

## P802.22.3

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**Submitter Email:** [apurva\\_mody@yahoo.com](mailto:apurva_mody@yahoo.com)

**Type of Project:** New IEEE Standard

**PAR Request Date:** 06-Jul-2014

**PAR Approval Date:** 21-Aug-2014

**PAR Expiration Date:** 31-Dec-2018

**Status:** PAR for a New IEEE Standard

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**1.1 Project Number:** P802.22.3

**1.2 Type of Document:** Standard

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Standard for Spectrum Characterization and Occupancy Sensing

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**3.1 Working Group:** Wireless Regional Area Networks Working Group (C/LM/WG802.22)

**Contact Information for Working Group Chair**

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

**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:** 11/2016

**4.3 Projected Completion Date for Submittal to RevCom:** 10/2017

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 30

**5.2 Scope:** This Standard defines a Spectrum Characterization and Occupancy Sensing (SCOS) System. It specifies measurement parameters and device behaviors. It includes protocols for reporting measurement information that enable coalescing the results from multiple such devices. The standard leverages interfaces and primitives that are derived from IEEE Std. 802.22-2011, and uses any on-line transport mechanism available to achieve the control and management of the system. Interfaces and primitives are provided 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 dependent 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.

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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

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

**If Yes please explain:** 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.

### and answer the following

**Sponsor 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 Joint Development

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

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**8.1 Additional Explanatory Notes (Item Number and Explanation):** 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](http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_spectrum_report_final_july_20_2012.pdf)