

Systems & Components for Energy Routers

Industry Connections Activity Initiation Document (ICAID)

Version: 1.0, 3 December 2012

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: Matt Wilkowski

Email Address: wilkowski@enpirion.com

Phone: 908 894 6053

Employer: Enpirion

Affiliation: Enpirion

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).

Individual 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.

Energy routers are being developed with a new technology that combines rectification of ac to dc, dc-dc switch mode power conversion, dc to ac power conversion as well as communication and control protocols to replace existing distribution type transformers to accomplish more intelligent bi-directional power. The goal of this project will be to identify gaps in existing standards and recommended practices as the new technology is commercially introduced. This activity promotes the new technology by identifying existing standards and recommended practices which in turn forms an initial infra structure supporting the applicability and feasibility.

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.).

Technology development at universities has been funded by the government at levels of Engineering Resource Center (ERC) as well as specific Advanced Research Projects Agency - Energy (ARPA-E) grants.

Electric Power Research Institute (EPRI) projects address Solid state transformers and bi-directional power delivery

Corporate projects (GE, Gridco Systems) have released information about specific product developments

Existing standards within PES and PELS may be applicable in part.

3.3. Potential Markets Served

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

Power utilities, photo voltaic systems, renewable energy technologies

Manufacturers developing components and systems for purpose of commercializing distributed energy resources (DER) and bi-directional power flow

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).

24 months

Expected Completion/Review Date: 12/2014

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.

Phase 1: Database review of existing standards and their applicability

Phase 2: Identify existing standards and recommended practices that can be applied immediately as well as modifications to existing standards and recommended practices

Phase 3: Identify areas where new standards and recommended practices may need to be developed, as well as find a lead organization for the required development

Each of the individual phases of the activity would be documented by a white paper
A workshop may be proposed between phases 1 & 2 or after phase 3 as required

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 ICom.

None are expected beyond funding of a workshop which would be funded by attendees' fees (approximately \$100 per attendee).

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?: No

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: Committee Name

Chair's Name: Full Name

Chair's Email Address: who@where

Chair's Phone: Number, including country code

Additional sponsoring committee information, if any.

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).

Chairman, Vice Chairman, Secretary

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*).

ICCom Baseline Policies and Procedures for Individual-based activities

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.

Power Utilities, Transformer Manufacturers, Renewable Energy System and Component Manufacturers, Government Agencies (DOE, etc.), EPRI, Universities

8.2. Expected Number of Participants

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

Twenty (20)

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
Entity Name	Contact Name Email Address Phone Number	Name, Email Address Name, Email Address

Use the following table for an individual-based activity:

Individual	Contact Information	Employer	Affiliation
Matt Wilkowski	wilkowski@enpirion.com 908 894 6053	Enpirion	Enpirion
Dr. Subhashish Bhattacharya	sbhatta4@ncsu.edu 919-744-1428	North Carolina State University	North Carolina State University
Bill Bartley	william_bartley@hsb.com 860 722 5483	The Hartford Steam Boiler Inspection and Insurance Co.	The Hartford Steam Boiler Inspection and Insurance Co.
Bill Chiu	bill.chiu@sce.com 909 274 1186	Southern California Edison	Southern California Edison
Erich Gunther	erich@enernex.com 865 218-4600	EnerNex	Enernex
Jeff Lo	jlo@gridcosystems.com 650 387 7424	Gridco	Gridco