P1451.5

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Type of Project: Revision to IEEE Standard 1451.5-2007
PAR Request Date: 16-Oct-2017
PAR Approval Date: 06-Dec-2017
PAR Expiration Date: 31-Dec-2021
Status: PAR for a Revision to an existing IEEE Standard
Root Project: 1451.5-2007

1.1 Project Number: P1451.5
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for a Smart Transducer Interface for Sensors and Actuator -- Wireless Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats
Changes in title: Standard for a Smart Transducer Interface for Sensors and Actuator -- Wireless Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats

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3.2 Sponsoring Society and Committee: IEEE Instrumentation and Measurement Society/TC9 - Sensor Technology (IM/ST)
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3.3 Joint Sponsor: IEEE Industrial Electronics Society/Industrial Electronics Society Standards Committee (IES/IES)
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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: 10/2019
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2020

5.1 Approximate number of people expected to be actively involved in the development of this project: 20
5.2 Scope: This project establishes a standard for wireless communication methods and data format for transducers (sensors and actuators). The standard defines a TEDS based on the IEEE 1451 concept and protocols to access TEDS and transducer data. It adopts necessary wireless interfaces and protocols to facilitate the use of technically differentiated, existing wireless technology solutions. It does not specify transducer design, signal conditioning, wireless system physical design or use, or use of TEDS.

5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: This document will not include a purpose clause.
**Changes in purpose:** Many companies are developing various wireless communication interfaces and protocols for sensors. An openly defined wireless transducer communication standard, which may accommodate various existing wireless technologies, will reduce risk for users, transducer manufacturers, and system integrators. It will enhance the acceptance of the wireless technology for transducers connectivity.

5.5 **Need for the Project:** Many companies are developing various wireless communication interfaces and protocols for sensors applications. An openly defined wireless transducer communication interface standard, which may accommodate various existing wireless technologies, will reduce risks for users, transducer manufacturers, and system integrators. It will enhance the acceptance of the wireless technology for sensors and actuators connectivity for Internet of Things (IoT) and Cyber Security Systems (CPS) applications. It will also facilitate sensor and actuator data interoperability.

5.6 **Stakeholders for the Standard:** The stakeholders include wireless technology vendors, manufacturers, system integrators, and users of sensors, actuators, and control systems used in Cyber Physical Systems (CPS) and Internet of Things (IoT) applications. The application domains of the standard include power grid, industrial automation, building automation, aviation and aerospace, transportation systems, health care, mobile communications, environment monitoring, geospatial applications, and smart city, etc.

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**Intellectual Property**

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. 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 Joint Development
   Is it the intent to develop this document jointly with another organization?: No

8.1 **Additional Explanatory Notes:** The Standard is revised to update with the latest, relevant wireless protocols for Internet of Things (IoT) and Cyber Physical Systems (CPS) applications, such as Narrow Band IoT (NB-IoT).