

P1451.7

Submitter Email: kang.lee@nist.gov
Type of Project: Modification to Approved PAR
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PAR Expiration Date: 31-Dec-2011
Status: Modification to a Previously Approved PAR
Root PAR: P1451.7 **Approved on:** 22-Mar-2007
Project Record: 1451.7

1.1 Project Number: P1451.7
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for a Smart Transducer Interface for Sensors and Actuators - Transducers to Radio Frequency Identification (RFID) Systems Communication Protocols and Transducer Electronic Data Sheet Formats

Old Title: Standard for a Smart Transducer Interface for Sensors and Actuators - Transducers to Radio Frequency Identification (RFID) Systems Communication Protocols and Transducer Electronic Data Sheet Formats

3.1 Working Group: Sensor and RFID Integration Working Group (IM/ST/SRFID)

Contact Information for Working Group Chair

Name: Curtis Rozeboom
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Name: Kang Lee
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3.2 Sponsoring Society and Committee: IEEE Instrumentation and Measurement Society/TC9 - Sensor Technology (IM/ST)

Contact Information for Sponsor Chair

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4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 02/2009

4.3 Projected Completion Date for Submittal to RevCom: 02/2011

5.1 Approximate number of people expected to be actively involved in the development of this project: 25

5.2 Scope: This standard defines data formats to facilitate communications between Radio Frequency Identification (RFID) systems and smart RFID tags with integral transducers (sensors and actuators). The standard defines new Transducer Electronic Data Sheet (TEDS) formats based on the IEEE 1451 family of standards. This standard also defines a command structure and specifies the communication methods with which the command structure is designed to be compatible.

Old Scope: This standard defines communication methods and data formats for transducers (sensors and actuators) communicating with RFID tags that follow the ISO/IEC 24753 standard. The standard also defines Transducer Electronic Data Sheet (TEDS) formats based on the IEEE 1451 family of standards and protocols for accessing TEDS and transducer data. It adopts necessary interfaces and protocols to facilitate the use of technically differentiated, existing technology solutions. It doesn't specify transducer design or signal conditioning.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: The purpose of this standard is to provide methods for interfacing transducers and RFID tags, and for reporting

Old Purpose: There is currently no openly defined independent interface standard between transducers and RFID tags. Each

transducer data within the RFID infrastructure. This standard will reduce the cost and time required to integrate transducer and RFID systems, as well as providing a means for device and equipment interoperability.

vendor builds its own interface. Without such standard, transducer interfacing and integration to RFID tags and systems are time-consuming and all vendors duplicated efforts are economically unproductive. The purpose of this standard is to provide interfaces and methods for interfacing transducers to RFID tags and reporting transducer data within the RFID infrastructure. It also provides means for device and equipment interoperability.

5.5 Need for the Project: RFID technologies are rapidly emerging as the means of tracking products and assets. Standards are being developed to address these needs. Sensors can provide information about the condition of the products. And there is a great need to provide sensor data as part of the supply chain reporting. However there is a lack of openly defined standard interfaces between sensors and RFID tags. Since the IEEE 1451 suite of smart transducer interfaces for sensors and actuators are recognized sensor interface standards in industry, this project can fill that gap by providing such sensor-to-RFID tag interfaces to meet industry need.

5.6 Stakeholders for the Standard: The stakeholders include sensor/network manufacturers, RFID tag/system manufacturers, system integrators, sensor/RFID system users, retailers, shipping container manufacturers, shippers/carriers.

Intellectual Property

6.1.a. Has the IEEE-SA policy on intellectual property been presented to those responsible for preparing/submitting this PAR prior to the PAR submittal to the IEEE-SA Standards Board?: Yes

If yes, state date: 02-Feb-2009

6.1.b. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.c. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: No

7.2 International Activities

a. Adoption

Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?: Yes

Organization: ISO/IEC JTC1

Technical Committee Name: Automatic Identification and Data Capture Techniques

Technical Committee Number: SC31

Contact Name: Craig K. Harmon

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b. Joint Development

Is it the intent to develop this document jointly with another organization?: Yes

Organization: ISO/IEC JTC1

Technical Committee Name: Automatic Identification and Data Capture Techniques

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c. Harmonization

Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: No

8.1 Additional Explanatory Notes (Item Number and Explanation): The scope and purpose of the PAR are changed to reflect the content of the standard, which is no longer air interface dependent. It is intended to be air interface agnostic for covering a wider range of applications. It no longer follows the ISO/IEC 24753 standard. In fact, this IEEE sensor-RFID communication standard will probably be referenced by other ISO RFID standards.