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ISO/IEC JTC 1/SC 25 N 2612 Business plan 2016

BUSINESS PLAN FOR JTC 1/SC25 INTERCONNECTION OF INFORMATION TECHNOLOGY EQUIPMENT

1 PERIOD COVERED: September 2016 – September 2017

1.0 Executive Summary

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.

2.0 CHAIRMAN'S REMARKS

2.1 Market Requirements, Innovation

Renewed attention by industry, consumers and governments in energy management, conservation, and greenhouse gas emissions, renewable sources of energy, energy storage, trans active energy (for grid stability), electric vehicle interconnection with home networks and the "smart grid" will further expand the market for home networking applications.

Homes are increasingly equipped with home systems conforming to the HES architecture and implementing protocols specified in the ISO/IEC 14543 series. These protocols support competitive markets with products from various sources implementing protocols specified in this series. 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. Extensions for cloud-based services for home applications using the Internet-of-Things are being discussed.

In response to the great market success of generic cabling both in the office environment and in other areas of interest, such as industrial premises, homes and data centres, SC 25 continues to keep pace with the technological progress in cabling technology. Besides the update of technical requirements to align with the needs of new applications, SC 25 has also restructured its cabling standards to ease the application for the user. To meet the increasing demand to utilise the IT cabling for feeding power to other DTEs at higher power levels (up to 100 W), SC 25 is about to finalize the revision of the pertinent specification ISO/IEC 29125 response energy management. The first part of IGRS for remote access has been approved and published; a second part is being processed; additional parts are planned.

A revision of all generic cabling standards (addressing offices, industrial premises, homes and data centres) is currently at CDIS stage and takes into account the requirements of the upcoming 40 Gbit/s specification; this will further develop the work done in ISO/IEC TR 11801-9901 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.

2.2 Accomplishments

Development has started in WG 1 on a standard for a system of interacting Energy Management Agents (EMAs) for demand-response energy management. The first part of IGRS for remote access has been approved and published; five additional parts are being processed; additional parts are planned.

A revision of all generic cabling standards (addressing offices, industrial premises, homes and data centres) is currently at CD stage and takes into account the requirements of the 40 Gbit/s specification. Upcoming actions on single pair Ethernet cabling.

2.3 Resources

The Plenary of SC25 and the meetings of its working groups continue to be well attended. Resources for current development and maintenance of standards documents in SC 25 are adequate in WG 1, WG 3 and PTTT, and tight in WG 4.

2.4 Competition and Cooperation

The full SC25 Membership list can be found at SC Member Listing. SC25 has made a conscious effort to reduce or eliminate competition with other standards groups by establishing an extensive network of liaisons both internal and external to JTC 1. A list of liaisons can be found at JTC 1/SC 25 Liaisons .

SC25 will work with JTC1 working groups to identify emerging standardization requirements.

3.

3.1 WG 1

WG 1 is responsible for the Home Electronic System1 (HES) series of standards. WG 1, develops standards for the interconnection of electrical and electronic equipment and products for homes and small buildings. The primary markets for WG 1 standards are developers, manufacturers, and installers of these products and related services.

The home systems industry is in an active phase of commercialisation. Recently, the home and building industries have been promoting the interconnection of devices into an Internet of Things. Some industry marketing programs have started to re-label home and building automation as Internet of Things. WG 1 has been writing standards for interconnecting devices using machine-to-machine (M2M) communications since inception in the 1980s. Standards for remote access and management of home equipment are being developed. Extensions to cloud-based services for home applications using the Internet of Things are being discussed. Therefore, standards developed in WG 1 are important for this emerging market. WG 1 is pursuing projects that foster seamless delivery of applications developed linking home, apartment, enterprise and public networks.

Industry, consumers and governments are focusing on "smart grids" to upgrade the energy production and distribution infrastructure. WG 1 is developing standards for the "grid-edge": the interface between smart grids and customer premises. WG 1 standards impact energy management, conservation, greenhouse gas emissions, renewable sources of energy, energy storage, transactive energy (for grid stability), and electric vehicle interconnections with home networks.

Homes are made intelligent with interconnected sensors, actuators, user interfaces, and controllers, which may be embedded in smart consumer appliances. Such networks use a variety of media: IT cabling, wireless and power line communication. Home networks using structured cabling specified by SC 25 are now routinely offered for many new and renovated homes. Wireless and power line carrier technologies are facilitating the introduction of networks into existing homes.

WG 1 seeks to facilitate system interoperability by continuing development of standards for the residential gateway and product interoperability. The interconnection of public networks with home networks poses risks for consumer privacy, safety, and security, which are being addressed.

3.1.1 WG 1 Accomplishments

Intelligent grouping and resource sharing (IGRS, ISO/IEC 14543-5 series)

Wireless short-packet protocol applicable for energy harvesting devices (ISO/IEC 14543-3-10 for AM signals, ISO/IEC 14543-3-11 for FM signals) Wireless Beacon-enabled Energy Efficient Mesh (WiBEEM) network (ISO/IEC 29145 series), Security requirements and services (ISO/IEC 24767 series) Functional safety (ISO/IEC 14762) Home network resource management (ISO/IEC 30100 series) GridWise Architecture Council (GWAC) Interoperability Context-Setting Framework (ISO/IEC TR 15067-3-2, awaiting publication) An extension to the IGRS series of standards for remote access (ISO/IEC 14543-5-x)

3.1.2 WG 1 Deliverables

WG 1 is continuing work on:

Modular communication interface for energy management (ISO/IEC 10192-3)

Energy Management in a multi-dwelling unit complex (ISO/IEC 15067-3-1)

Models of a system of interacting distributed Energy Management Agents (EMAs) for demand response energy management (ISO/IEC 15067-3-3) IGRS, Parts 8, 9, 101, 11, and 12,

WG 1 is considering new proposals on:
Model of an Energy Management Agent (EMA) for a residential community (ISO/IEC 15067-3-1)
Communication protocols for controlled devices in HES
Model of a WoT (Web of Things) system for HES
Security, safety, and privacy for the HES gateway (ISO/IEC 15045 series)
Extensions of product interoperability (ISO/IEC 18012 series) for lexicon and event encoding

3.1.3 WG 1 Risks, Opportunities and Issues

None

3.2 WG 3 –

WG 3's main projects continue to be the work on generic cabling system standards. The previously independent standards for office, industrial, homes and data centres are now being brought into a series of ISO/IEC 11801 standards to improve the technical coherence of their contents and ease future maintenance; including work on distributed building services. The project has advanced to DIS ballot and takes into account amongst others the requirements of the new 40 Gbit/s specification; this will further develop the work done in ISO/IEC TR 11801-9901 into a fully fledged International Standard.

Related to this activity, the revision of ISO/IEC TR 11801-9903 on matrix modelling of channels and links has been initiated. In response to the needs of SC 25's customers from the industrial automation sector (IEC/SC 65C) for so-called "end-to-end" links, ISO/IEC/TR 11801-9902 will describe this kind of cabling. The recently approved project ISO/IEC 14763-4 will specify the pertinent measurement requirements of end-to-end links.

To meet the increasing demand to utilise the IT-cabling for feeding power to other DTEs at higher power levels (up to 100 W), the revision of ISO/IEC TR 29125:2010 is coming to its finalization in the near future.

In support of the IEEE 802.3 activities, two new specifications are under preparation, namely

a) ISO/IEC 11801-9904 to provide guidelines for the use of installed cabling to support 2,5GBASE-T and 5GBASE-T applications

b) ISO/IEC 11801-9905 to provide guidelines for the use of installed cabling to support 25GBASE-T and application.

These deliverables, due to their normative contents, will be developed as Technical Reports. In addition WG 3 has initiated work on a 1-pair cabling project to service emerging applications for Ethernet over one pair.

WG 3 has started the revision of ISO/IEC 14763-2 on installation of IT cabling to take into account requirements on new remote powering and other delayed topics.

For ISO/IEC 14763-3, an amendment is under preparation to update requirements for testing of optical fibre channels and visual inspection and cleaning of optical fibre interfaces.

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, project ISO/IEC 18598 (publication in progress) defines the properties and minimum requirements of Automated Infrastructure Management (AIM) systems.

3.2.1 WG 3 Accomplishments

Revision of generic cabling standards (DIS under ballot): 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. ISO/IEC 18598 "Automated infrastructure management (AIM) systems - Requirements, interfaces and applications" is ready for publication.

3.2.2 WG 3 Deliverables

The Amendment to ISO/IEC 14763-3: Testing of optical fibre cabling will be progressed to DAM ballot..ISO/IEC 14763-4 "Information technology – Implementation and operation of customer premises cabling Part 4: Measurement of End-to-End (E2E)-Links" will be submitted to DIS ballot. Development of ISO/IEC TS 29125 "Information Technology – Telecommunications cabling requirements for remote powering of terminal equipment" is in its final DTS stage. Project ISO/IEC TR 11801-9902 "Information technology – Generic cabling systems - Part 9902: End-to- End link models and requirements" is in its final DTR stage. Project ISO/IEC TR 11801-9904 "Guidelines for the use of installed cabling to support 2,5GBASE-T and 5GBASE-T applications" is in its final

DTR stage. Development of ISO/IEC TR 11801-9905 “Guidelines for the use of installed cabling to support 25GBASE-T applications”.

3.2.3 WG 3 Risks, Opportunities and Issues

Close cooperation with internal and external bodies, such as IEC/SC 65C and IEEE 802.3, on cabling design and implementation documents ensures that cabling standards and application standards are aligned to the maximum possible extent.

3.3 WG 4

WG4 standards are used in almost every computing platform around the world. However, standardization work relies heavily on work done within the US national body with the support and involvement of multinational corporations.

3.3.1 WG 4 Achievements

Published 24775:2012 (SMI-S) Parts 1-8. Begin 14165-225 (FC-SB-5) and 14165-246 (FC-BB-6) projects.

Published the following SCSI standards: 14776-153:2015 (SAS 2.1). Begin 14776-224 (FCP-4), 14776-323 (SBC-3), and 14776-454 (SPC-4) projects.

Published 17760-102:2016 (ACS-2) ATA standard (the most commonly used storage interconnect in PCs).

Maintain former SC 26 Bus Architecture projects.

3.4.2 WG 4 Deliverables

Review and select new storage network standards to submit as new work item proposals along with associated CD's. Publish 14165-151 (FC-BaseT).

Review and select several new SCSI standards to submit as new work item proposals with associated CD's: 14776-154 (SAS-3), 14776-262 (SPL-2), 14776-263 (SPL-3), 14776-415 (SAM-5), and others

Submit new work items proposal and associated CD for 17760-103 (ACS-3)

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

3.4.3 WG 4 Strategies/Opportunities/Risks

Limited number of P-member countries involved or having corresponding mirror committees.

3.5 PT TT (project team)

3.5.1 Programme

The project team PT TT was established after JTC 1 asked SC 25 to take the lead in co-ordinating the standardisation activities for intelligent homes and held its first meeting in the year 2007. PT TT has two projects, one on taxonomy (Information technology – Intelligent homes – Taxonomy of specifications) and the other on terminology (Information technology – Terminology for intelligent homes). These are expected to greatly help SC 25 in their co-ordination activities.

The Taxonomy project consists of two parts. The first part (ISO/IEC TR 29107-1 Information technology – Intelligent homes – Taxonomy of specifications – Part 1: The taxonomy method) describes the taxonomy scheme by which specifications are characterized, and the second provides tables listing the specifications according to this scheme.

The Terminology project handles terms and definitions for intelligent homes. It collects terms and definitions from specifications not only from JTC 1 but also from other standards. When a term has more than one definition, these definitions are sorted according to quality, and for terms with no appropriate definition found, new definitions are created.

3.5.2 Accomplishments and Deliverables

The on-going progress on the terminology project has reached a level that the process of developing a second version of ISO/IEC TR 29108 (Information technology – Terminology for intelligent homes) is expected to start next year.