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| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **IEEE 802.16s Amendment Outline** | |
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| Re: | Call for Contributions: IEEE 802.16 Working Group on Broadband Wireless Access  GRIDMAN Task Group: Narrower Channel Operation [IEEE 802.16-16-0028-00-Gdoc] | |
| Abstract | Preliminary Outline for content of IEEE 802.16s amendment | |
| Purpose | For discussion at Session #103 802.16 GRIDMAN Taskgroup | |
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802.16s Preliminary Amendment Outline

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**General**

The IEEE 802.16s amendment may apply PHY, MAC and security layer modifications to the IEEE 802.16 standard and associated parameters. This preliminary document outline lists the sections which may need to be amended based on the 802.16-2012 version.

**Structure of the IEEE 802.16s Amendment**

1. General section:
   * IEEE Std 802.16s-2016 Front Cover
   * Title page
   * Notice to Users
   * Participants
   * Historical Information regarding IEEE Std. 802.16
2. Introduction

This will state the objective of the IEEE 802.16s amendment to Support Fixed and Mobile Wireless Access in Channel Bandwidth of up to 1.25 MHz. Perhaps we could be here more specific, e.g., state that 802.16s will support operation in channel bandwidths between 100 KHz and 1.25 MHz.

1. Conformance test methodology

This will specify how a product can be qualified to comply with IEEE 802.16s

1. Contents

This section will eventually include all the sections in IEEE 802.16 that have been amended. An initial table of content is proposed below.

1. Ammendments

The actual new text to be added in each section is outlined in the Proposed Content section below.

**Proposed Content**

1. **Overview**

A new section in the Overview is required to des**c**ribe the scope of the amendment for Narrower Channel operation.

1. **Normative references**

Certain electrical utility standards such as NERC-CIP may need to be added if referenced by other aspects of the amendment (e.g. Security).

1. **Definitions**

New definitions may be required, e.g., Distributed Automation.

1. **Abbreviations and acronyms**

New abbreviations and acronyms to be added as required, e.g., DA

1. **Service–specific CS**

We may want to add new types of CS, e.g., support of serial DNP3 protocol. Also, we may want to add support for a more powerful PHS scheme.

1. **MAC common part sublayer**

Changes are needed to reduce MAC layer overhead in order to maximize data throughput in narrower channels.

1. **Security sublayer**

Changes may be needed in order to meet Utility industry requirements such as NERC-CIP.

1. **Physical sublayer**

Changes are anticipated to paragraph 8.4, WirelessMAN-OFDMA PHY. For example

* + Paragraph 8.4.1 states that channel bandwidths allowed shall not be less than 1.0 MHz.
  + Section 8.4.6, OFDMA subcarrier allocations, is likely to require an ammendment.
  + New channel sizes, associated FFT schame, subcarrier spacing, symbol rate and other associated parameters need to be specified.

1. **Configuration**

Configuration changes may be needed to support operation in narrower channels

1. **Parameters and constants**

New or modified parameters and constants may be needed to support operation in narrower channels

1. **TLV encoding**

New or modified TLV encodings may be needed to support operation in narrower channels

1. **Systems profiles**

One or more new profiles will need to be added. These are likely to be OFDMA TDD profiles.

1. **MIB Modules**

No additional MIB modules are anticipated

1. **Management interface and procedures**

No additional management interfaces and procedures are anticipated

1. **Mechanism for coordinated existance**

New or modified mechanisms may be required to leverage the new system profiles.

**?. “New informative section”**

Description of IEEE 802.16 operation in narrower channels, including specific frequency bands of interest and the applicable FCC regulations.