

P802.15.8

Submitter Email: bheile@ieee.org

Type of Project: New IEEE Standard

PAR Request Date: 02-Oct-2010

PAR Approval Date:

PAR Expiration Date:

Status: Unapproved PAR, PAR for a New IEEE Standard

1.1 Project Number: P802.15.8

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Standard for Personal Space Communications - MAC and PHY specifications for wireless connectivity with a broad range of data rates for optimized access to integrated personal services

3.1 Working Group: Wireless Personal Area Network (WPAN) Working Group (C/LM/WG802.15)

Contact Information for Working Group Chair

Name: Robert F Heile

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Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)

Contact Information for Sponsor Chair

Name: Paul Nikolich

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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: 03/2012

4.3 Projected Completion Date for Submittal to RevCom: 10/2012

5.1 Approximate number of people expected to be actively involved in the development of this project: 60

5.2 Scope: This standard defines the PHY and MAC specifications for a broad range of data rates from 10 Kbps to 55 Mbps dynamically scalable, optimized for personal space communications typically operating in a range of 30 meters or less in the 2.4GHz and 60GHz unlicensed bands without interference to other IEEE 802 standard technologies.

It support features including simultaneous use of multiple channels, dynamic grouping, multiple peer-to-peer communications, location of devices, multicasting, coverage extension, low latency, fast synchronization and association of devices, low power consumption, and enhanced security.

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

5.4 Purpose: This standard provides a communication means to a personal space involving various devices associated with a single individual to be controlled and managed in a personally tailored fashion.

It provides, in a mobile personal space, cost effective wireless connectivity with a broad range of data rates from low rate data to voice/video streaming and broadcasting in the unlicensed bands. The data rate is dynamically scalable to support simultaneous multiple streaming of various information such as control data, voice, audio, and video on a single platform. This standard supports dynamic topology configuration to accommodate the change of services.

5.5 Need for the Project: Given ubiquity and increasing number of personal devices with no commonalities , it is beneficial to have a unified platform.

There are standards that could serve parts of the PSC, but no single standard supports all combinations of simultaneous use of multiple channels, dynamic scalability of data rates, QoS (reliability and latency), low power consumption, fast device synchronization and association, device management, security control and configurability of topologies.

Therefore there is a need for a new standard that is optimized for and will serve the PSC interfacing with other communication

infrastructures such as 3G/4G mobile networks, 802.11, other 802.15, and IP networks.

5.6 Stakeholders for the Standard: The stakeholders include but are not limited to:

Telecom industry

Mobile device manufacturers

Game device manufacturers and content providers

Consumer electronics industry

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?: Yes

If Yes please explain: ISO/IEC 29157:2010 is the base standard

and answer the following

Sponsor Organization: JTC 1/SE6

Project/Standard Number: 29157

Project/Standard Date: 09-Jun-2010

Project/Standard Title: Information technology -- Telecommunications and information exchange between systems -- PHY/MAC specifications for short-range wireless low-rate applications in the ISM band

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes (Item Number and Explanation):

 Definition of Personal Space Communications (PSC)

In general, personal space is defined as a physical and virtual space which a person regards as psychologically the person's. From the view point of this standard, the personal space is defined as a physical space surrounding a person within 30 meters radius. Personal space communications is connectivity between the individual and the devices in the personal space for exchange of information and management of the environment.

Applications and service examples of PSC

Applications based on the proposed standard for PSC include multiple peer-to-peer communications, group games requiring low latency, conferencing, multi-lingual simultaneous interpretation system, personal broadcasting, stereo wireless karaoke, wireless tour guide, wireless audio, drive-in shop operations audio, mobile VoIP, Internet radio, mobile IPTV, remote control, wireless PBX, and convergence of such applications.

As an example, if you are standing under an art piece in a museum, you can use your PSC enabled device to listen to the information about the display on any of channels of your preferred language. At the same time, the PSC device allows you to talk to the tour guide for specific questions.

An important part of the standard is the low latency, and wireless speakers and karaoke are good examples of this. The lip synchronization between the video on the TV and the sound from the speakers can be made to be undetectable.

Quick association of devices around the user is another important aspect of this standard. Not like today's lengthy and cumbersome procedure to get connected to a wireless network and authorized by the router or a server, a PSC device will be instantly able to see devices in the space with a limited access for identification and association purposes. Once a PSC user sees what devices are around, the user can choose and associate with any of available devices which are ready to be connected and provide services. This feature will instantly enable the user to use lots of services such as point of sale contents, audio streaming to an audio system, video streaming to a TV, and an instant group game through group association.