Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Style guide for writing the IEEE 802.16m amendment**
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Re:	802.16m Chair's request.
Abstract	Style guide for the development of the 802.16m amendment.
Purpose	To provide a document framework for the amendment and to provide guidelines for writing contributions to the amendment.
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Style guide for writing the IEEE 802.16m amendment

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1. Introduction

This style guide has been developed for aiding TGm in developing the IEEE 802.16m amendment. It is meant to be complementary material to the IEEE Standards Style Manual [1], which takes precedence in all cases of conflicts.

2. The IEEE 802.16m document structure

The IEEE 802.16m document is an amendment and thus follows the rules for writing an amendment defined in [1]. However, as the changes introduced in the amendment are considered major, often superseding or supplanting substantial portions of the base standard, the Advanced Air Interface (AAIF) will be added as a new stand-alone clause. The below subclauses offer some guidance how to treat clauses in IEEE 802.16-2009.

2.1 Clause 1: Overview

The overview contained in Clause 1 and its subclauses of IEEE 802.16-2009 will be shared by the AAIF and the legacy protocols. Consequently, Clause 1 will be amended to incorporate details regarding the AAIF.

2.2 Clause 2: References

References in IEEE 802.16-2009 may be cited by the AAIF specification. New references shall be introduced by amending Clause 2 of IEEE 802.16-2009. Please consult [1] clause 10.4.3.

2.3 Clause 3: Definitions

All definitions in IEEE 802.16-2009, Clause 3 remain applicable and the terms may be used in defining the AAIF. Changes to existing definitions are discouraged, as they may break the specification contained in IEEE 802.16-2009.

New definitions shall be written as amendments to Clause 3 in IEEE 802.16-2009 and new terms defined shall be unique. It is highly desirable that terms used in the amendment are consistent with the terms used in the System Description Document (SDD), see [4].

2.4 Clause 4: Abbreviations and acronyms

All abbreviations and acronyms introduced in IEEE 802.16-2009, Clause 4 remain applicable and may be used in defining the AAIF without introduction.

New abbreviations and acronyms shall be introduced as amendments to Clause 4. New abbreviations and acronyms shall be unique. Refer to clauses 10.6 and 13.6 in [1] for information on how to introduce and use abbreviations and acronyms in text.

2.5 Clause 5: Service specific CS

Any changes to the service specific CS definitions shall be introduced as amendments to Clause 5 of [2].

2.6 Clause 6: MAC

There should be no need to amend Clause 6 when defining the AAIF. Note that references to specific sub-clauses and material in these sub-clauses is permitted.

2.7 Clause 7: Security

There should be no need to amend Clause 7 when defining the AAIF. Note that references to specific sub-clauses and material in these sub-clauses is permitted.

2.8 Clause 8: PHY

There should be no need to amend Clause 8 when defining the AAIF. Note that references to specific sub-clauses and material in these sub-clauses is permitted.

2.9 Clause 9: Configuration

Clause 9 has no relevance for AAIF work. There should be no need to amend Clause 9.

2.10 Clause 10: Parameters and constants

There should be no need to amend this clause. Parameter definitions for the AAIF shall be included in the new AAIF clause.

2.11 Clause 11: TLV encodings

Pending decision on how to format signaling messages.

2.12 Clause 12: System profiles

A profile for 802.16m is expected to be part of Clause 12.

2.13 Clause 13: MIB modules

Introduce new material into Clause 13 using the same methodology as is used in [2].

3. Guidelines concerning the new AAIF clause

3.1 Tentative outline

A tentative outline for the AAIF clause is provided in Annex A.

3.2 Referencing material from IEEE 802.16-2009

3.2.1 Referencing a subclause

When referencing material from IEEE 802.16-2009, the reference should be as specific as possible. Also it has to be understood that all requirements defined in the referenced clause become requirements for the AAIF.

The referenced text shall not be amended. Sentences like "The terminal shall fulfill all requirements in clause 6.2 with the exception of ..." shall not be used. If a significant portion of text from IEEE 802.16-2009 is re-used with changes related to the AAIF, all the requirements shall be concisely captured in a new paragraph.

For referenced subclauses, the requirements contained in the parent and child subclauses do not apply unless specifically referenced.

Informative clauses should not be referenced.

3.2.2 Referencing a figure

If changes are required, the changed figures shall be introduced. The referenced figure shall not be amended, it is referenced as-is.

3.2.3 Referencing a table

If changes are required, a table reflecting the changes shall be introduced. The referenced table shall not be amended, it is referenced as-is.

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4. Contribution format

All contributions shall use a submission template from the 802.16 Document Submission web page [3] and the proposed text shall be written according to [1].

802.16m amends 802.16-2009 as updated by any approved Amendments. Any changes to the draft shall be indicated with colored text. An example of correct contribution mark-up is given below.

4.1 Contribution mark-up example

In this example, some existing text in the draft is changed, other text from the baseline is included and modified, existing text in the draft is deleted, and some text from the baseline is modified:

> The following four primitive parameters characterize the OFDMA symbol:
>
> — BW: This is the nominal channel bandwidth.
>
> — N_{used}: Number of used ~~carriers~~ <u>subcarriers (which includes the DC subcarrier)</u>.
>
> — n: Sampling factor. This parameter, in conjunction with BW and Nused determines the subcarrier spacing, and the useful symbol time. This value is set ~~to 8/7~~ <u>as follows: for channel bandwidths that are a multiple of 1.75MHz then n=8/7 else for channel bandwidths that are a multiple of any of 1.25, 1.5, 2 or 2.75MHz then n=28/25 else for channel bandwidths not otherwise specified then n=8/7.</u>
>
> — G: This is the ratio of CP time to "useful" time. The following values shall be supported: 1/32, 1/16, 1/8, and 1/4.

In the above example, it can be seen that the draft has mark-up material related to N_{used} which is unchanged, but the new material is indicated by the red text and the specific changes are indicated by strike through and underscore mark-up.

5. General guidelines for writing new material

The AAIF may contain new material. When writing new material keep the following in mind:

- Be brief and unambiguous; clearly state each requirement and its target.
- Capture each requirement once and only once.
- If there is a need to restate, e.g. for purposes of clarity, an already existing requirement, please use references.
- Avoid long and convoluted sentences when describing procedures. Break the description into smaller steps.
- Clearly identify the actor and action of the sentence.
- Keep the sentences in the active style. Avoid the use of passive sentence structure.
- Use the required standards language "shall", "may", "should".
- Strictly avoid using "will", "might", "could", and present tense action verbs "is", "are", etc.
- Use illustrative diagrams.
- Add informative text only when absolutely necessary, as it clutters the document.
- Don't make any statements of performance, benefits or drawbacks of solutions.
- Avoid negative requirements. If necessary, use of "shall not" is allowed. Use of "may not" or "might not" is prohibited.
- When defining protocol dependent on a peer value, only specify the parameter value allowing the other peer to operate interoperably.

6. References

[1] 2007 IEEE Standards Style Manual, IEEE-SA, 2007, http://standards.ieee.org/guides/style/index.html

[2] IEEE Std 802.16-2009

[3] 802.16 Document Submission Instructions, 802.16 Working Group, http://ieee802.org/16/submit.html

[4] 802.16m System Description Document

Annex A

(informative)

15. Advanced air interface

15.1 Introduction

15.2 Medium access control

15.2.x Security

15.3 Physical layer

15.3.1 Duplex modes

15.3.2 Downlink and uplink multiple access schemes

15.3.3 OFDMA parameters

15.3.4 Frame structure

15.3.5 Downlink physical structure

15.3.6 Uplink physical structure

...

15.3.7 RF Requirements

15.3.8 Inter-Radio access technology functions

15.3.9 Inter-BS Synchronization

15.4 Constants and parameters

15.5 Control primitives