P1451-99

Submitter Email: kang.lee@ieee.org
Type of Project: New IEEE Standard
PAR Request Date: 17-Oct-2016
PAR Approval Date: 07-Dec-2016
PAR Expiration Date: 31-Dec-2020
Status: PAR for a New IEEE Standard

1.1 Project Number: P1451-99
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Harmonization of Internet of Things (IoT) Devices and Systems

3.1 Working Group: Devices and Systems Harmonization Working Group (IM/ST/DASH)
Contact Information for Working Group Chair
  Name: William Miller
  Email Address: mact-usa@att.net
  Phone: 301-500-9277
Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Instrumentation and Measurement Society/TC9 - Sensor Technology (IM/ST)
Contact Information for Sponsor Chair
  Name: Kang Lee
  Email Address: kang.lee@ieee.org
  Phone: 301-975-6604
Contact Information for Standards Representative
None

3.3 Joint Sponsor: IEEE Industrial Electronics Society/Industrial Electronics Society Standards Committee (IES/IES)
Contact Information for Sponsor Chair
  Name: Victor Huang
  Email Address: vklhuang@aol.com
  Phone: 408-839-7884
Contact Information for Standards Representative
  Name: Victor Huang
  Email Address: vklhuang@aol.com
  Phone: 408-839-7884

3.4 Joint Sponsor: IEEE Sensors Council/Standards Committee (SEN/SC)
Contact Information for Sponsor Chair
  Name: Gerard Hayes
  Email Address: gerardjameshayes@gmail.com
  Phone: 9199000603
Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 01/2018
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 02/2019

5.1 Approximate number of people expected to be actively involved in the development of this project: 40
5.2 Scope: This standard defines a method for data sharing, interoperability, and security of messages over a network, where sensors, actuators and other devices can interoperate, regardless of underlying communication technology. The backend of such a globally scalable, secure and interoperable network would be based on the eXtensible Messaging and Presence Protocol (XMPP), and rely on infrastructural components, or

bridges, with standardized interfaces that provide real-time conversion of other IoT and M2M protocols, such as those based on CoAP (Constrained Application Protocol), HTTP (Hypertext Transfer Protocol), MQTT (Message Queuing Telemetry Transport Protocol), AMQP (Advanced Message Queuing Protocol), etc., and other interoperability interfaces, such as those provided by the IEEE 1451 Smart Transducer Interface, oneM2M, OMA LWM2M (Open Mobile Alliance Lightweight M2M), OIC (Open Internet Connection), UPnP (Universal Plug and Play), IPSO (Internet Protocol for Smart Objects) Alliance, etc.

The standard utilizes the advanced capabilities of the XMPP protocol, such as providing globally authenticated identities, authorization, presence, life cycle management, interoperable communication, IoT discovery and provisioning. Descriptive meta-data about devices and operations will provide sufficient information for infrastructural components, services and end-users to dynamically adapt to a changing environment. Key components and needs of a successful Smart City infrastructure will be identified and addressed. This standard does not develop Application Programming Interfaces (APIs) for existing IoT or legacy protocols.

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 define a metadata bridge to facilitate IoT protocol transport for sensors, actuators, and devices. The standard addresses issues of security, scalability, and interoperability. This standard can provide significant cost savings and reduce complexity, and offer a data sharing approach leveraging current instrumentation and devices used in industry.

5.5 Need for the Project: The current implementations of IoT devices and systems do not provide a means to share data and for an owner of devices to authorize who might have the right to access the devices' data including control of these devices.

5.6 Stakeholders for the Standard: The stakeholders include sensor/network manufacturers, system integrators, and smart sensor/network users of Smart Cities, Smart Grid, SCADA/process control systems, smart transportation systems, e-health devices and systems, smart phones/devices, geospatial/military systems, and other IoT devices and systems.

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

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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

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8.1 Additional Explanatory Notes: In 3.1 working group chair: William Miller <mact-usa@att.net>, phone: 201-3861; Vice Chair: Kang Lee <kang.lee@ieee.org>, phone: 240-722-7446.
There is no way to change Kang Lee's phone number in the website. It should be changed from 301-975-6604 to 240-722-7446.