|  |  |  |
| --- | --- | --- |
| Project | **IEEE 802.16 Broadband Wireless Access Working Group <**<http://ieee802.org/16>**>** | |
| Title | **IEEE 802.16s Guidelines for Proposals** | |
| Date Submitted | **2016-07-28** | |
| Source(s) | GRIDMAN Task Group | Voice:  E-mail: |
| Re: | GRIDMAN Task Group: Narrowband Channel | |
| Abstract | Guidelines for 802.16s Proposals | |
| Purpose | For comment prior to session #105 | |
| Notice | *This document does not represent the agreed views of the IEEE 802.16 Working Group or any of its subgroups*. It represents only the views of the participants listed in the “Source(s)” field above. It is offered as a basis for discussion. It is not binding on the contributor(s), who reserve(s) the right to add, amend or withdraw material contained herein. | |
| Copyright Policy | The contributor is familiar with the IEEE-SA Copyright Policy <http://standards.ieee.org/IPR/copyrightpolicy.html>. | |
| Patent Policy | The contributor is familiar with the IEEE-SA Patent Policy and Procedures:  <<http://standards.ieee.org/guides/bylaws/sect6-7.html#6>> and <rmation is located at <<http://standards.ieee.org/board/pat/pat-material.html>> and <<http://standards.ieee.org/board/pat>>. | |

IEEE 802.16s Draft Guidelines for Proposals

July 28, 2016

## Introduction

The draft development process will follow this approach.

Phase 1: Agree on the overall structure of the PHY layer and its principles of operation. The proposals and operation should address the requirements in the SRD, and conform to the scope defined in the PAR. Capture the design principles of the amendment into this System Description Document (SDD).

Phase 2: Consider MAC changes needed to support the PHY operation and further optimizations for efficiency to satisfy the SRD requirements.

* Text Proposals should provide a table of system description parameters and performance analysis addressing the requirements in the SRD.
* Text proposals should describe any necessary (consequential) MAC changes and how they affect the performance metrics
* Text Proposals can be adopted into the SDD with the approval of the Task Group.

When the SDD has adopted proposals meeting the requirements of the SRD,

Phase 3 will map the SDD into the base standard, which then leads us to a ToC and outline for the draft amendment.

## Contribution Structure

Contributions should provide proposals for specific profiles meeting the SRD requirements

Profiles could be a General profile that addresses all but the “edge case”

Or specialized profiles for optimizing specific use cases: can extend toward general profile. E.G.

* Longest range vs shorter range
* Lowest BW vs wide bandwidth
* Shortest possible latency

## System Description Parameters

* Primary design specifications (defined in the proposal)
  + Subcarrier spacing
  + Sampling Clock
  + FFT Size
  + Permutations, number of data/pilot/guard subcarriers
  + Preamble and CDMA coding scheme to fit the channel
  + Variations between UL and DL
  + Changes to MAC data: DL-MAP, UL-MAP etc.
* Performance metrics: derived from or affected by primary specifications
  + PHY Throughput
  + Goodput
  + Frame Size / Latency
  + Peak to Average Power Ratio
  + Inter-carrier Interference
  + Inter-symbol Interference, Delay Spread
  + Interference management, MIMO, beam forming
  + CINR performance
  + Out of band emissions
  + Mobility capability

Proposals should include:

Table of System Description Parameters

Performance Analysis (with reference to SRD)

## Guidelines for proposal evaluation

* Proposals are evaluated on how well they
  + Address the requirements in the SRD
  + Specifies the minimum set of essential changes to the OFDMA PHY defined in 802.16-2012 as necessary to meet the requirements
  + Address the performance metrics from the SDD
    - PHY Throughput
    - Goodput
    - Frame Size / Latency
    - Peak to Average Power Ratio
    - Inter-carrier Interference
    - Inter-symbol Interference, Delay Spread
    - Interference management, MIMO, beam forming
    - CINR performance
    - Out of band emissions
    - Mobility capability
  + Provides sufficient information and supporting data to allow the understanding of how the requirements and performance are met
  + Ability to maintain performance across the frequency range of interest