
P802.15.22.3

Submitter Email: apurva_mody@yahoo.com**Type of Project:** New IEEE Standard**Project Request Type:** Modify / New**PAR Request Date:** 09 Mar 2018**PAR Approval Date:** 14 May 2018**PAR Expiration Date:** 31 Dec 2020**PAR Status:** Active**Root PAR:** P802.15.22.3**Root PAR Approved on:** 21 Aug 2014

1.1 Project Number: P802.15.22.3**1.2 Type of Document:** Standard**1.3 Life Cycle:** Full Use

2.1 Project Title: Standard for Spectrum Characterization and Occupancy Sensing

3.1 Working Group: Wireless Personal Area Network (WPAN) Working Group(C/LM/802.15 WG)**3.1.1 Contact Information for Working Group Chair:****Name:** Robert Heile**Email Address:** bheile@ieee.org**3.1.2 Contact Information for Working Group Vice Chair:****Name:** PATRICK KINNEY**Email Address:** pat.kinney@kinneyconsultingllc.com**3.2 Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee(C/LM)**3.2.1 Contact Information for Standards Committee Chair:****Name:** Paul Nikolich**Email Address:** p.nikolich@ieee.org**3.2.2 Contact Information for Standards Committee Vice Chair:****Name:** James Gilb**Email Address:** gilb@ieee.org**3.2.3 Contact Information for Standards Representative:****Name:** James Gilb**Email Address:** gilb@ieee.org

4.1 Type of Ballot: Individual**4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:** Nov 2018**Change to Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:** Nov-2016- 2018**4.3 Projected Completion Date for Submittal to RevCom:** Oct 2019**Change to Projected Completion Date for Submittal to RevCom:** Oct-2017- 2019

5.1 Approximate number of people expected to be actively involved in the development of this project: 10**Change to Approximate number of people expected to be actively involved in the development of this project:** ~~30~~ 10**5.2 Scope of proposed standard:** This Standard defines a Spectrum Characterization and Occupancy Sensing (SCOS) System. It defines the formats for system configuration and spectrum measurement parameters. It includes protocols for reporting measurement information that allow the coalescing of results from multiple systems. The standard leverages interfaces and primitives that are derived from IEEE Std. 802.22-2011. It uses any available transport mechanism to control and manage the system, and to share sensing data. The standard provides means for conveying value added sensing information to various spectrum database services.**Change to scope of proposed standard:** This Standard defines a Spectrum Characterization and Occupancy Sensing (SCOS) System. It ~~specifies~~ defines the formats for measurement system parameters configuration and device spectrum behaviors measurement parameters. It includes protocols for reporting measurement information that ~~enable~~ allow the coalescing ~~the~~ of results from multiple ~~such devices~~ systems. The standard leverages interfaces and primitives that are derived from IEEE Std. 802.22-2011, ~~.~~ and ~~It~~ uses any on-line available transport mechanism ~~available~~ to control ~~to~~ and ~~achieve~~ manage the control system, and ~~management~~ to ~~of~~ share the sensing ~~system~~ data. Interfaces ~~The~~ and ~~standard~~ primitives are ~~provides~~

~~provided means for conveying value added sensing information to various spectrum-sharing database services. This standard specifies a device operating in the bands below 1 GHz and a second device operating from 2.7 GHz to 3.7 GHz.~~

5.3 Is the completion of this standard contingent upon the completion of another standard? No

5.4 Purpose: The purpose is to specify operating characteristics of the components of the Spectrum Characterization and Occupancy Sensing System.

5.5 Need for the Project: Recently, Federal Communications Commission (FCC), National Telecommunications and Information Administration (NTIA) in the United States and other regulators such as OfCom UK, have broadened their horizons for cooperative spectrum sharing approaches in order to optimize spectrum utilization. For example see the PCAST Report (See §8.1). FCC/ NTIA are in the process of opening new spectrum bands which specifically require multi-levels of regulated users (e. g. primary, opportunistic etc.) to share the spectrum. There is emphasis on greater spectrum efficiencies, spectrum sharing and spectrum utilization, which requires not only database driven configuration of the radios, but systems that can provide spectrum occupancy at a particular location and at a particular time.

This standard will help fulfil this need by creating a Spectrum Characterization and Occupancy Sensing System. This will enable improved spectrum utilization and support for other shared spectrum applications, hence benefitting the regulators and users alike.

5.6 Stakeholders for the Standard: Manufacturers and users of semiconductor, personal computer, wireless devices and sensors, consumer electronic devices, mobile devices, wireless internet service providers etc.

6.1 Intellectual Property

6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?

No

6.1.2 Is the Standards Committee aware of possible registration activity related to this project?

No

7.1 Are there other standards or projects with a similar scope? Yes

Explanation: There are no completed or on-going activities that are similar to the proposed SOS project within the IEEE 802 community. However, there are a few other similar standards in this space which are listed below.

a. IEEE Std. 1900.6-2011: IEEE Standard for Spectrum Sensing, Interfaces and Data Structures for Dynamic Spectrum Access and other Advanced Radio Communications Systems

b. IEEE P1900.6a: IEEE Draft Standard for Spectrum Sensing Interfaces and Data Structures for Dynamic Spectrum Access and other Advanced Radio Communication Systems Amendment: Procedures, Protocols and Data Archive Enhanced Interfaces

It is to be noted that although these P1900 standards describe communication protocols, they do not specify the operating characteristics for the sensor.

7.1.1 Standards Committee Organization: IEEE P1900 Dynamic Spectrum Access Networks Standards Committee

Project/Standard Number: IEEE Std. 1900.6-2011

Project/Standard Date: 22 Apr 2011

Project/Standard Title: a. IEEE Std. 1900.6-2011: IEEE Standard for Spectrum Sensing, Interfaces and Data Structures for Dynamic Spectrum Access and other Advanced Radio Communications Systems

b. IEEE P1900.6a: IEEE Draft Standard for Spectrum Sensing Interfaces and Data Structures for Dynamic Spectrum Access and other Advanced Radio Communication Systems Amendment: Procedures, Protocols and Data Archive Enhanced Interfaces

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

8.1 Additional Explanatory Notes : This provides further explanation to Item 5.5 on the Need the Spectrum Characterization and Occupancy Sensing System.

[1] President' s Council of Advisors on Science and Technology Report - Realizing Full Potential of the Government Held Spectrum to Spur Economic Growth.

http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf

Note from the NesCom admin: after the June 2019 NesCom meeting, this PAR number was changed from P802.22.3 to P802.15.22.3, and the WG is now C/LM/WG802.15.

Changes to Additional Explanatory Notes : This provides further explanation to Item 5.5 on the Need the

Spectrum Characterization and Occupancy Sensing System.[1] President' s Council of Advisors on Science and Technology Report - Realizing Full Potential of the Government Held Spectrum to Spur Economic Growth.http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf Note from the NesCom admin: after the June 2019 NesCom meeting, this PAR number was changed from P802.22.3 to P802.15.22.3, and the WG is now C/LM/WG802.15.