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SMB/4010A/DC

2009-09-16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

STANDARDIZATION MANAGEMENT BOARD

SUBJECT

SMB Meeting 136, agenda item 8.1, Tel Aviv

Potential new fields of technology where IEC standardization should be considered

This document has been updated and replaces document SMB/4010/DC.

BACKGROUND

The document was generated in 2007 and has been updated periodically with input from SMB NCs, TCs/SCs and SMB strategic Groups and is shared with MSB.

ACTION

The SMB is invited to note the updated document at the SMB meeting 136. Please submit any comments using the IEC Technical Server before 2009-10-08.

Annex A

Future technologies

Subject	TC	Status
1. Smart Grid	<p>TC 8, TC 57, TC 95, TC 86, 65, 77, 88, 64</p> <p>SG 3 on Smart Grid has been established</p>	<p>IEC TC 8 - PAS 62559 (01/08) on IntelliGrid Methodology for Developing Requirements for Energy Systems.</p> <p>TC 57 - IEC standard 61850 with many parts on Communications Networks and Systems in Substations.</p> <p>The TC 57 CAG discusses this extensively, and some of its members attend meetings on this. TC 105 has proposed an expert (and an "alternate expert") for SG 3,</p> <p>SG 3 will hold its 2nd meeting in November 2009 to focus on where new standards work is needed, and to develop a long term strategic plan for the IEC in the future.</p>
2. Energy Efficiency and Renewable Energy Sources – Common International Terminology	ISO/IEC NP	<p>Approved by IEC NCs, C/1574/RV, 2009-04</p> <p>SMB Decision 135/11 – Joint Project Committee is established under the convenership of ISO</p>
<p>3. Electrical Power plant</p> <p>Standardized method for operation and measuring generating plant performance</p>	<p>JWG of identified TCs/SCs</p> <p>“</p>	<p>Request from the Strategic Group 1 on <i>Energy Efficiency and renewable resources</i> for a Project Committee.</p> <p>(Recommendation 2 document SMB/3718B/R)</p> <p>“To develop a guideline on best practices for the operation of an electrical power plant, which allows for the determination of the performance/efficiency of a plant and a comparison with other plants.”</p> <p>As there is no Technical Committee for this subject and expertise from various fields is required (including from ISO), the work could be completed via a JWG s with the existing IEC TCs identified (TC 4, TC 5, TC 65) as opposed to the proposed Project Committee. (2008-10)</p> <p>Request for standardization on this has been received from World Energy Council</p> <p>Liaisons: Eurelectric, Union of the Electricity Industry, IEC TCs 8, 13, 17, 17A, 17C, TC 57, 77</p> <p>For review by SG 1 in Tel Aviv</p>
<p>4. High-performance electrical storage systems</p> <p>Large-scale, high-capacity storage systems for electricity</p>	TC 21/SC 21A	<p>SMB SG 1 on Energy Efficiency</p> <p>(Recommendation 12 document SMB/3718B/R)</p> <p>TC 21/SC 21A to develop (an) international standard(s) for batteries suitable for large scale storage of electricity (high generation – low consumption vs. low generation – high consumption), which are required in (highly) decentralized electrical grids fed by wind turbines, photovoltaic systems and/or similar renewables.</p> <p>TC 82, has developed IEC TS 62257, Small renewable</p>

(e.g. for decentralized power grids)		<p>energy and hybrid systems for rural electrification.</p> <p>In addition to the SMB SG 1 recommendation, DE also suggest to add information regarding storage systems for hybrid cars:</p> <p>Two projects are in progress within TC21: 21/698/CD - Future IEC 61982-5 Ed.1: Secondary batteries for the propulsion of electric road vehicles – Reliability and abuse testing for lithium-ion cells 21/697/CD- Future IEC 61982-4 Ed.1: Secondary batteries for the propulsion of electric road vehicles – Performance testing for lithium-ion cells Two NWIP issued by SC21A were rejected (now at PWI stage) 21A/437/NP - IEC 62619.ed1 Safety requirements for large format secondary lithium cells and batteries for stationnary and motive applications 21A/438/NP - IEC62620.ed1 – Large format secondary lithium cells and batteries for stationary and motive applications.</p> <p>New proposals are under study at the preliminary stage within TC 21A/WG5 "Large capacity secondary lithium cells and batteries."</p>
<p>5. Renewable Energy Sources – SE proposal</p>	<p>TC 4, TC 14, TC 17, TC 18, TC 20, TC 22 TC 88/SC 3, TC 114, SG 1</p> <p>Responses received from TC 4, TC 14, TC 17, TC 18, TC 20, TC 22, SC 22F, SC 22G, SC 22H and TC 114</p>	<p>SE Recommendations for new projects:</p> <ul style="list-style-type: none"> • Ask TC 18 to develop high voltage offshore based non-explosive Power Stations standards in co-operation with ISO for optimal mechanical constructions. → TC 18 - (IEC TC 114 might be interested, set up liaison) • Ask TC 20 on the possibilities to make a ashore cable standard for high voltage AC and DC. → TC 20? (IEC TC 114 might be interested, set up liaison) • Promote large Grid infrastructure by efficient Energy Management standards and benchmarking on Power plants → TC 4, TC 14, TC 17, TC 22, etc..? • Promote Industrial Electrical Energy Efficiency by making practical standards for implementing Energy Management standards by measuring and evaluating of Production plants → SG 1? • The future system aspects give rise for consideration of committee-sector-work within IEC and assembled referred committees in system groups for easy development of system based standards. → ?? <p>For discussion SMB meeting 135, 2009-10-18 Tel Aviv</p>
<p>6. Electrotechnics in the automotive field</p>	<p>TC 21, SC 21A, TC 22, SC 22E, SC 22F, SC 22G, SC 22H, SC 23F, SC 32B, SC 32C, TC 34, SC 34A, TC 40, SC 46F, , SC 47A, SC 48B, SC 65A, TC 69, TC 70, SC 77A, ,</p>	<p>All IEC TCs/SCs were surveyed on whether they could undertake work in this area. Also, how and if liaison with the ISO/TCs is working.</p> <p>SMB Decision 131/11 - <i>Automotive Electronics</i></p> <p>The SMB agreed to the necessity for the involvement of IEC in future new automotive technology to ensure that electrotechnical expertise is utilized, such as electrical and electronics, communications, functional safety and environmental aspects for products such as higher voltage</p>

	TC 79, TC 86, SC 86A, SC 86B, SC 86C, TC 95, TC 100, TC 104, TC 105, CIPSR/D, CISPR/I	<p>batteries.</p> <p>The SMB requested Central Office to:</p> <ul style="list-style-type: none"> - review the responses from the survey and identify TCs developing standards for the automotive industry; - organize a workshop with the TC/SC experts concerned, including experts in nanotechnology - identify potential IEC leadership related to automotive electronics. <p>DE: TC 21/SC 21A/TC 69</p> <p>To develop a coherent set of generic battery standards, embracing all electrochemical systems for traction duties in electric and hybrid road vehicles, taking into account existing and future standards developed and currently under development by TC 21, SC 21A and TC 69/WG3. Participation of experts from all NC with considerable automotive industry. - Ongoing</p> <p>The MOU between ISO and IEC on automotives dated 1990 is being revised and is for ISO/TMB review in September 2009.</p>
7. Charging Systems for electrical vehicles	TC 21, TC 23, 20, 57, TC 69, SG 3	Need to take a "systems" view of the whole process, as this covers equipment in the vehicle, the connectors and cables, charging units, "smart grid" issues and probably other matters.
8. Ultra high voltage transmission	SB 1, SG 2	<p>A Joint IEC/CIGRE group was established to provide guidance to IEC and CIGRE in the development of UHV standardization is expected to report by the end of 2008. JICCG, is expected to submit its final report to SMB following its meeting in Stockholm 2009-09.</p> <p>The SMB Strategic Group 2 on UHV will report to SMB 135, SMB Meeting October 2009, after reviewing the initial recommendations/scope taking into consideration the SMB comments at its second meeting in Stockholm in September 2009.</p>
8. LVDC disribution systems	SG 4	<p>SMB, at June 2009 meeting, set up an SG 4 on LVDC disribution systems up to 1500 DC in relation to energy efficiency, under convenership of Sweden. SMB Decision 135/15, reference document SMB/4007/DP.</p> <p>For discussion at SMB meeting 135, 2009-10-18. Tel Aviv</p>
9. Luminaries	TC 34 TC 24 and TC 34	<p>Testing techniques for energy saving lamps, which due to new European regulations have come into force, replacing incandescent lamps.</p> <p>Safety issues in the area of electronic switches light dimmers, as sensor peer regulators.</p> <p>TC 34 chairman is invited to February 2010 SMB meeting.</p>
10. Ambient intelligence	TC 65, possibly others	<p>DE NC proposal</p> <ul style="list-style-type: none"> - trust worthiness of application-centric networks - management of peer-to-peer/ad hoc networks - industrial application of software agents - Man-System-Co-operation
11. Standardization of	Proposed SC	KATS, National Committee for the Republic of Korea

components, materials and equipments which have big influences on the technology development and the reliability of Flat Panel Displays.	110A TC 110	<p>proposes to create new SC with the growing demands in this area</p> <p>An FDP standardization forum was held the day after the TC 110 plenary meeting in October 2008.</p> <p>The Korean NC has indicated that a proposal for a new SC will be submitted in due time.</p> <p>The TC 110 secretariat has discussed the subject internally and has concluded that it is still not the time to establish a new subcommittee since there are no substantial new proposals at present to support the need.</p>
12. Superconductive switches and current limiters	SC17C	<p>There is no basic change in the standards activities beside the starting action on UHV Systems which includes 1000 kV AC and 800 kV DC.</p> <p>It is expected that the required changes and additions are done with the revision of existing standards, and may be special new standards.</p> <p>This topic will be part of the new SBP of SC 17C.</p> <p>A next future activity will be connected to digital substation control and measuring equipment, and the impact of nanotechnology to the products related to SC 17C.</p> <p>Hermann Koch</p> <p>Note: report from from SC 17C meeting held 2008-12, SMB/4031/R.</p>
13. Smart home	TC 100 JTC1/SC 25 ITU-T	<p>Work on going in TC 100 and JTC 1/SC 25</p> <p>ITU-T is also involved</p>
14. Intelligent sensors	TC 65	<p>Though it is not quite clear what is mentioned with "Intelligent sensors"</p> <p>SC65B interprets it as smart transmitters/transducers. The SC65B has already worked on these topics in the following 5 standards and NP's:</p> <ul style="list-style-type: none"> • IEC/TS 62098 (2000-11) PUBLISHED 2008 Evaluation methods for microprocessor- based instruments • IEC 60770-3 Ed. 1.0E (2006-04) PUBLISHED 2008 Transmitters for use in industrial process control systems - Part 3: Methods for performance evaluation of intelligent transmitters • IEC 61987-1 Ed. 1.0E RDIS PUBLISHED 2006 Industrial-process measurement and control - Data structures and elements in process equipment catalogues - Part 1: Measuring equipment with analogue and digital output • IEC 61987 Ed. 1.0E ANW Industrial-Process Measurement and Control - Data Structures and Elements in Process Equipment Catalogues - Part 2: Measuring equipment properties for electronic data exchange • IEC 61514-2 (2004-01) PUBLISHED 2008 Industrial process control systems - Part 2: Methods of evaluating the performance of intelligent valve positioners with pneumatic outputs

		JTC 1 has set up a group to investigate needs. Mr. Dumortier, the TC 65 secretary is a member.
15. Relays based on micromechanics	TC 94	<p>This potential new field was addressed at the plenary meeting held in Japan in 2006-03.</p> <p>The TC 94 secretary notes that the field of micromechanics is not yet mature enough to result in electrical all-or-nothing relays. Therefore, there will be no activities within TC 94 for the next couple of years. Nonetheless the progress in this field of technology will be monitored by TC 94.</p> <p>TC 94 has developed an SBP which is under circulation, reference 94/297/DC. It states that relays based on micromechanics will become relevant "in the long term".</p>
16. Power transmission via radio frequency beam	CISPR	<p>Question from ITU-R Study Group 1. Technology is under development to transfer power efficiently from one location to another via radio frequency beams. (see annex B of document SMB/4040/DC)</p> <p>Input has been requested from CISPR</p> <p>Canada - This has been an ongoing item and ACEC could provide more information. This is a very interesting technology but with some problems to solve.</p> <p>If this technology is being used some day, the exposure of the workers and of the population will have to be evaluated and TC 106 should be involved to develop the necessary standards. At this point, Canada will be interested.</p> <p>CISPR Secretary, D. Early Communication dated 2008-05-20 to item concerning Question from ITU-R Study Group 1: <i>Power transmission via radio frequency beam</i> This question is of concern to CISPR as the scope of CISPR is to protect radio services. CISPR will be discussing this at its meeting to be held in Osaka, JP, 2008-10-20 to 2008-10-29 The Question ITU-R 210-2/1 on Power transmission via radio frequency beam has been presented to CISPR, for information only, by an ITU-R representative during the CISPR meeting held in Osaka in September 2008. The studies described in Question ITU-R 210-2/1 should be completed by 2012 at the latest. No action for the time being in CISPR.</p>
17. "Contactless power transmission"	SMB Secretary TC 100, TC 96	There are numerous prototypes and demnonstations for charging small electronic appliances such as mobile phones.