

Electric Vehicle Wireless Power Transfer
Industry Connections Activity Initiation Document (ICAID)
Version: 1.2, 12 February, 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.

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Email Address: jtaiber@clemson.edu

Phone: +1 864 906 61 61

Employer: Clemson University

Affiliation: Clemson University International Center for Automotive Research

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 Connection Activity is related to pre-standardization efforts in the domain of Electric Vehicle Wireless Power Transfer with a particular focus on dynamic wireless charging as these efforts address the range limitation of electric vehicles as well as the cost aspect of the vehicle energy storage and complement the current standardization activities of the SAE (J2954) which is centered on stationary charging.

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.).

The standards SAE J 2954 (draft standard, wireless charging of Electric and Plug-In Hybrid Vehicles) and UL 2750 (wireless charging safety) are currently in development. Associated to SAE J2954 from a communication perspective are SAE J2847/6 (draft standard, wireless charging communication between Plug-In Electric Vehicles and the Utility Grid), SAE J2931/6 (draft standard, Digital Communication for Wireless Charging Plug-In Electric Vehicles) and SAE J2836/6 (Use Cases for Wireless Charging Communication between Plug-In Electric Vehicles and Utility Grid). The following roadmaps provide an overview about the standardization ecosystem that are relevant for the domain of electric vehicle wireless charging: ANSI EVSP Standardization Roadmap www.ansi.org/evsp
German Standardization Roadmap for Electromobility
<http://www.elektromobilitaet.din.de/cmd;jsessionid=F752FE51BB0E6F29AAC9BDE6062A3F84.1?level=tpl-home&languageid=en>

There is no dedicated standardization activity being known that is directly related to dynamic wireless charging of electric vehicles.

3.3. Potential Markets Served

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

The main beneficiaries of the industry standards activity are Automotive OEM's, component suppliers (vehicle components, infrastructure components), infrastructure service providers (such as utilities) as well as information and communication technology companies. The group will identify future standardization needs and address these needs in its working documents to accelerate the subsequent standardization process and develop a technology framework that can be utilized to agree on within the standardization process. The key impact of the standards activity is to develop an eco-system of technology partners that support the electrification of the transportation sector.

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).

This activity will coincide with DOE funded research activities on wireless charging and is being synchronized with the ongoing standardization activities at SAE on wireless charging (J2954). The activity will be initialized with a F2F workshop and webinar planned to occur in the second quarter of 2013. After the completion of a pre-standard document, the activity is expected to transfer over to a standards activity.

Expected Completion/Review Date: June 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.

- IEVC forums (2013) and IEVC conference (2014) addressing wireless charging
- IEVC track days to showcase wireless charging technologies
- Analysis of standardization gaps in wireless charging
- White paper for dynamic wireless charging
- White paper for testing dynamic wireless charging
- Guidelines for integrated system design of stationary and dynamic wireless charging
- Technology roadmap for EVWPT
- Develop PAR proposals for potential IEEE Standards (including what might go into SAE or others)

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 a modest financial contribution to support the work of the activity. The funds will be utilized to organize workshops and test/showcase events and to potentially support travel of required experts in need of financial support.

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).

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.

University and Educational Institutions performing research in wireless electric vehicle charging.

Electric Utilities which would participate in EVWPT programs

Telecommunications companies which would facilitate wireless charging

Gov't Agencies (federal, state, municipal) involved with transportation infrastructure

Manufacturers of Electrical Vehicles

Manufacturers of dynamic and stationary EV charging systems and components

Road construction firms

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 meeting. Based on experience with electric vehicle stationary charging activities, growth in this dynamic charging activity is expected to reach upwards of 100 active participants.

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
DOE	John Miller millerjm@ornl.gov	John Bobbitt John.bobbitt@srnl.doe.gov
Portland State University	John Beard gbeard@pdx.edu	
Duke Energy	Michael Rowand Michael.rowand@duke-energy.com	
Parise Research	Mark Ferri markferri@comcast.net	
Evatran	Tom Hough though@evatran.com	
Better World	Victor Huang v.huang@ieee.org	
Clemson University	Joachim Taiber jtaiber@clemson.edu	Andre Lorico alorico@g.clemson.edu
Keio University	Hiroaki Nishi west@sd.keio.ac.jp	
Privacom Ventures	Bill Byrd amosbyrd@aol.com	
Hanoi University of Science & Technology	Min C. Ta minhtc-auto@mail.hut.edu.vn	
Indian Institute of Science & Technology	Chandan Chakraborty chakraborty@ieee.org	
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University of Auckland	Valeriy Vyatkin v.vyatkin@auckland.ac.nz	
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Zhejiang University	Hao Ma mahao@zju.edu.cn	
TU Delft	Pavol Bauer p.bauer@tudelft.nl	
Intel	Michael Condry Michael.w.condry@intel.com	
SEW-Eurodrive	Tim Schumann TSchumann@seweurodrive.com	
NCSU	Srdjan Lukic smlukic@ncsu.edu	

Use the following table for an individual-based activity:

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