]
ISO/IEC 14776-261 ed1.0 : 2012-11	IT - Small Computer System Interface (SCSI) - Part 261: SAS Protocol Layer (SPL) [674 pages]
ISO/IEC 14776-321:2002-08	IT - Small Computer System Interface-3 (SCSI-3) Part 321: SCSI-3 Block Commands (SBC) [143 pages]
ISO/IEC 14776-322:2007-02	IT - Small Computer System Interface (SCSI) Part 322: SCSI Block Commands-2 (SBC) [133 pages]
ISO/IEC 14776-326:2002-08	IT - Small Computer System Interface-3 (SCSI-3) Part 326: Reduced Block commands (RBC) [36 pages]
ISO/IEC 14776-326:2009-11	Corrigendum 1 to ISO/IEC 14776-326:2002-08 (RBC) [6 pages]
ISO/IEC 14776-331:2002-09	IT - Small Computer System Interface-3 (SCSI-3) Part 331: Part 331: Stream Commands (SSC) [95 pages]
ISO/IEC 14776-341:2000-06	IT - Small Computer System Interface-3 (SCSI-3) – Part 341: Controller Commands (SCC) [134 pages]
ISO/IEC 14776-342:2000-06	IT - Small Computer System Interface (SCSI-3) – Part 342: Controller Commands-2 (SCC-2) [178 pages]

ISO/IEC 14776-351:2007-01	IT - Small Computer System Interface-3 (SCSI-3) -- Part 351: Medium Changer Commands (SCSI-3 SMC) [54 pages]
ISO/IEC 14776-362:2006-04	IT - Small Computer System Interface (SCSI-3) – Part 362: Multimedia Commands-2 (MMC-2) [313 pages]
ISO/IEC 14776-372:2011-10	IT - Small Computer System Interface (SCSI) – Part 372: Enclosures Services-2 (SES-2) [109 pages]
ISO/IEC 14776-381:2000-06	IT - Small Computer System Interface (SCSI) - Part 381: Optical Memory Card Device Commands (OMC) [11 pages]
ISO/IEC 14776-411:1999-09	IT - Small Computer System Interface (SCSI-3) - Part 411: Architectural Model (SAM) [65 pages]
ISO/IEC 14776-412:2006-10	IT - Small Computer System Interface (SCSI) -- Part 412: Architecture Model -2 (SAM-2) [99 pages]
ISO/IEC 14776-413:2007-02	IT - Small Computer System Interface (SCSI) -- Part 412: Architecture Model -2 (SAM-2) [119 pages]
ISO/IEC 14776-413:2009-06	IT - Small Computer System Interface (SCSI) -- Part 414: SCSI Architecture Model-4 (SAM-4) [140 pages]
ISO/IEC 14776-452:2005-08	IT - Small Computer System Interface-3 (SCSI-3) -- Part 452: Primary Commands-2 (SPC-2); (250 pages).
ISO/IEC 14776-453:2009-12	IT - Small computer system interface (SCSI) - Part 453: Primary commands-3 (SPC-3); (422 pages).
ISO/IEC 15018:2004-06:	IT - Generic cabling for homes (73 pages)
ISO/IEC 15018 Am1:2009-04:	IT - Generic cabling for homes [6 pages]
ISO/IEC TR 15044: 2000-08	IT - Terminology for Home Electronic System (HES) [8 pages]
ISO/IEC 15045-1:2004-01	IT - Home electronic system (HES) gateway - Part 1: A residential gateway model for HES (30 pages)
ISO/IEC 15045-2:2012-07	IT- Home electronic system (HES) gateway - Part 2: Modularity and protocol [30 pages]
ISO/IEC TR 15067-2:1997-08	IT - HES application model - Part 2: Lighting model for HES [12 pages]
ISO/IEC TR 15067-3:2000-10	IT - Home Electronic System – (HES) application model – Part 3: Model of an Energy Management System [18 pages]
ISO/IEC 15067-3: 2012-07	IT - Home electronic system (HES) application model - Part 3: Model of a demand-response energy management system for HES [34 pages]
ISO/IEC TR 15067-4:2001-06	IT - Home Electronic System – (HES) application model – Part 4: Security System for HES [11 pages]
ISO/IEC 15205:2000-06	IT - SBus - Chip and module interconnect bus [96 pages]
ISO/IEC 15776:2001-12	IT- VME64bus - Specification [262 pages]
ISO/IEC 18010:2002-05	IT - Information technology - Pathways and spaces for customer premises cabling [21 pages]
ISO/IEC 18010 Am1:2005-12	Amendment on Multitenant pathways and spaces [22 pages]
ISO/IEC 18012-1:2004-02	IT - Home electronic system - Guidelines for product interoperability - Part 1: Introduction (12 pages)
ISO/IEC 18012-2:2012-07	IT - Home electronic system - Guidelines for product interoperability - Part 2: Taxonomy and application interoperability model (50 pages)
ISO/IEC 18372:2004-12	IT - RapidIO TM interconnect specification (399 pages)
ISO/IEC 24702:2006-10	IT - Generic cabling -- Industrial premises (83 pages)
ISO/IEC 24702 AM1:2009-09	Amendment 1 to IT - Generic cabling -- Industrial premises (6 pages)
ISO/IEC TR 24704:2004-07	Customer premises cabling for wireless access points (11 pages)
ISO/IEC 24739-1:2009-09	IT – AT attachment with packet interface-7 - Part 1 – Register delivered command set, logical register set (ATA/ATAPI-7 V1) (354 pages)
ISO/IEC 24739-1 ed1.0: 2013-09	Corrigendum 1 - IT - AT attachment with packet interface-7 -Part 1: Register delivered command set, logical register set (ATA/ATAPI-7 V1) [2 pages]
ISO/IEC 24739-2:2009-09	IT – AT attachment with packet interface-7 - Part 2 – Parallel transport protocols and physical interconnect (ATA/ATAPI-7) (239 pages)
ISO/IEC 24739-3:2010-03	IT – AT attachment with packet interface-7 - Part 3 – Serial transport protocols and physical interconnect (ATA/ATAPI-7 V3) (251 pages)

ISO/IEC TR 24739-3 ed1.0: 2013-08	Corrigendum 1 - Information technology - AT attachment with packet interface-7 - Part 3: Serial transport protocols and physical interconnect (ATA/ATAPI-7 V3) [1 page]
ISO/IEC TR 24740:2008-01	IT – Responsive link (19 pages)
ISO/IEC TR 24746:2005-08	IT - Generic cabling for customer premises - Mid-span DTE power insertion (6 pages)
ISO/IEC TR 24750:2007-06	IT - Assessment and mitigation of installed balanced cabling channels in order to support of 10GBASE-T (26 pages)
ISO/IEC 24764:2010-04-30	IT - Generic cabling systems for data centre (37 pages)
ISO/IEC 24767-1:2008-09-30	IT - Home network security - Part 1: Security requirements (24 pages)
ISO/IEC 24767-2:2009-01-12	IT - Home network security - Part 2: Internal security services - Secure communication protocol for middleware (SCPM) (37 pages)
ISO/IEC TR 24775 Ed2:2011-02	IT - Storage management (1 485 pages)
ISO/IEC TR 29106:2007-11	IT-- Generic cabling -- Introduction to the MICE environmental classification [12 pages]
ISO/IEC TR 29106-am1ed1.0: 2012-12	Amendment 1 – IT - Generic cabling - Introduction to the MICE environmental classification [7 pages]
ISO/IEC TR 29106 ed1.1:2012-12	IT - Generic cabling - Introduction to the MICE environmental Consol. corrigendum classification [3 pages]
ISO/IEC TR 29107-1:2010-03	IT -- Intelligent homes -- Taxonomy of specifications - Part 1: Taxonomy method [36 pages]
ISO/IEC TR 29108 ed1.0:2013-03	IT- Terminology for intelligent homes [75 pages]
ISO/IEC TR 29125:2010-09	IT -- Telecommunications cabling requirements for remote powering of terminal equipment [17 pages]
ISO/IEC 29341package1:2008-11	IT - UPnP device architecture 1.0 series (74 parts with about 2 700 pages)
ISO/IEC 29341package2: 2011-09	IT - UPnP device architecture 1.0 series 1.0 series 2 nd edition (29 parts with 1 313 pages)
ISO/IEC/IEEE 60559:2011-06	IT- Microprocessor systems - Floating-Point arithmetic [58 pages]
IEC 60821:1991-12	VMEbus - Microprocessor system bus for 1 byte to 4 byte data [561 pages]
IEC 60821-am1:1999-01	VMEbus - Microprocessor system bus for 1 byte to 4 byte data / Amendment 1 [9 pages]
IEC 60822:1988-12	VSB - Parallel Sub-system Bus of the IEC 60821 VMEbus [311 pages]
IEC 60828:1988-05	Pin allocation for microprocessor systems using the IEC 60603-2 connector [7 pages]
IEC 60948: 1988-06	IT - Numeric Keyboard for home electronic systems (HES) [9 pages]

NOTE although the above list may contain mistakes it is more complete than the ISO database that does not record consolidated editions. Therefore this list is provided instead of reference to the central offices.

2.3 RESOURCES

Resources for current development and maintenance of standards documents in SC 25 are adequate in WG 1, WG 3 and PTTT, and are tight in WG 4.

Much of the work concerning interconnection standards for computer systems and attached equipment is based upon reviewing documents developed in the US. Two of the US committees that submit these documents have attendance of over 60 members and meet every other month. The other US development committees have smaller participation but meet very often and are very active and lead their industry. The web sites of these standards developing organizations are read by interested people all over the world as indicated by the worldwide correspondence and questions from them.

It is very hard to maintain the active participation of five countries formally required for the internationalisation of such specifications although there are no doubts that these standards are needed and supported world-wide: There is hardly a computer in the world that does not use standards developed or maintained by SC 25/WG 4. Some examples are SCSI, SAS, Fibre Channel, ATA/IDE, Floating Point, among others.

2.4 ENVIRONMENTAL ISSUES

The network at home is expected to enable applications that can provide considerable savings in energy and resources. WG 1 published ISO/IEC TR 15067-3:2000-10 on energy management and is upgrading this TR to a standard. This document is useful for suppliers of energy management services and distributed energy resources (electric utilities, equipment suppliers, and service providers) as they develop systems for implementing demand response. Demand response systems adjust the demand of consumer products for electricity to match available supplies.

The energy savings expected from smart grids can be enhanced through the interaction among smart grids and smart homes. The HES standards ISO/IEC 14543-x-y enable such interactions with intelligent homes.

The high influence of gas and remote heating on the CO₂ footprint require co-operation with all grids: for electricity, gas and heating.

With generic cabling the lifetime of cabling systems is significantly prolonged and installed material can be reused. Thus waste is avoided and resources are better used.

After a report from IEEE 802.3 WG 3 identified a number of potential opportunities for energy preservation on higher levels in dialog with the physical layer that shall be studied at the next meeting.

With data centre energy usage predicted to grow with the exponential growth in data and information processing members of WG4 are also heavily involved in several other projects including Cloud Storage, Green Storage Initiative, Storage Management Initiative (SMI), pNFS, Data Protection and Capacity Optimization, Solid State Storage, XAM, and Energy Efficient Fibre Channel Specification (FC-EE).

2.5 PARTICIPATION METRICS

The participation of national members by voting has improved with help of electronic voting while the fraction of votes that contain proposals as how to improve the content of the document has declined considerably. If a member body does not have the resources for the intensive study of a proposed text, it may be more advantageous for the quality of the final output to abstain instead of approving without comments.

3.0 FOCUS NEXT WORK PERIOD

3.1 DELIVERABLES

2 WG 1

Issue DIS 29145-2 WiBEEM: wireless communications for home networks (one part).

Issue DIS 30100 on Home Network Resource Management (three parts).

Develop a CD for ISO/IEC 14543-4-3: "Application layer light version for network enhanced control devices of HES Class 1".

Evaluate a proposal to upgrade ISO/IEC TR 14543-4, "Information technology – Home electronic system (HES) – Home and building automation in a mixed-use building" to a standard.

Evaluating a proposal for ISO/IEC 15067-3-x, "Information technology – Home electronic system (HES) – Part 3-1: Architecture of smart energy home for HES,"

Evaluating a proposal for ISO/IEC 15067-3-y, "Information technology – Home electronic system (HES) – Part 3-2: Architecture of distributed energy resource for HES."

Developing a NWIP for ISO/IEC 18012-3 "Information technology – Home electronic system (HES) – Guidelines for product interoperability – Part 3: Application models."

Developing a final NWIP and a CD for ISO/IEC 10192-3, "Information technology – Home electronic system (HES) – Modular communications interface for energy management"

Developing a CD for ISO/IEC 14543-5-7, "IT– Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-7: Intelligent Grouping and Resource Sharing – Remote Access System Architecture

Developing a NWIP and WD for ISO/IEC 14543-5-8, "IT– Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-8: Intelligent Grouping and Resource Sharing – Remote Access Core Protocol

Developing a NWIP and WD for ISO/IEC 14543-5-9, IT – Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-9: Intelligent Grouping and Resource Sharing – Remote Access Service Platform

Developing a NWIP and WD for ISO/IEC 14543-5-101, IT – Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-101: Intelligent Grouping and Resource Sharing – Remote AV Access Profile

Developing a NWIP and WD for ISO/IEC 14543-5-102, IT – Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-102: Intelligent Grouping and Resource Sharing – Remote Universal Management Profile

Developing a NWIP and WD for ISO/IEC 14543-5-11, IT – Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-11: Intelligent Grouping and Resource Sharing – Remote User Interface

Developing a NWIP and WD for ISO/IEC 14543-5-12, IT – Interconnection of information technology equipment – Home Electronic System (HES) Architecture – Part 5-12: Intelligent Grouping and Resource Sharing – Remote Access Test and Verification

Assist SC 25/WG 3 to upgrade ISO/IEC 15018 as a new part of ISO/IEC 11801 focusing on CCCB channel requirements.

Continuing outreach from WG 1 overview documents; new liaisons; contacts to consortia, national standards bodies, and new members

3 WG 3

Revise generic cabling standards: ISO/IEC 11801, ISO/IEC 15018, ISO/IEC 24702, ISO/IEC 24704 and ISO/IEC 24764 as a basis for efficiency and consistency for future upgrades of these specifications as well as additional premises they care for.

In dialogue with IEC component committees the work on a mathematical model that helps accurate simulation of balanced transmission channels also for the highest frequencies supported is continued.

Finalize the development of Amendment 1 to ISO/IEC 14763-2 on “automated infrastructure management (AIM)”.

Finish development of a 2nd edition of ISO/IEC 14763-3: Testing of optical fibre cabling in close liaison with IEC TC 86 and its subcommittees.

Development of ISO/IEC 18598 “Automated infrastructure management (AIM) systems - Requirements, interfaces and applications”.

Continue the work on ISO/IEC 30129: Telecommunications bonding networks for buildings and other structures..

Development of ISO/IEC TR 17979-1-1: IT – Application specific cable assemblies – Twinax cable assemblies – Type 1 Cable assembly

4 WG 4

Review and select new Fibre Channel and/or storage network standards to submit as new work items proposals along with associated CD’s.

Address the addition of about five new SCSI standards.

Address ATA8 (including SATA), the most commonly used storage interconnect in PCs.

and/or storage network standards (14165-151, -225, -245, 24775 Parts 1-8).

Publish at least three SCSI standards (14776-372, -261, -333).

Support potential new interconnects within the scope of SC 25/WG 4.

Maintenance of former SC 26 Bus Architecture projects.

5 PTTT

TR 29107 "IT - Intelligent homes -Taxonomy of specifications: Part 1: The scheme" has been published. Part 2: "The specifications" is a collection from contributions from other committees. It has been done for SC 25/WG 1, but more input is required from other standardisation bodies.

TR 29108 "IT - Terminology for intelligent homes" was published in 2013 containing the terms from the specifications developed in WG 1. Terms from other standardisation bodies have been requested.

3.2 STRATEGIES

- Streamline the program of work and contents of documents in order to make best use of valuable expert resources.
- Keep the standards as short as possible and make best use of publications for components and tests developed in the IEC.
- Avoid documents that become marketing instruments for specific implementations. SC 25 prefers to specify common interfaces, protocols and performance characteristics and keep the freedom for competing implementations hereby supporting the establishment of truly worldwide markets and exchange of products.
- Continue the use of parallel voting on NWIP and CD to speed up work.
- Intensively use electronic means to speed up work, improve the outcome, to replace meetings and to reduce their frequency.
- Keep standards developed in SC 25 short by referencing work of others also in cases where the specification to be referenced is still being worked on and by making best use of documents offered by third parties.
- Continue the close dialogue with components and applications committees to the point of joint development of standards.
- Maintain close working relationship with all parties interested in intelligent homes.

3.2.1 RISKS

1. While most standards activities in new, high technology areas might not be able to keep pace with companies and consortia, SC 25 has taken several steps to *decrease* the standard development risk and enhance the likeliness that the standards will be used in practice:
 - Co-operation with both SDOs (Standards Developing Organisations) and consortia to make best use of input they can provide is being used widely and intensively.
 - SC 25 is focusing most efforts on a limited number of important specifications and is seeking contributions from other SDOs where appropriate.
2. The term IT widens its meaning, interrelated documents are developed by different committees with fairly high speed. This needs extra effort to avoid duplication of specifications, inconsistencies and mistakes.
3. The fast track procedures introduce risks and very often also extra delay. The use of these procedures should be carefully considered on a case-by-case basis

3.2.2 OPPORTUNITIES

1. ISO/IEC 15018 when published in June 2004 just hit the window of opportunity for a world-wide used standard for a generic cabling for Homes that supports ICT, BCT and CCCB, that is all the applications used in homes starting with low bandwidth for commands and controls and leading up to high bandwidth for broadcast communications technology.
2. Standards for applications within the intelligent homes in the area of commands and controls: ISO/IEC 14543-3-X and ISO/IEC 14543-4-X are already accepted by the market, and plug and play of all kinds of gadgets within the home: ISO/IEC 14543-5-x and ISO/IEC 29341, will play an important role in the further development of this growing market. While SC 25 standards presently support competing implementations of the same standard and by that guarantees interoperability of products from different sources SC 25 is also writing useful standards that intend to provide interoperability among competing specifications.
3. SC 25 acknowledged the importance of energy management years ago by publishing the HES model of an energy management system (ISO/IEC TR 15067-3). This technical report has been upgraded to a standard to guide electric utilities as they deploy demand response systems for managing energy

consumption, including various “smart grid” initiatives. WG 1 is investigating revisions to ISO/IEC 15067-3 to include additional energy management features such as microgrids, submetering, premises power generation, storage and interconnections of home networks with electric vehicles. Another initiative that has start is the development of ISO/IEC 10192-3 to specify a simple interface that allows devices to participate in energy management that are not connect to Home Electronic Systems.

4. Already today SC 25 provides the emerging smart grids with access to intelligent homes and devices.
5. The wide recognition of the benefits of separated pre-cablings of buildings achieved in the office area opened opportunities to apply this principle to other kinds of premises. Such opportunities have already been used for industrial premises and homes Data centres are being developed.
6. The market for intelligent homes, where SC 25 started 25 years ago, now has picked up growth also with help of standards developed by ITU-T and IEC TC 100. With a number of actions SC 25 increases co-operation with these entities and thereby responds to the request of JTC 1 to increase its effort in the development of a consistent set of standards for the intelligent home. An appropriate taxonomy for specifications is being developed as a common text with the ITU together with the terminology used for that taxonomy. The UPnP-architecture has been published and extended as ISO/IEC 29341.
7. The development of ISO/IEC TR 11801-99-X “Guidance for balanced cabling in support of at least 40 Gbit/s data transmission” in close cooperation with pertinent developments for so-called “next generation cabling” started in application development committees will foster rapid market acceptance of very high speed data transmission protocols in the LAN environment.
8. The new work on ISO/IEC 18598 “Automated infrastructure management (AIM) systems - Requirements, interfaces and applications” will provide the IT cabling market with an open specification for managing both the initial installation of and subsequent changes to IT cabling infrastructure and allow integration into overall facility management tools.
- 9.

3.3 WORK PROGRAMME PRIORITIES

Standards for Generic cabling, SCSI, Fibre Channel and Intelligent homes and buildings are the top priorities in the three WGs and one project team of SC 25.

The attached tables detail the Working Groups business environments for the coming year:

Table 1 SC 25/WG 1 HES Standards Summary

Category	Arc/No	Description	Why it is important for GII?/Notes
Winning Standards	IEC 60948	Numeric Keyboard for home electronic systems (HES)	Harmonises user interface for telecommunications and HES equipment, both highly used by laymen.
	ISO/IEC 14543-2-1	IT – HES Architecture - Part 2-1: Introduction and device modularity responsible WG 1	Architecture for home network supporting Classes 1, 2, and 3 communications
	ISO/IEC 14543-3-1	IT – HES Architecture - Part 3-1: Communication layers- Application layer for HES Class 1	Command and control for network based control
	ISO/IEC 14543-3-2	Part 3-2: Communication layers – Transport, network and general parts of data link layer for HES Class 1	Command and control for network based control
	ISO/IEC 14543-3-3	Part 3-3: User process for network based control of HES Class 1	Command and control for network based control
	ISO/IEC 14543-3-4	Part 3-4: System management -- Management procedures for network based control of HES	Command and control for network based control
	ISO/IEC 14543-3-5	Part 3-5: Media and media dependent layers -- Power line for network based control of HES Class 1	Command and control for network based control
	ISO/IEC 14543-3-6	Part 3-6: Media and media dependent layers -- Network based on HES Class 1, twisted pair	Command and control for network based control
	ISO/IEC 14543-3-7	Part 3-7: Media and media dependent layers -- Radio frequency for network based control of HES Class 1	Command and control for network based control
	ISO/IEC 14543-3-10	Part 3-10: Wireless Short-Packet (WSP) protocol optimized for energy harvesting -- Architecture and lower layer protocols	Communication applicable to energy harvesting devices
	ISO/IEC 14543-4-1	Part 4-1: Communications layers - Application layer for the network enhanced control devices of HES Class 1	Command and control for network enhanced control devices
	ISO/IEC 14543-4-2	Part 4-2: Communications layers - Transport, network and general parts of data link layer for network enhanced control devices of HES Class 1	Command and control for network enhanced control devices
	ISO/IEC 14543-5-x	Intelligent grouping and resource sharing	Device discovery
	ISO/IEC 15045-1	IT – HES Residential Gateway, Part1: Introduction	Service providers will be using residential gateways to deliver services to home devices and to home occupants via home networks. The residential gateway is essential for linking service delivery networks (wide area networks) with home networks (local area networks).
	ISO/IEC 15045-2	Part 2: Information technology -- Home Electronic System (HES) gateway - Part 2: Modularity and protocol	Residential gateway structure

	ISO/IEC 15067-3	Model of a demand-response energy management system for HES	Residential energy management framework
	ISO/IEC 18012-1	IT - Guidelines for product interoperability - Part 1: Introduction	Application developers will use 18012 to ensure that devices and systems from various manufacturers can coexist on an integrated home network and can jointly perform useful services.
	ISO/IEC 18012-2	Part 2: Information technology -- Home Electronic System -- Guidelines for product interoperability -- Part 2: Taxonomy and application interoperability model	Product interoperability taxonomy including XML code
	ISO/IEC 14762	IT - Functional safety requirements for Home Electronic Systems (HES)	Networked devices that may be controlled remotely need to meet additional safety requirements.
	ISO/IEC 24767	IT – Home Network Security	Security requirements for HES; secure data transfer among devices connected to a home network
	ISO/IEC 29341 series	IT - UPnP device architecture 1.0 series	Universal plug and play
Niche Standards	ISO/IEC 10192-1	IT – Home Electronic System (HES) interfaces - Part 1: Universal interface class 1	The Universal Interface is referenced in the Home Electronic System Architecture (TR 14543-1, -2, -3 and TR 15044). These documents plus the Universal Interface comprise a reference model for home systems that will be useful for subsequent standards.
	ISO/IEC TR 14543-4	IT – Home Electronic System (HES) architecture - Part 4: Home and building automation in a mixed-use building	Applications of home systems where they interface to building control systems, such as in apartment house and combination commercial and residential buildings.
Challenges	Outreach to existing consortia and national standards bodies. Minimise inconsistencies and maximise interoperability between international standards offered in the area of intelligent homes by different standardisation bodies.		

Table 2 SC 25/WG 3 Cabling Standards Summary

Category	Arc/No	Description	Why it is important for GII?/Notes
Winning Standards	ISO/IEC 11801	Generic Cabling for Customer Premises	The world-wide basis for a competitive cabling market and its components. A stable basis for present and future applications
	ISO/IEC 15018	Generic Cabling for homes	Establishes a new market for cabling and to provide the market for intelligent homes with an infrastructure that will boost its growth.
	ISO/IEC 24702	Generic cabling for industrial premises	Provides a common basis in a market with multiple field buses
	ISO/IEC 2470	Generic cabling for data centres	Focuses the market on future proof solutions supported by multiple suppliers
	ISO/IEC 18010	Pathways and spaces for customer premises cabling	Document that specifies an infrastructure for generic cabling
	14763-1, -2 and -3	Implementation and operation of customer premises cabling - Part 1: Administration; Part 2: Planning and installation of copper cabling; Part 3: Testing of optical fibre cabling	Documents that help the practical use of ISO/IEC 11801 and thus widen its success.
	ISO/IECTR29106	Generic cabling - Introduction to the MICE environmental classification	Supports the use of generic cabling in different environment.
	ISO/IEC TR29125	Telecommunications cabling requirements remote powering of data terminal equipment	Provides applications committees with information essential for the development of remotely powered applications.
Niche Standards	ISO/IEC 14709-1 and 14709-2	Configuration of customer premises cabling for applications - Part 1: ISDN basic access Part 2: ISDN Primary Access	Helpful documents.
	ISO/IEC TR 24750	Assessment and mitigation of installed balanced cabling channels in order to support of 10GBASE-T	Gives guidance as how to use the installed base of generic cabling for more demanding application
	ISO/IEC TR 24746	Customer premises cabling for wireless access points	Extends the use of generic cabling.
Future Trends and Directions		<ul style="list-style-type: none"> Apply the principles of precabbling with generic channels to additional applications, environments and other parts of buildings than work areas. Update the cabling standards exploiting recent development in technology. Respond to further opportunities in the home cabling market Cabling for Commands Control and Communications in Buildings. Restructure the cabling standards taking into account their wide field of applications. Use IT cabling to power DTEs Exploit opportunities for energy efficiency in co-operation with the application standards 	The sound principles of ISO/IEC 11801 providing a stable platform for any application which can be provided by many competitors and be implemented prior to the selection of applications will be of great help to development of the home control market.

Category	Arc/No	Description	Why it is important for GII?/Notes
Challenges		Enhance the specifications for generic cabling and to widen their field of applications in a way that is accepted world-wide, embraces the different ways of implementation and still gives a reliable basis for applications. Perpetuate the users' planning confidence in copper that was established in a year long process and extend it to optical fibres including POF.	

Table 3 SC 25/WG 4 Interconnection of Computer Systems and attached Equipment Standards Summary

Category	Arc/No	Description	Why it is important for GII?/Notes
Winning Standards	a) SCSI (-2,-3) : ISO/IEC 9316-X, 14776-XXX	Small Computer System Interface	either existing (SCSI-2/SCSI-3) or follow-on versions of these multi-layer standards are being widely used in the industry. The SCSI command standards are also referenced for use by other storage interconnects (e.g., ATAPI, USB, CFA, JDEC).
	FC : ISO/IEC 14165-XXX	Fibre Channel	Existing and emerging multi-layer standard being widely used in the industry
	ISO/IEC/IEEE	Binary floating-point arithmetic	Used in every computer
	ISO/IEC xxxxx-yyy 24739-1:2009-09 24739-2 24739-3 TR 24739-3	AT Attachment Interface	Existing and emerging storage interconnect standard used in every PC in the industry. These standards are also referenced for use by other storage interconnects (e.g., SATA, NVMe).
Other Standards	FDDI : ISO/IEC 9314-XX	Fibre Optic Distributed Data Interface	end-of-life standard
	ISO/IEC 24740	Responsive link	
	IPI : ISO/IEC 9318-XX	Intelligent Peripheral Interface	end-of-life standard
	ISO/IEC 18372	RapidIO	
	HIPPI: ISO/IEC 11518-X	High Performance Parallel Interface	existing multi-layer standard for very high performance peripherals
Future Trends and Directions	SCSI, iSCSI, FC, HSSB based standards, ATA8, RapidIO 2 nd edition, new interconnects		improvements in performance and reliability
Challenges	Multi-country involvement occurs at the WG4 sub-committee level (in the INCITS meetings in the US). As a result, there are a small number of SC25 member countries involved at the WG4 level.		