Convergence of Smart Home and Building Architectures

Industry Connections Activity Initiation Document (ICAID)

Version: 1.4, 12 June 2013

Instructions

- Instructions on how to fill out this form are shown in red. It is recommended to leave the instructions in the final document and simply add the requested information where indicated.
- Shaded Text indicates a placeholder that should be replaced with information specific to this ICAID, and the shading removed.
- Completed forms, in Word format, or any questions should be sent to the IEEE Standards Association (IEEE-SA) Industry Connections Committee (ICCom) Administrator at the following address: industryconnections@ieee.org.
- The version number above, along with the date, may be used by the submitter to distinguish successive updates of this document. A separate, unique Industry Connections (IC) Activity Number will be assigned when the document is submitted to the ICCom Administrator.

1. Contact

Provide the name and contact information of the primary contact person for this IC activity. Affiliation is any entity that provides the person financial or other substantive support, for which the person may feel an obligation. If necessary, a second/alternate contact person's information may also be provided.

Name: Oleg Logvinov
Email Address: oleg.logvinov@st.com
Phone: +1 732 322 0155
Employer: STMicroelectronics
Affiliation: STMicroelectronics

2. Type of Activity

Specify whether this activity will be entity-based (participants are entities, which may have multiple representatives, one-entity-one-vote), or individual-based (participants represent themselves, one-person-one-vote).

Entity Based

3. Purpose

3.1. Motivation and Goal

Briefly explain the context and motivation for starting this IC activity, and the overall purpose or goal to be accomplished.

This IEEE Standards Association Industry Connections activity is related to pre-standardization efforts in the domain of Convergence of Smart Home and Building Architectures. One of the motivations for this activity is the fact that there are striking similarities among the architectures of the Smart Home and Building environments as described from various points of view including Electric Vehicle (EV), Home or Building Energy Management, Infotainment, etc. But a gap exists for interworking among these various domains. We are experiencing the unification of user interfaces through our TV and Smart Phones/Tablets, but an effort is needed to enable a seamless experience spanning multiple domains. There is also a question of secure separation of data belonging to various domains (ehealth, energy management, utility, EV, infotainment, vehicle diagnostics, etc.). These security/privacy requirements are likely to drive future architectures, adding another dimension to the inter-domain interworking. Interoperability with existing building automation and control systems is another dimension.

The domains to be addressed by this work include:

1. Comfort (ehealth, ambient assisted living, infotainment, light, temperature, air quality, etc.),
2. Security, Privacy, Safety and Access Control,
3. Fire Safety,
4. Energy Management (Disciplines such as heat, cold, steam, fossil energy sources, electricity, DHW (domestic hot water) and all equipment for washing, drying as well as the kitchen. Also “renewables” which includes PV (photovoltaics), solar collectors and gray water management),
5. Maintenance and diagnostics.

The interworking among multiple application domains has a potential of driving the following benefits:

- Increased granularity, visibility and awareness,
- Increased level of usability,
- Simplified interaction from the operator point of view,
- Better coordination among multiple application domains at the M2M level,
- Platform for virtual aggregation of multiple homes and buildings,
- Semantic operability among applications,
- Reduced implementation risks,
- Enables new business models.

3.2. Related Work

Provide a brief comparison of this activity to existing, related efforts or standards of which you are aware (industry associations, consortia, standardization activities, etc.).

There are many bodies addressing this area from the industry specific point of view. Examples of such work include:

- Home Gateway Initiative (HGI, www.homegatewayinitiative.org)
- Artemis IoE (www.artemis-ioe.eu)
- ISO/IEC 15118
- DKE committee 716, 1711 and other groups
- CEN/TC 247 Building Automation and Controls: Draft WI to develop "smart building" standard – focus "commercial buildings"
- RASSA
- ETSI OneM2M and M2M
- CEN/CENELEC ETSI Smart Grid Coordination Group
- CEN/CENELEC SSCC-CG
- ITU-T Smart Grid Focus Group (JCA, SG, HN), ITU-T SG-13 and ITU-T SG-16
- Open Geospatial Consortium
- IPSO

There is no known dedicated standardization activity that addresses the convergence of these multiple domains.

3.3. Potential Markets Served

Indicate the main beneficiaries of this work, and what the potential impact might be.

The main beneficiaries of this activity would be end users, owners, and operators, and of course manufacturers of products for the Smart Home and Building market. Service Providers, Utilities, and EV manufactures would benefit as well.

4. Estimated Timeframe

Indicate approximately how long you expect this activity might take to achieve its proposed results (e.g., number of weeks/months/years). Also indicate when you expect this activity to be reviewed by ICCom for completion or possible extension (maximum two years).

Expected Completion/Review Date: April 2015

5. Proposed Deliverables

Outline the anticipated deliverables and output from this IC activity, such as documents, proposals for standards, conferences and workshops, databases, computer code, etc., and indicate the expected timeframe for each.

- Workshops and roundtables providing a platform for industry collaboration
- Recommendations that are applicable for new and existing dwellings
- Elaborate and define requirements for a method to allow for functional levels (flexible integration of different disciplines and functional levels among disciplines)
- Analysis of standardization gaps
- White papers related to the gap analysis and Smart Home and Building architectures

- Potential Project Authorization Request (PAR) proposals for potential IEEE Standards

The deliverables are intended to be complementary to existing activities on IoT, electric mobility (http://www.gartner.com/it-glossary/electro-mobility-e-mobility), and IoE.

6. Funding Requirements

Outline any contracted services or other expenses that are currently anticipated, beyond the basic support services provided to all IC activities. Indicate how those funds are expected to be obtained (e.g., through participant fees, sponsorships, government or other grants, etc.). Activities needing substantial funding may require additional reviews and approvals beyond ICCom.

Entity members will be asked to make modest financial contributions to support the work of the activity when necessary. The funds will be utilized to organize workshops, roundtables, and meetings.

7. Management and Procedures

7.1. IEEE Sponsoring Committee

Indicate whether an IEEE sponsoring committee of some form (e.g., an IEEE Standards Sponsor) has agreed to oversee this activity and its procedures.

Has an IEEE sponsoring committee agreed to oversee this activity?: Yes

If yes, indicate the sponsoring committee's name and its chair's contact information, and skip the remaining parts of this section (skip 7.2 and 7.3, below).

Sponsoring Committee Name: Corporate Advisory Group (CAG)
Chair's Name: Dennis Brophy
Chair's Email Address: dennis_brophy@mentor.com
Chair's Phone: +1 503 685 0893

7.2. Activity Management

If no IEEE sponsoring committee has been identified in 7.1 above, indicate how this activity will manage itself on a day-to-day basis (e.g., executive committee, officers, etc).

This Industry Connections Activity will be self-governed by an Executive Committee and the Activity Members.

7.3. Procedures

If no IEEE sponsoring committee has been identified in 7.1 above, indicate what documented procedures will be used to guide the initial operations of this activity (e.g., the *Industry Connections Activity Baseline Procedures*).

A set of policies and procedures, based on the ICCom Industry Connections Entity-Based Policies and Procedures baseline, will be developed and used.

8. Participants

8.1. Stakeholder Communities

Indicate the stakeholder communities (the types of companies or other entities, or the different groups of individuals) that are expected to be interested in this IC activity, and will be invited to participate.

Examples of stakeholders include:

- Manufacturers of Electrical Vehicles and Electric Chargers, Settop Boxes and Home Gateways, Electric Meters, Appliances, Renewable Energy and Storage Systems, Building Automation and Control Systems such as Home Energy Management/Building Energy Management systems,
- Service, Application, and (local or cloud) Platform Providers,
- Semiconductor companies, University and Educational Institutions performing research in relevant areas.

8.2. Expected Number of Participants

Indicate the approximate number of entities or individuals expected to be actively involved in this activity.

20-25 entities are expected to participate in the initial phase of the activity. It is likely that this activity would grow to fifty members.

8.3. Initial Participants

Provide a list of the entities or individuals that will be participating from the outset. It is recommended there be at least three initial participants for an entity-based activity, or five initial participants (each with a different affiliation) for an individual-based activity.

Use the following table for an entity-based activity:

Entity	Primary Contact	Additional Representatives
Infineon	Andrea Carletti Andrea.carletti@infineon.com	Reiner John Reiner.John@infineon.com Rainer Matischek Rainer.matischek@infineon.com
Siemens	Johannes Reinschke Johannes.Reinschke@siemens.com	Randolf Mock Randolf.Mock@siemens.com
STMicroelectronics	Oleg Logvinov oleg.logvinov@st.com	
Lantiq	Peter Caldera Peter.Caldera@lantiq.com	Sascha Dern sascha.dern@lantiq.com Olaf Wachendorf

		olaf.Wachendorf@lantiq.com
SINTEF	Ovidiu Vermesan Ovidiu.Vermesan@sintef.no	
State Grid Corporation of China	Dr. Jianbin Fan jianbin-fan@sgcc.com.cn	
Huawei	W. Charlton Adams Jr. (Chuck) Wilbert.Adams@Huawei.com	
CISC Semiconductor	Markus Pistauer m.pistauer@cisc.at	

Use the following table for an individual-based activity:

Individual	**Contact Information**	**Employer**	**Affiliation**
Name	Email Address Phone Number	Entity Name	Entity Name