Activities in Smart Grid Standardization

Repository (Version 2.0, April 2011)

ITU Telecommunication Standardization Bureau
Policy & Technology Watch Division

Introduction

At its meeting in February 2010, ITU-T's Telecommunication Standardization Advisory Group (TSAG) proposed to establish a Focus Group on smart grid to identify and study the standards needs in this area from a telecommunications perspective.

Smart grid, the vision of modernized and efficient electricity distribution enabled by the latest information and communication technologies (ICT), has been identified by governments and policy makers around the world as a way of addressing global warming and energy independence.

Standards play a key role in the development, deployment and operation of smart grids worldwide. They are a proven tool to safeguarding interoperability, enabling the different components of a grid to exchange information and to mutually understand the information exchanged. This is of particular importance, as the smart grid vision brings together technologies and paradigms of two, formerly distinct, sectors: utilities and ICT.

This repository compiles, in alphabetical order, the smart grid related activities of some 20 standards development organizations, consortia, fora and other groups. The content is based on information found on the corresponding websites, in presentation material and news articles. It is meant to be a starting point and running document rather than an exhaustive review, and those who seek more details and updates may look for them in the many references.

The authors encourage participants of Focus Group Smart Grid to add, modify or delete entries, and to extend the repository to a wiki to serve the wider smart grid community.

The initial version of the repository was prepared by the Policy & Technology Watch Division of ITU's Telecommunication Standardization Bureau in April 2010. The authors can be contacted at tsbtechwatch@itu.int.

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Template

[Common name of organization, consortium, group]

Summary

Full name of (standards) body / group	**[full name]**
Status	[e.g., active, inactive, planned]
Chairman	[name of chairman or coordinator, if applicable]
Membership	[short description of who is participating]
Website	[official website]

Activities

Summary of activities	[outline of activities, ToR]
Website full description / ToR	[detailed source for summary]
Comments	[e.g., structure of group, working parties, etc.]

Output Documents

Name	Title	Type	Version	Date	Hyperlink
[doc nr or similar]	[full title]	[e.g., report, standard, white paper]	[version number]	[date of publication]	[URL to output document]

Last updated

[date of last update of this record]

CEN, CENELEC, ETSI Focus Group on standards for the Smart Grid

Summary

Full name of (standards) body / group	**CEN, CENELEC, ETSI Focus Group on standards for the Smart Grid**
Status	Planned
Chairman	Luc van den Berghe (CENELEC, contact person)
Membership	Will be open to interested European associations as well as standards committees, Commission etc.
Website	

Activities

Summary of activities	ToR to be finalized early May 2010. Plan is to produce a European standardization overview and roadmap before the end of the year [2010]. Tentative date for the Kick-Off meeting: 31 May 2010, Brussels, Belgium.
Website full description / ToR	
Comments	

Output Documents

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European Commission Task Force on Smart Grids

Summary

Full name of (standards) body / group	**European Commission Task Force on Smart Grids**
Status	Active
Chairman	
Membership	Led by European Commission Directorate-General for Energy (DG ENER), cross-DG participation, involvement of regulators, industry groups, standardization bodies (including ETSI, CENELEC)
Website	

Activities

Summary of activities	Objective to identify and produce a set of regulatory recommendations to ensure EU-wide consistent, cost-effective, efficient and fair implementation of Smart Grids Key issues: - Cost of Smart Grids deployment - Benefits of Smart Grids deployment
Website full description / ToR	
Comments	

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EUTC, ICT4SDG

Summary

Full name of (standards) body / group	**European Utilities Telecom Council** **ICT for Smart Distributed Generation**
Status	Active
Chairman	Mr. Peter Moray (Coordinator)
Membership	Telefonica, BT, Vodafone, NSN, Alcatel Lucent, SAP, Ericsson, and others
Website	http://www.ict4smartdg.eutc.org/

Activities

Summary of activities	The general objective of this Thematic Network (TN) is to foster and promote large-scale integration of domestic and distributed micro generation and promote improvements in energy efficiency through the implementation of innovative ICT solutions into local smart power grids. The TN will bring together key relevant players in the telecommunications and energy sector. They will overview and provide insight of existing and new innovative ICT technologies available for smart distributed generation at domestic level, forecast steps forward that can promote large-scale implementation, identify best technical solutions available, non-technical barriers, as well as to promote all TN results and conclusions as key elements to boost deployment.
Website full description / ToR	http://www.ict4smartdg.eutc.org/content/about-ict4sdg
Comments	- 6 working parties o WP 1 Exchange of information and experience o WP 2 Achieve Consensus on Benefits of Available Solutions o WP 3 Identification of non-technical Barriers for large scale deployment o WP4 Definition of steps forward for promotion of large scale implementation o WP 5 Dissemination o WP 6 Coordination and project management

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GMC

Summary

Full name of (standards) body / group	**Grid Modernization Collaborative**
Status	Active
Chairman	
Membership	Virtual organization for expanding collaboration on smart grid activities, established by Energy & Environmental Resources Group (E2RG). Members include U.S. DoE, EPRI IntelliGrid, GridWise
Website	

Activities

Summary of activities	GMC is a virtual consortium of consortia to align and jointly conduct grid modernization efforts in: - Integrated testing, demonstration, deployment of advanced technologies - Interoperability and standards implementation - Regulatory/value proposition/tech transition - System simulation and modeling
Website full description / ToR	- No official website, information found at http://www.smartgridnews.com/artman/publish/article_194.html and http://www.sessionview.com/data/postevent/GW-07/Paul-Wang-20515386.pdf
Comments	

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GWAC

Summary

Full name of (standards) body / group	**GridWise Architecture Council**
Status	Active
Chairman	Mr. Ron Ambrosio (IBM)
Membership	13 members: Constituencies of the electricity supply chain and users: experts in power systems, information technology, telecommunications, markets and financial systems, buildings, industrial controls, security, and other related sectors.
Website	http://www.gridwiseac.org/

Activities

Summary of activities	GWAC was formed by the U.S. Department of Energy to promote and enable interoperability among the many entities that interact with the nation's electric power system. Activities include: - Assembles ideas and resources to articulate and motivate interoperability - Aligns stakeholders toward a vision for electric system interoperation - Establishes policy frameworks to enable secure interoperability - Leverages the GridWise interoperability framework as an organizing platform - Engages and encourages growth in the use of interoperability designs - Identifies valuable and immediate implementation areas - Helps stakeholder groups move towards adoption of interoperability principles - Stimulates and guides programs in the adoption of interoperability approaches - Acts as a consultative body for public and private
Website full description / ToR	http://www.gridwiseac.org/about/mission.aspx
Comments	

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IEC, Strategic Group 3 on Smart Grid

Summary

Full name of (standards) body / group	**IEC, Strategic Group 3 on Smart Grid**
Status	Active
Chairman	Richard Schomberg (Convener)
Membership	Brazil, Canada, China, France, Germany, Great Britain, Italy, Japan, Korea, Netherlands, Spain, Sweden, Switzerland, United States
Website	http://www.iec.ch/zone/smartgrid/

Activities

Summary of activities	SG 3 on Smart Grid provides advice on fast-moving ideas and technologies likely to form the basis for new International Standards or IEC TCs in the area of Smart Grid technologies. SG 3's first task at the meeting it held in April 2009 was to finish laying down the road map for the development of a framework to achieve interoperability of Smart Grid systems. Since then, it has submitted a 160-page report that covers the 24 TCs that have published International Standards relating to the Smart Grid and agreed on a basic set of standards covering interoperability, transmission, distribution, metering, connecting consumers and cyber security.
Website full description / ToR	http://www.iec.ch/zone/smartgrid/grid_sg3.htm
Comments	- Close collaboration with NIST - Currently 24 IEC TCs and SCs participate in Smart Grid efforts o TC 3, TC 8, TC 13, SC 17C, TC 21, SC 22F, TC 23, SC 23F, TC 32, TC 38, TC 56, TC 57, TC 64, TC 65, TC 69, TC 72, TC 77, SC 77B, TC 82, SC 86A, SC 86B, SC 86C, TC 88, TC 95, TC 105, TC 114 o CISPR o ISO/IEC JTC 1, SC 25

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IEEE Smart Grid Initiative

Summary

Full name of (standards) body / group	**IEEE Smart Grid Initiative**
Status	Active
Chairman	
Membership	
Website	http://smartgrid.ieee.org/

Activities

Summary of activities	IEEE is leveraging its strong technical foundation to develop standards, share best practices, publish developments and provide related educational offerings to advance technology and facilitate successful smart grid deployments throughout the world. The IEEE Smart Grid initiative was developed so that all IEEE technical societies, the Technical Activities New Technologies Directions Committee, and other groups involved in research and development activities in this area would coordinate their efforts. Key programs include: - Developing interoperability standards - Ensuring the smart grid is environment-friendly - Enacting protocols to maintain the grid's security
Website full description / ToR	http://smartgrid.ieee.org/ieee-smartgrid-news/15-ieee-research-and-development-efforts-in-smart-grid#background
Comments	- Among the huge number of smart grid related IEEE Standards is IEEE P1901 (Draft Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications) - Work on future standard future IEEE P1901.2 (Standard for Low Frequency (less than 500 kHz) Narrow Band Power Line Communications for Smart Grid Applications) has just begun , see http://grouper.ieee.org/groups/1901/2/

Output Documents

Name	Title	Type	Version	Date	Hyperlink
100+ Smart Grid related standards and standards in development, see http://smartgrid.ieee.org/standards					

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IETF

Summary

Full name of (standards) body / group	**IETF**
Status	
Chairman	
Membership	
Website	http://www.ietf.org/

Activities

Summary of activities	Many related activities, though no group addressing Smart Grids directly. IETF 76 BAR BoF on Smart Grids (November 2009), slides available at ftp://ftpeng.cisco.com/fred/SG-bar-bof/ Working Group 6lowpan (IPv6 over Low power WPAN), http://tools.ietf.org/wg/6lowpan/
Website full description / ToR	
Comments	

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ISO/IEC JTC 1 SWG Smart Grid

Summary

Full name of (standards) body / group	**ISO/IEC JTC 1** **Special Working Group Smart Grid**
Status	Planned
Chairman	U.S. is secretariat
Membership	ISO/IEC
Website	

Activities

Summary of activities	The SWG will have the following Terms of Reference: 1) Identify market requirements and standardization gaps for Smart Grid with particular attention to standards supporting the interoperability of Smart Grid technology and needed international standardization. 2) Encourage JTC 1 SCs to address the need for ISO/IEC Smart Grid International Standards. 3) Promote JTC 1 developed International Standards for Smart Grid and encourage them to be recognized and utilized by the industry and SDOs. 4) Coordinate JTC 1 Smart Grid activities with IEC, ISO, ITU-T and other SDOs that are developing standards for Smart Grid, especially the IEC SMB Strategic Group 3 on Smart Grid. 5) Periodically report results and recommendations to JTC 1 SWG-Planning and coordinate ongoing work with related plans. 6) Provide a written report of activities and recommendations in advance of the 2010 JTC 1 Plenary meeting in Belfast
Website full description / ToR	See ITU-T JCA-ICT&CC Doc 9, at http://www.itu.int/dms_pub/itu-t/oth/3C/02/T3C020000010010MSWE.doc
Comments	- A preliminary list of all ISO/IEC JTC 1 standards related to Smart Grids can be found on pp 5 in ISO/IEC JTC 1 N 10052, at http://isotc.iso.org/livelink/livelink?func=ll&objId=9086890&objAction=Open

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ITU-T FG Smart

Summary

Full name of (standards) body / group	**ITU Telecommunication Standardization Sector** **Focus Group on Smart Grid**
Status	Active
Chairman	Les Brown (Lantiq)
Membership	Open to individuals from 191 ITU Member States
Website	http://www.itu.int/ITU-T/focusgroups/smart/

Activities

Summary of activities	- Update living list of standards bodies, forums, and consortia dealing with smart grid - Collect visions and value propositions for the smart grid - Provide terminology and taxonomy necessary to support smart grid - Analyze communication networking requirement functions and capabilities to support smart grid - Gather new ideas relevant to and identify potential study areas to support smart grid - Identify use cases of smart grid that can be used to derive communication network requirements - Suggest future ITU-T study items and related actions - Identify potential impacts on standards development
Website full description / ToR	http://www.itu.int/ITU-T/focusgroups/smart/tor.html
Comments	

Output Documents

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4 May 2010

ITU-T Study Groups 5 and 15

Summary

Full name of (standards) body / group	**ITU Telecommunication Standardization Sector** **Study Group 5 – Environment and climate change** **Study Group 15 – Transport and access**
Status	Active
Chairman	SG 5: Ahmed Zeddam (France Telecom), SG 15: Yoichi Maeda (NTT, Japan)
Membership	ITU-T
Website	http://www.itu.int/ITU-T/studygroups/com05/ http://www.itu.int/ITU-T/studygroups/com15/

Activities

Summary of activities	No specific work for smart grid is done. Their work on ICT and climate change, and energy efficiency (SG 5) are closely related to smart grid. SG 15 work on home networking (in particular, power line telecommunication (PLT) technology) and transport network technology including IP, MPLS-TP and Ethernet are closely related to and could be used for smart grid.
Website full description / ToR	http://www.itu.int/ITU-T/studygroups/com05/ http://www.itu.int/ITU-T/studygroups/com15/
Comments	- Harmonization of PLT (PLC) technologies for smart grid is discussed in NIST PAP15 and in the ITU-T/IEEE-SA joint discussion group

Output Documents

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KSGA

Summary

Full name of (standards) body / group	**Korea Smart Grid Association**
Status	Active
Chairman	Mr. Ja-Kyun Koo
Membership	Korean utilities, telcos, service providers, manufacturers
Website	http://www.k-smartgrid.org/

Activities

Summary of activities	Major tasks of KSGA: 1) Projects for the establishment of smart grid infrastructure 2) Research and analysis smart grid 3) Role as a mediator between the government and private sector stakeholders 4) Standardization project for smart grid
Website full description / ToR	http://www.k-smartgrid.org/
Comments	- Established in May 2009

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KSGI

Summary

Full name of (standards) body / group	**Korea Smart Grid Institute**
Status	Active
Chairman	Mr. Kim Jae-sup
Membership	
Website	http://www.smartgrid.or.kr/eng.htm

Activities

Summary of activities	KSGI was launched in Aug. 2009 as the secretariat of Smart Grid Initiative and projects in Korea. The Smart Grid Initiative mainly targets the modernization of electric power systems. The mandate of KSGI is to manage comprehensively the government's Smart Grid roadmap; operate a Smart Grid test-bed, pilot city; and extend other policy support for Smart Grid related issues.
Website full description / ToR	http://www.smartgrid.or.kr/10eng2-1.php
Comments	

Output Documents

Name	Title	Type	Version	Date	Hyperlink
	Korea's Smart Grid Roadmap	Website / roadmap		2010	http://www.smartgrid.or.kr/Ebook/Roadmap2/Roadmap2.html

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Next Generation Energy Study Group

Summary

Full name of (standards) body / group	**Next Generation Energy Study Group (Japan)**
Status	Initial work completed, continue with a new committee name “Smart grid promotion council”
Chairman	Prof. Akihiko Yokoyama (University of Tokyo)
Membership	Closed
Website	

Activities

Summary of activities	Ministry of Economy, Trade and Industry (METI) of Japan held committee meetings on smart grid collecting key people mainly from the industry in Japan. They surveyed current status in the world and identified important areas for standardization. They will set up a new group, “Smart grid promotion council” to progress international standardization in the identified important areas.
Website full description / ToR	
Comments	

Output Documents

Name	Title	Type	Version	Date	Hyperlink
	International standardization on next generation energy system	Committee report		2010-01	(available in Japanese, only)

Last updated

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NIST Smart Grid Interoperability Standards Project

Summary

Full name of (standards) body / group	**National Institute of Standards and Technology Smart Grid Interoperability Standards Project**
Status	Active
Chairman	George W. Arnold (coordinator)
Membership	
Website	http://www.nist.gov/smartgrid/

Activities

Summary of activities	Under the Energy Independence and Security Act (EISA) of 2007, NIST has "primary responsibility to coordinate development of a framework that includes protocols and model standards for information management to achieve interoperability of smart grid devices and systems…"
Website full description / ToR	http://www.nist.gov/smartgrid/
Comments	- Hosts Smart Grid Interoperability Panel (SGIP), http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/SGIP

Output Documents

Name	Title	Type	Version	Date	Hyperlink
NIST SP 1108	NIST Framework and Roadmap for Smart Grid Interoperability Standards	Special Publication	V1.0	2010-01	http://www.nist.gov/public_affairs/releases/upload/smartgrid_interoperability_final.pdf
DRAFT NIST IR 7628	Smart Grid Cyber Security Strategy and Requirements	Interagency report	Second draft	2010-02	http://csrc.nist.gov/publications/drafts/nistir-7628/draft-nistir-7628_2nd-public-draft.pdf

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OASIS Blue Initiative

Summary

Full name of (standards) body / group	**Organization for the Advancement of Structured Information Standards Blue Initiative**
Status	Active
Chairman	Mr. David Chassin (PNNL)
Membership	OASIS members
Website	http://www.oasis-open.org/resources/white-papers/blue/

Activities

Summary of activities	OASIS Blue, as the new group is known, will look into standards for smart energy grids and "intelligent" buildings. OASIS Blue group will provide a "safe, neutral environment" in which businesses and authorities can cooperate to define protocols that will be recognized by the international standards community. The standards to be developed will focus on improving efficiency, reducing infrastructure cost and promoting a more effective use of resources. It will also promote the use of the Internet in improving the flow of information in the operation of smart grid systems. OASIS Blue brings together three seminal areas of standards work: energy, security, and transparency.
Website full description / ToR	http://www.oasis-open.org/resources/white-papers/blue/
Comments	- Hosts public discussion mailing list, at http://lists.oasis-open.org/archives/smartgrid-interest/200903/msg00001.html

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SEESGEN-ICT

Summary

Full name of (standards) body / group	**Supporting Energy Efficiency in Smart GENeration grids through ICT**
Status	Active
Chairman	Mr. Giorgio Franchioni (Coordinator, ERSE Italia)
Membership	24 partners from 15 EU countries
Website	http://seesgen-ict.erse-web.it/

Activities

Summary of activities	The main objectives of SEESGEN-ICT, a thematic network, consist in producing a harmonized set of priorities to accelerate the introduction of ICT into the Smart Distributed Power Generation Grids, investigating requirements, barriers and proposing solutions. SEESGEN-ICT produces policy recommendations, identify best practices and draw scenarios and roadmaps for the next generation of electric distribution network. The following topics are addressed: 1. ICT for management of smart grids with DER integration; 2. ICT for energy efficiency monitoring in smart grids; 3. ICT for demand-side integration (demand-response & demand-side management); 4. ICT for business models management; 5. ICT-system operation and environment protection in the operation of smart grids; 6. Supporting best practices through experiences in test facilities.
Website full description / ToR	http://seesgen-ict.erse-web.it/content/files/documents/Dissemination%20materials/brochure_FINAL_2.pdf
Comments	

Output Documents

Name	Title	Type	Version	Date	Hyperlink
D2-2	ICT requirements, offers and needs for managing Smart Grids with DER	Deliverable report	V1.0	2010-02	http://seesgen-ict.erse-web.it/content/files/documents/Deliverables/Deliverable%20D2-2%20R0.pdf
D3-2	ICT for Data Management and Inter-stakeholders service monitoring in Smart Grids (Requirements,	Deliverable report	V1.0	2010-02	http://seesgen-ict.erse-web.it/content/files/documents/Deliverables/Deliverable%20D3-2%20R0.pdf

	ICT solutions and needs for further developments)				
D5-2	Business Models Management - Prioritize Requirements; Assess ICT offer/needs	Deliverable report	V1.0	2010-02	http://seesgen-ict.erse-web.it/content/files/documents/Deliverables/Deliverable%20D5-2%20R0.pdf
D6-2	ICT and environment protection - Report on ICT requirements, offers and needs	Deliverable report	V1.0	2010-03	http://seesgen-ict.erse-web.it/content/files/documents/Deliverables/Deliverable%20D6-2%20R0.pdf

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SGA

Summary

Full name of (standards) body / group	**Smart Grid Australia**
Status	Active
Chairman	
Membership	Australian utilities, service providers, manufacturers, R&D
Website	http://www.smartgridaustralia.com.au/

Activities

Summary of activities	Smart Grid Australia is a non-profit, non-partisan alliance dedicated to an enhanced, modernized electric system. This alliance holds meetings, organizes committees, assists with government initiatives, and issues communications to accelerate progress. It can be an important source of ideas, inspiration, and influence for any organization interested in this burgeoning sector. What is SGA? - A vision for the electric system of the future – based on sound technical, operational and environmental principles. - A national initiative to help address the environmental issues in relation to the power industry and make that vision a reality by transforming the infrastructure, technologies and the market. - An alliance to move that initiative forward, to join voices in favour of a fully modern intelligent electric system. - An opportunity to participate in an important new market that will revolutionize how electricity is produced, delivered, and used.
Website full description / ToR	http://www.smartgridaustralia.com.au/index.php?page=about
Comments	

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SGCC

Summary

Full name of (standards) body / group	**State Grid Corporation of China**
Status	Active
Chairman	Mr. Liu Zhenya (SGCC President)
Membership	
Website	http://www.sgcc.com.cn/ywlm/default.shtml

Activities

Summary of activities	China has initiated a national Smart Grid project under SGCC leadership to be completed by 2020. Industry partners include Cisco, Intel, GE. The smart grid will be based on the current national grid, including ultra-high voltage power transmission lines. State Grid is increasing capital expenditure on its UHV projects, exceeding CNY200 billion ($29.3 billion) by 2012. Read more: http://www.nasdaq.com/aspx/stock-market-news-story.aspx?storyid=200905210825dowjonesdjonline000530&title=chinas-state-grid-corp-plans-to-build-smart-gridby-2020#ixzz0mZOgEkcO
Website full description / ToR	Presentation by SGCC President, http://www.pointview.com/data/2009/09/31/pdf/Zhenya-Liu-4917.pdf
Comments	- SGCC experts feature Smart Grids China 2010 international conference, http://www.smartgridssummit.com/china/

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SIP Forum Smart Grid SIG

Summary

Full name of (standards) body / group	**SIP Forum** **Smart Grid Special Interest Group**
Status	Active
Chairman	Mr. Arjun Roychowdhury (HSC), Mr. Richard Shockey (Shockey Consulting)
Membership	SIP Forum Membership: individuals and companies who want to contribute to the development of global Internet communications based on SIP standards, http://www.sipforum.org/content/view/17/47/
Website	http://www.sipforum.org/content/view/351/266/

Activities

Summary of activities	The focus of the SIP Forum Smart Grid SIG is to evaluate the appropriateness of using SIP as a protocol for the following Smart Grid areas: - HAN (Home Area Network) - Utility's Operational Network, including a. NAN (Neighborhood Area Network) b. Backhaul-Network c. Core Network - PEV (Plugin Electric Vehicle) – between Vehicles to the back-office control systems that manage charging, roaming, telemetry and other issues as well as inter-vehicle communication (for further study) The current priority areas as identified by the above mentioned document are: - Demand and Response and Consumer Energy Efficiency - Wide Area Situational Awareness - Electric Storage - Electric Transportation - Advanced Metering Infrastructure - Distribution Grid Management - Cyber Security - Network Communications
Website full description / ToR	http://www.sipforum.org/content/view/351/266/
Comments	

Output Documents

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TIA TR-45

Summary

Full name of (standards) body / group	**Telecommunications Industry Association (TIA)** **Engineering Committee TR-45** Mobile and Personal Communications Systems Standards
Status	Active
Chairman/Contact	Jane Brownley, TR-45 Chair Cheryl Blum, Vice President, Technology and Business Development
Membership	Open to Individual Member (IM) companies world-wide with a direct and material Interest
Website	tr45.tiaonline.org

Activities

Summary of activities	Engineering Committee TR-45 develops performance, compatibility, interoperability and service standards for mobile and personal communications systems. These standards pertain to, but are not restricted to, service information, wireless terminal equipment, wireless base station equipment, wireless switching office equipment, ancillary apparatus, auxiliary applications, inter-network and intersystem operations, interfaces, and wireless packet data technologies.
Website full description / ToR	The complete Mission & Scope of TIA TR-45 is available at http://www.tiaonline.org/standards/procedures/manuals/scope.cfm#TR45
Comments	TIA is very active in Smart Grid development through its active membership in the United States Government National Institute for Standards and Technology (NIST) Smart Grid Interoperability Panel (SGIP). NIST was given responsibility in the U.S. to develop a framework to support interoperability of smart grid devices and systems and they serve as the National Coordinator for this effort in the U.S. TIA's wireless committee, TR-45 (Mobile and Personal Communications Systems Standards), is providing input to NIST regarding Smart Grid via TR-45.5 (Spread Spectrum Digital Technology for cdma2000 air interface) and TR-45.8 (Core Network Technology) as well as via TR-45.3 (Time Division Digital Technology), by virtue of its relationship through ATIS Wireless Technologies and Systems Committee (WTSC) RAN (Radio Access Network) subcommittee.

Output Documents

TR-45 is working to develop standards that support and optimize packet data networks for Machine-to-Machine (M2M) and Smart Grid applications. In particular, TR-45 recently published TSB-474 *"Study for Machine-to-Machine (M2M) Communication for cdma2000 Networks."* In addition, TR-45 has standards published or under development that can be applied or used for interoperability of the Smart Grid including (but not limited to) the documents listed below.

Name	Title

TIA-41	Mobile Application Part
TIA-1022	Legacy MS Domain
TIA-835	cdma2000 packet data network
TIA-1041	Broadcast Multicast Service
TIA-1116	MIPv4 Enhancements
TIA-1117	MIPv6 Enhancements
TIA-1163	E-UTRAN - eHRPD Connectivity and Interworking
TIA-1163	WiMAX - HRPD Interworking
TIA-1165	cdma2000 Femtocell Network
TIA-1050	WLAN Interworking
TIA-1068	CDMA/GPRS Roaming
TIA-1100	AltPPP
TIA-1137	Converged Access Network
TIA-1160	1x/HRPD Support for PMIP
TIA-946	Enhanced Cryptographic Algorithms
TSB-474	M2M Study
TIA-2000.1-E	Introduction to cdma2000 Standard Spread Spectrum Systems
TIA-2000.2-E	Physical Layer Standard for cdma2000 Spread Spectrum Systems
TIA-2000.3-E	Medium Access Control (MAC) Standard for cdma2000 Spread Spectrum Systems
TIA-2000.4-E	Signaling Link Access Control (LAC) Standard for cdma2000 Spread Spectrum Systems
TIA-2000.5-E	Upper Layer (Layer 3) Signaling Standard for cdma2000 Spread Spectrum Systems
TIA-2000.6-E	Analog Signaling Standard for cdma2000 Spread Spectrum Systems
TIA-856-100-C	Overview for cdma2000 High Rate Packet Data Air Interface Specification
TIA-856-200-C	Physical Layer for cdma2000 High Rate Packet Data Air Interface Specification
TIA-856-300-C	Medium Access Layer for cdma2000 High Rate Packet Data Air Interface Specification
TIA-856-400-C	Connection and Security Layers for cdma2000 High Rate Packet Data Air Interface Specification
TIA-856-500-C	Application, Stream and Session Layers for cdma2000 High Rate Packet Data Air Interface Specification
TIA/EIA-136	TDMA Family of Standards

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03 March 2011

UCA IUG OpenSG

Summary

Full name of (standards) body / group	**UCA International Users Group** **Open Smart Grid**
Status	Active
Chairman	
Membership	UCA IUG has an international membership of 155 companies, see http://www.ucaiug.org/Lists/Member%20Companies/AllItems.aspx
Website	http://osgug.ucaiug.org/default.aspx

Activities

Summary of activities	Open SG is an administrative subcommittee responsible for sponsoring working groups as needed to address smart grid related requirements and interoperability guidelines development in a technology independent manner. The mission of the Open Smart Grid Technical Subcommittee is to foster enhanced functionality, lower costs and speed market adoption of Advanced Metering networks and Demand Response solutions through the development of an open standards-based information/data model, reference design & interoperability guidelines. The objectives are to: - Facilitate the broad adoption of advanced metering and demand response - Define what 'open standards' means for advanced metering infrastructures and demand response solutions - Diminish technical and functional risk concerns for utilities, regulators and ratepayers - Empower consumers with tools to better understand and manage their energy use - Foster industry innovation, efficiency and lower cost solutions
Website full description / ToR	http://osgug.ucaiug.org/org/default.aspx
Comments	- 4 Working Groups: 1. SG Security 2. SG Communications 3. SG Systems 4. SG Conformity

Output Documents

Name	Title	Type	Version	Date	Hyperlink

Last updated

30 April 2010

U.S. Department of Energy, OE

Summary

Full name of (standards) body / group	**U.S. Department of Energy, Office of Electricity Delivery & Energy Reliability**
Status	Active
Chairman	
Membership	
Website	http://www.oe.energy.gov/smartgrid.htm

Activities

Summary of activities	Standardized architectural designs and interfaces are important to stimulate developments toward a smart grid. OE has supported development and testing of the IEEE 1547 Series of Standards on interconnecting distributed resources with electric power systems by the National Renewable Energy Laboratory. In addition, OE has supported the Pacific Northwest National Laboratory and the GridWise Architecture Council to identify areas for standardization to allow significant levels of interoperation among electric grid system components. Furthermore, OE also supports public/private partnerships such as the GridWise Alliance and the Grid Modernization Collaborative to coordinate and collaborate on smart grid development. These and other OE R&D activities, organized below under four key Technology Areas, will directly contribute to achieving the performance features of a smart grid: - Architecture & Communication Standards - Monitoring & Load Management Technologies - Advanced Components & Operating Concepts - Modeling & Simulation
Website full description / ToR	http://www.oe.energy.gov/smartgrid_02.htm
Comments	

Output Documents

Name	Title	Type	Version	Date	Hyperlink
	"GRID 2030" A national vision for electricity's second 100 years	Vision report	V1.0	2003	http://www.oe.energy.gov/DocumentsandMedia/Electric_Vision_Document.pdf
	The Smart Grid: An Introduction		V1.0	2008	http://www.oe.energy.gov/DocumentsandMedia/DOE_SG_Book_Single_Pages(1).pdf
	Smart Grid System Report		V1.0	2009-07	http://www.oe.energy.gov/DocumentsandMedia/SGSRMain_090707_lowres.pdf
PNNL-	The Smart Grid:	Technical	Revision	2010-01	http://www.pnl.gov/main/publicatio

19112	An Estimation of the Energy and CO2 Benefits	Report (prepared by PNNL)	1	ns/external/technical_reports/PNNL-19112rev1.pdf

Last updated

29 April 2010

ZigBee Alliance Smart Energy

Summary

Full name of (standards) body / group	**ZigBee Alliance** **ZigBee Smart Energy**
Status	Active
Chairman	Mr. Bob Heile
Membership	http://www.zigbee.org/About/OurMembers.aspx
Website	http://www.zigbee.org/Markets/ZigBeeSmartEnergy/Overview.aspx

Activities

Summary of activities	ZigBee Smart Energy offers utilities and energy service providers secure, easy-to-use wireless home area networks (HAN) for managing energy. Smart Energy gives these groups and their customers the power to directly communicate with thermostats and other smart appliances. New advanced metering and demand response programs can be implemented in homes easily and securely because of ZigBee wireless technology. Now utilities and energy service providers can easily implement energy management and efficiency programs to meet changing government requirements. ZigBee Smart Energy version 2.0 will be IP-based and offer a variety of new features. The development of this solution is ongoing and the ZigBee Alliance has made two documents that guide development available for public review. The ZigBee Alliance develops its standards as an open and participation-based organization using well defined consensus processes that gather numerous contributions from industry and technical experts. The Alliance has already entered into a number of liaison relationships with key stakeholder groups to engage directly in the cooperative development process for the HAN and the Smart Grid. Those groups include NIST, HomePlug Powerline Alliance, Wi-Fi Alliance, ESMIG, DLMS, IETF and IPSO.
Website full description / ToR	http://www.zigbee.org/Markets/ZigBeeSmartEnergy/Version20Documents.aspx
Comments	

Output Documents

Name	Title	Type	Version	Date	Hyperlink
	Smart Energy Marketing Requirements	Guide	V2.0	2010-04	http://www.zigbee.org/Markets/ZigBeeSmartEnergy/Version20Documents.aspx (requires registration)
	Smart Energy Technical Requirements	Guide	V2.0	2010-04	http://www.zigbee.org/Markets/ZigBeeSmartEnergy/Version20Documents.aspx (requires registration)