



# ISO/IEC JTC 1/SC 25 N 1649

Replaces ISO/IEC JTC 1/SC 25 n/a

## New Work Item Proposal

### PROPOSAL FOR A NEW WORK ITEM

Pages 8

Date of presentation of proposal: 2009-05-05	Proposer: United States
Secretariat: Dr.-Ing. Walter P. von Pattay National Body ISO/IEC JTC 1/SC 25	<b>ISO/IEC JTC 1 N 9574</b> ISO/IEC JTC 1/SC 25 N 1649

**A proposal for a new work item** shall be submitted to the secretariat of the Subcommittee of the ISO/IEC joint technical committee concerned with a copy to the Secretariat of ISO/IEC/JTC 1 and the ISO Central Secretariat.

**Presentation of the proposal** - to be completed by the proposer. Guidelines for proposing and justifying a new work item are given in ISO Guide 26.

<b>Title:</b> ISO/IEC 15045-2: Information Technology – Home Electronic System (HES) Gateway – Part 2: Modularity and Protocol
<b>Scope</b> (and field of application)  Home control networks: gateway platform to enable interoperability with external networks and among home networks  <b>ISO/IEC 15045</b> consists of the following parts, under the general title: Information technology — Home Electronic System (HES) gateway. <ul style="list-style-type: none"><li>• Part 1: A Residential gateway model for HES (ISO/IEC 15054-1:2004)</li><li>• Part 2: Modularity and protocol (this proposed standard)</li></ul> This part (part 2) specifies the modular architecture and the mandatory and optional requirements for modular components and protocol means of interconnecting two or more of such modules to comprise home gateway(s).
<b>Purpose and justification</b> (see annex 1)  The primary purposes of this Part 2 are to: <ol style="list-style-type: none"><li>1. Provide a means for implementing the HES gateway model and requirements described in Part 1;</li><li>2. Complement other standards completed or under development as part of the Home Electronic System (HES)—particularly the ISO/IEC 18012 and 14543 series:  ISO/IEC 18012-1:2004, Information technology – Home electronic system - Guidelines for product interoperability – Part 1: Introduction (published)  ISO/IEC 18012-2, Information technology - Home electronic system – Guidelines for product interoperability - Part 2: Taxonomy and lexicon (CD stage)  ISO/IEC 14543, Information technology - Home electronic system (HES) Architecture (numerous parts both published and under development)</li><li>3. Respond to specific rapidly developing market needs in the field of home energy management and to provide interoperability of home networks and appliances with electric “smart grid” technologies and networks now being widely developed and implemented.</li></ol>

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See Annex 1 for a more detailed discussion of the purpose and justification.
<p><b>Programme of work</b></p> <p>If the proposed new work item is approved, which of the following document(s) is (are) expected to be developed?</p> <p><input checked="" type="checkbox"/> a single International Standard</p> <p><input type="checkbox"/> more than one International Standard (expected number: ..... )</p> <p><input type="checkbox"/> a multi-part International Standard consisting of at least _ parts</p> <p><input type="checkbox"/> an amendment or amendments to the following International Standard(s) .....</p> <p><input type="checkbox"/> a technical report , type .....</p> <p>And which standard development track is recommended for the approved new work item?</p> <p><input type="checkbox"/> a. Default Timeframe</p> <p><input checked="" type="checkbox"/> b. Accelerated Timeframe</p> <p><input type="checkbox"/> c. Extended Timeframe</p>
<p><b>Relevant documents to be considered</b></p> <p>ISO/IEC 18012-1:2004, Information technology - Home electronic system - Guidelines for product interoperability - Part 1: Introduction</p> <p>ISO/IEC 15045-1:2004, Information technology - Home electronic system (HES) gateway - Part 1: A residential gateway model for HES</p> <p>JTC1 SC25N1628—ISO/IEC 18012-2, Information technology - Home electronic system - Guidelines for product interoperability - Part 2: Taxonomy and lexicon (CD stage)</p> <p>JTC1 SC25N1528— ISO/IEC 15045-2, Information technology - Home Electronic System (HES) gateway - Part 2: Modularity and protocol (CD stage)</p> <p>The last document is a mature specification that is being presented in parallel as a CD for approval.</p>
<p><b>Co-operation and liaison</b></p> <p>ITU-T SG15 Optical and other transport network infrastructures</p> <p>GridWise Architecture Council (under consideration for category C liaison organization with SC 25)</p> <p>(Others will be added as necessary and appropriate)</p>
<p><b>Preparatory work offered with target date(s)</b></p> <p>JTC1 SC25N1528— ISO/IEC 15045-2, Information technology - Home Electronic System (HES) gateway - Part 2: Modularity and protocol (committee draft – being sent to SC 25 NBs for 3 month ballot in parallel with this NWIP) with SC 25 N 1651.</p> <p>Target dates:</p> <p>FCD: 2009-10-15</p> <p>FDIS: 2010-06-15</p> <p>IS: 2010-10-15</p>
<p><b>Signature:</b> Dr.-Ing. Walter P. von Pattay, Secretary of ISO/IEC JTC 1/SC 25</p>
<p>Will the service of a maintenance agency or registration authority be required? ...NO.....</p> <p>- If yes, have you identified a potential candidate? .....</p> <p>- If yes, indicate name .....</p> <p>Are there any known requirements for coding? ...NO.....</p> <p>- If yes, please specify on a separate page</p>

Does the proposed standard concern known patented items? ...NO.....  
- If yes, please provide full information in an annex: see Annex 1

**Comments and recommendations of the JTC 1/SC 25 Secretariat –**

In accordance with JTC 1 Directives 12.2.7 this NWIP is distributed for voting in parallel with CD 15045-2, see SC 25 N 1651 assuming agreement by SC 25 using the authorisation for distribution of a CD recorded in SC 25 N 1595, see Res. 19/7.

In case the NWIP is not approved the CD will be discarded also in case it found substantial support.

**Comments with respect to the proposal in general, and recommendations thereon:**  
It is proposed to assign this new item to JTC 1/SC 25 as project 01.25.01.03.04.

**Voting on the proposal** - Each P-member of the ISO/IEC joint technical committee has an obligation to vote within the time limits laid down (normally three months after the date of circulation).

**The vote shall be sent to the Secretary of ISO/IEC JTC 1 / SC 25** – Dr.-Ing. Walter P. von Pattay, Member of ZVEI FV 7 & FV 8, Gotthelfstraße 34, D- 81677 München, Germany, Tel.: +49/89/923 967 57, Tfx.: +49/89/923 967 59 (on request only), **EM: Walter@Pattay.com**

<b>Date of circulation:</b> 2009-05-05	<b>Closing date for voting:</b> 2006-08-06	<b>Signature of Secretary:</b> Dr.-Ing. Walter P. von Pattay
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<b>NEW WORK ITEM PROPOSAL - PROJECT ACCEPTANCE CRITERIA</b>		
<b>Criterion</b>	<b>Validity</b>	<b>Explanation</b>
<b>A. Business Relevance</b>		
A.1 Market Requirement	Essential <u>    X    </u> Desirable _____ Supportive _____	The market for home appliances and networked devices is global. There is an urgent need for interoperability between such products and external networks, particularly with respect to energy management and smart grid applications—as well as many other consumer electronic applications.
A.2 Regulatory Context	Essential _____ Desirable _____ Supportive <u>    X    </u> Not Relevant _____	Future regulatory requirements or standards may be facilitated or supported by this standard (e.g., information security, data protection, privacy, electric power rate structures/tariffs, etc.).
<b>B. Related Work</b>		
B.1 Completion/Maintenance of current standards	Yes <u>          X          </u> No _____	ISO/IEC 15054-1:2004 HES Gateway – Part 1: A model for a residential gateway.
B.2 Commitment to other organisation	Yes _____ No <u>          X          </u>	
B.3 Other Source of standards	Yes _____ No <u>          X          </u>	
<b>C. Technical Status</b>		

C.1 Mature Technology	Yes _____ No _____ X	This standard incorporates other mature technologies, however the interoperability technology (ISO/IEC 18012-2) is prospective and under development (CD stage)
C.2 Prospective Technology	Yes _____ No _____ X	Need is existing, but is anticipated to expand into new application areas (e.g., smart grid)
C.3 Models/Tools	Yes _____ X No _____	Includes an HES gateway architecture reference model.
<b>D. Conformity Assessment and Interoperability</b>		
D.1 Conformity Assessment	Yes _____ X No _____ X	
D.2 Interoperability	Yes _____ X No _____	This standard specifies an Interoperable modular gateway across different media, different protocols and application languages, and among different vendors.
<b>E. Cultural and Linguistic Adaptability</b>	<b>Yes</b> _____ X <b>No</b> _____	In combination with ISO/IEC 18012-2 Taxonomy and lexicon, this standard allows for multiple languages and is linguistically neutral and extensible.
<b>F. Other Justification</b>		Product interoperability is a key factor in the successful application of HES and other control networks to home automation products. Manufacturers have very limited experience or guidance in designing products that interoperate with related products likely to be connected to a home control network. Therefore, this New Work Item Proposal will be very useful to manufacturers and will promote the development of the home automation and consumer electronics industries.

**Notes to Proforma**

**A. Business Relevance.** That which identifies market place relevance in terms of what problem is being solved and or need being addressed.

A.1 Market Requirement. When submitting a NP, the proposer shall identify the nature of the Market Requirement, assessing the extent to which it is essential, desirable or merely supportive of some other project.

A.2 Regulatory Context. If a Regulatory requirement is deemed to exist - e.g. for an area of public concern e.g. Information Security, Data protection, potentially leading to regulatory/public interest action based on the use of this voluntary international standard - the proposer shall identify this here.

**B. Related Work.** Aspects of the relationship of this NP to other areas of standardisation work shall be identified in this section.

B.1 Completion/Maintenance. If this NP is concerned with completing or maintaining existing standards, those concerned shall be identified here.

B.2 External Commitment. Groups, bodies, or fora external to JTC 1 to which a commitment has been made by JTC for Co-operation and or collaboration on this NP shall be identified here.

B.3 External Std/Specification. If other activities creating standards or specifications in this topic area are known to exist or be planned, and which might be available to JTC 1 as PAS, they shall be identified here.

**C. Technical Status.** The proposer shall indicate here an assessment of the extent to which the proposed standard is supported by current technology.

C.1 Mature Technology. Indicate here the extent to which the technology is reasonably stable and ripe for standardisation.

C.2 Prospective Technology. If the NP is anticipatory in nature based on expected or forecasted need, this shall be indicated here.

C.3 Models/Tools. If the NP relates to the creation of supportive reference models or tools, this shall be indicated here.

**D. Conformity Assessment and Interoperability**

D.1 Indicate here if Conformity Assessment is relevant to your project. If so, indicate how it is addressed in your project plan.

D.2 Indicate here if Interoperability is relevant to your project. If so, indicate how it is addressed in your project plan

**E. Cultural and Linguistic Adaptability** Indicate here if cultural and linguistic adaptability is applicable to your project. If so, indicate how it is addressed in your project plan.

**F. Other Justification** Any other aspects of background information justifying this NP shall be indicated here

## **Annex 1.**

Purpose and justification (attach a separate page as annex, if necessary)

### **Purpose of 15045-2**

The primary purposes of this Part 2 is to:

1. Provide a means for implementing the HES gateway model and requirements described in Part 1

Part 1, A residential gateway model for HES (Home Electronic System) was published as an International Standard in 2004. It specifies a high level architecture/model and sets of applications and requirements for connecting diverse products in the home to each other and to outside networks and services. This Part 2, Modularity and protocol, specifies a more detailed modular architecture and protocol means for interconnecting the modules.

2. Complement other standards completed or under development as part of the Home Electronic System (HES)—particularly the ISO/IEC 18012 and 14543 series:

**ISO/IEC 18012-1:2004, Information technology - Home electronic system - Guidelines for product interoperability - Part 1: Introduction (published)**

**ISO/IEC 18012-2, Information technology - Home electronic system - Guidelines for product interoperability - Part 2: Taxonomy and lexicon (CD stage)**

**ISO/IEC 18012 Interoperability is a complementary standard to the ISO/IEC 15045 HES gateway. In summary, the 15045 gateway specifies a hardware/communication platform on which the 18012 Interoperability guidelines may be implemented in software.**

**ISO/IEC 14543, Information technology - Home Electronic System (HES) Architecture (numerous parts, both published and under development).**

The ISO/IEC 14543 HES Architecture series of standards define a number of specific communication network protocols, signalling schemes, and application languages. A gateway will always be needed to interconnect a home network with an external network. The communications protocol for a wide area network is almost always different from home networks. If all product manufacturers agreed to incorporate the same home network communications protocol in all their products, interoperability could be achieved without the need for gateway functions between home networks. However, this is not the case due to 1) the diverse nature of markets, manufacturers, and applications, 2) rapidly advancing communication technologies, protocols, signalling methods, etc., and 3) the existence of many legacy products and systems in the home and building industries—thus leaving a gap. This 15045 HES gateway (and its companion standard 18012 Interoperability) fills this gap by providing a way for ANY (and ALL) protocol(s) or language(s) to “live” and interoperate within the HES framework of standards.

National Bodies are encouraged to consider this proposal in the light of the decision made at the 2005-09-30 Edinburgh, Scotland, meeting and incorporated in ISO/IEC 14543-2-1 to accommodate multiple protocols within the HES architecture. The primary purpose of ISO/IEC 15045 is to provide a standard for translating between a wide area network (WAN) communications protocol and a local area network (LAN) communications protocol. An optional feature of this standard translates among LAN

protocols. Multiple LAN protocols may be implemented as specified ISO/IEC 14543. This LAN translation feature in ISO/IEC 15045 will also support additional protocols that are marketed for home systems, but not specified in ISO/IEC 14543.

3. Respond to specific rapidly developing market needs in the field of home energy management and to provide interoperability of home networks and appliances with electric “smart grid” technologies and standards now being widely developed and implemented.

Both the 18012 Interoperability and 15045 HES gateway projects had their early origins in the energy management arena, inspired by the needs of electricity demand side management and demand response applications that were developed to control residential demand and efficiency. Within the last year, however, the importance of this technology has gained fresh relevance and importance because of national and international crises in energy supply costs, global warming, and the economic needs for development/upgrade of electricity infrastructures. Home appliance manufacturers face an urgent need for some means of assuring the interoperability of their products with emerging energy management and “smart grid” services.

Although numerous gateway devices have been available on the market and gateway architectures have been adopted by various consortia as well as by IEC and ITU-T, no generalized and standardized modular and expandable way of interconnecting and providing interoperability between any network inside the home and any network outside the home has been provided. The 18012 and 15045 standards are intended to accomplish exactly this mission and are compatible with and complementary to all other gateway architectures and home products.

#### Brief history of this 15045-2 document

ISO/IEC 15045-1 A residential gateway model for HES was published as an IS in 2004. 15045-2 Modularity and protocol, an extension of Part 1, was registered as an NP on 2004-11-29. The Part 2 document then proceeded through several CDs and 3 FCDs in SC25/WG1 Home Electronic System.

At the Lyon meeting of SC25/WG1 (20-23 October 2008) consensus was finally reached on the one remaining issue of disagreement that had persisted for three FCD ballots—the issue of the choice of the particular “gateway-link”, the application protocol used to link the modules together in “distributed gateway” applications. At Lyon, it was agreed not to specify a particular protocol at this time, but simply a set of general “requirements,” leaving the choice of gateway link protocol open. This solution allowed the document to advance and provided a “place keeper” for specifying a suitable “gateway-link” protocol in a future edition of the standard after some experience in the marketplace was gained. At its Lyon meeting (2008-10-24) SC 25 adopted a resolution to distribute another FCD ballot as soon as comments were resolved and a new text was available from WG1 editors.

However, by the time the Lyon discussions were finalized, comments resolved, and a new 4th FCD text was prepared mid December, the limit date had been exceeded and the project had been automatically cancelled (2008-12-05) by ISO. The Technical Program Manager subsequently recommended circulation of the revised draft as a CD accompanied by a NWIP explaining the history and restating the purpose and justification of the project to the NBs. Therefore, this proposed standard has been subject to much debate, technical issues have been resolved, and the WG 1 experts and SC 25 delegates have determined that it is ready for balloting by the Member Nations.