IEEE P802.15

Wireless Personal Area Networks

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Technical editor comments to the P802.15.6ma\_D1.18 |
| Date Submitted | 4th June 2024 |
| Source | Tero Kivinen | E-mail: kivinen@iki.fi |
| Re: | TG6ma draft P802.15.6ma\_D1.18 |
| Abstract | This document provides comments to the P802.15.6ma\_D1.18 |
| Purpose | Help making draft ready for letter ballot |
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| Release | The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15. |

1. Styleguides

All editors should read the working group editors instructions, and the IEEE Standard association style guide.

Related documents:

* WG 15 working group editors instructions:
https://mentor.ieee.org/802.15/dcn/10/15-10-0324-07-0000-wg-editors-instructions.pdf
* IEEE Standard association page for instructions:
https://standards.ieee.org/develop/drafting-standard/
* IEEE SA Standards Style Manual (PDF):
https://mentor.ieee.org/myproject/Public/mytools/draft/styleman.pdf
* MEC Checklist (PDF):
<https://mentor.ieee.org/myproject/Public/mytools/draft/chklist.pdf>
1. General issues with PDF format
	1. PDF Index is missing

The document should have PDF index, i.e., left side should provide links to allow jumping to specific sections like this:

* 1. PDF page numbers are not aligned

The PDF page numbers and the page numbers at the bottom of the page are not matching. This means that if I jump in PDF to page 55, I will end up in the page which shows 45 at the end of page.

This will cause confusion during the balloting process as we can never know which page number the reviewer used, i.e., whether he gave PDF page numbers or the page numbers at the bottom of page.

Either remove the roman page numbers from the frontmatter, or update the PDF page numbers afterwards using Acrobat distiller (Acrobat distiller allows you to define page number ranges so that different parts of document have different styles of page numbers).

Most likely it is easier to just make sure that first page is PDF page number 1, and the bottom of page also says 1 etc.

* 1. PDF Links are missing

All mentions of the Figures, Tables, and references to the sections should be proper cross-references, i.e., they should show up in PDF, so that when you click on the reference it does jump to the given location.

For example:

* PDF page 27, page 17, line 3, clauses 5.1 and 6.1
* PDF page 27, page 17, line 4, Table 1
* PDF page 27, page 17, line 25, clause 9.1
* Page 45 Broken link. (x = 39%, y = 46%)
* Page 45 Broken link. (x = 39%, y = 43%)
* Page 46 Broken link. (x = 49%, y = 57%)
* Page 47 Broken link. (x = 47%, y = 52%)
* Page 47 Broken link. (x = 36%, y = 41%)
* Page 47 Broken link. (x = 54%, y = 29%)
* Page 47 Broken link. (x = 54%, y = 25%)
1. Title page

The title page should tell which document this is revision of, and the actual project name and document file name. Example from the P802.15.4me revision:

In this case the text should say:

**IEEE P802.15.6ma/D01**
May 2024
(Revision of IEEE Std 802.15.6-2012)

and the actual title should not include the document file name, only the title:

**Draft Standard for Wireless Body Area Network**

The first page does not need the heading or footers.

1. Introduction

The file name in the box should match the current file name, i.e., change “P802.15.6-Rev.A/D1.15” to “P802.15.6ma/D1.18”. This same filename should be used in the footer, so fix the “P802.15.6-Rev.A/D1.18” to “P802.15.6ma/D1.18”, as I think we are using 6ma now instead of Rev.A format.

Note, that in the first letter ballot version we most likely want to rename the document to be P802.15.6ma/D01 or something, as there is no need to capture revision numbers prior letter ballot.

1. Scope and purpose

Section 1.1 lists old and new scope, this is not needed. This is going to be new revision of the standard, thus it should list the scope as it will be after this work is finished, i.e., the P802.15.6ma PAR scope.

Same for the purpose clause.

1. Nits
	1. Footer placement

The footer should three lines all centered, i.e.:

40
Copyright © 2024 IEEE. All rights reserved.
This is unapproved IEEE Standards Draft, subject to change.

* 1. Normative references

NIST Special Publication 800-38B has been updated and current publication year is 2016.

The Recommendation for Block Cipher Modes of Operation: The CCM Mode for Authentication and Confidentiality document number is wrong, it is NIST Special Publication 800-38C, not 38B, and the year of publication is 2007.

* 1. “Absolute” verbiage

The IEEE SA Standards Style Manual section 10.3 recommend against using absolute verbiage:

For example, words such as “ensure,” “guarantee,” “always,” “maximize,” “minimize,” etc., should be modified if they are inaccurate. Substitutions might include “often,” “reduce,” or “improve.” For example, “to ensure safety” might be changed to “to improve safety” or “to prevent” might be changed to “to reduce.”

Check all uses of at least “ensure”, and “guarantee”. There is lots of “always” terms, so checking those might also be useful. The few cases of “maximize”, and “minimize” might be ok.

* 1. Use of terms safe and safety

The IEEE SA Standards Style Manual section 10.4 recommends avoiding use of safe or safety:

Avoid the use of the word safe in a standard unless the condition or practice referenced by the word safe has been tested under all cases as being, in fact, safe. Typically, this is not the case. Thus, unless it can be demonstrated that such condition or practice is safe, safe should not be used.

There are few cases where safe is used in the standard, and use of those words should be checked.

* 1. Do not use shall not

Shall not is recommended, as there is no way to test that. Try changing that to positive requirement. For example changing:

If the value of macBeaconOrder = 15, the coordinator shall not transmit Beacon frames except when requested to do so, such as on receipt of a Beacon Request command.

To

If the value of macBeaconOrder = 15, the coordinator shall transmit Beacon frames only when requested to do so, such as on receipt of a Beacon Request command.

And so on.

* 1. IEEE 802.15.8

In section 6.4.4 there is reference to the IEEE 802.15.8. Is this really correct?

* 1. IEEE Standard names

The proper way to refer IEEE standards is “IEEE Std 802.15.4”, not “IEEE 802.15.4” etc. Use the “Std” (without perioid) in the middle. There is incorrect formats at least in section 4.7, 4.7.2, 5.3.1, 5.3.3.2 5.3.3.6.1, 6.4.4, 6.5.6, 6.5.7.2, 6.5.7.3, 9, 9.1.2.1.1, and Annex A.

There is also multiple references to the IEEE 802.15.6 Std, which should be IEEE Std 802.15.6.

Section 5.3.3.6.1 uses IEEE 802.15.6-2012 Std and IEEE 802.1D Std, instead of IEEE Std 802.15.6-2012, and IEEE Std 802.1D.

That same subsection also has IEEE 802.16.6ma which should most like be “IEEE Std 802.15.6ma”.

Section 5.5.2 referes to IEEE 802.1Q, and IEEE 802.1D without “Std”.

* 1. Using references to IEEE Standards without IEEE Std

In section 4.7.2 PDF page 28, page 18, lines 13, and 21, there is text saying:

During CCA and beacon periods, a BAN coordinator may analyze the type of synchronization preamble detected from a 15.6ma, 15.6, or 15.4 system.

And

As shown in Figure 6, coexistence environment classes 0, 1, 2, and 4 perform enhanced dependability. These classes are relatively easy to detect as those involve 15.6ma, 15.6, or 15.4 radios, whose beacons are known and radios are compatible. Coexistence environment classes 3, 5, 6, and 7 deal with interference from other radios.

This refers to 15.6ma, 15.6 and 15.4 etc without the IEEE Std 802 prefix, making it not clear what is meant.

Change them to say “detected from a IEEE Std 802.15.6 or IEEE Std 802.15.4 systems”. Note, that IEEE Std 802.15.6ma is included as part of IEEE Std 802.15.6, so there is no need to explictly mention both of them.

There is one more of similar case in line 8.

* 1. Note formatting

When adding notes, use the format:

NOTE—This is note.

The current draft uses “NOTE:” instead of the “NOTE—“ format.

See IEEE SA Standards Style Manual section 18.1.

* 1. Personal pronouns

IEEE SA Standards Style Manual section 10.6.1 recommends to avoid using we, I etc. In section 6.3 there two cases of we, and similarly in 9.1.16.3 two more. In annex C.1 there is one more we.

* 1. Extra instructions in section 1.3

In section 1.3 there is extra editors instructions that should be removed:

<This subclause is mandatory, and the definitions of shall, should, may, and can appear as defined in 6.4.7 of the IEEE SASB Operations Manual and shall not be modified.>

* 1. Spell out small integers

IEEE SA Standards Style Manual section 14.2 says:

c)In general text, isolated numbers less than 10 should be spelled out. However, in equations, tables, figures, and other display elements, Arabic numerals should be used.

For example PDF page 32, page 22 in Table 2, the Description of the Protocol Version has numbers “1” and “0”, but they are part of text, not as column in table. The “0” at the Octet column is left to as arabic number, but the Description text should be changed to:

It shall be set to one. The value zero is for the IEEE Std 802.15.6-2012.

(Note, also fixed the reference to the IEEE Std 802.15.6-2012 from “legacy 802.15.6-2012 Std.”).

Similarly Table 3 should say “is set to all ones (broadcast)”.

The section 5.3.3.1.8 forward there is several cases where it says “is set to 1” or “is set to 0”, and all those should say “is set to one”, or “is set to zero”.

Another example is section 5.3.3.5.1 and 5.3.3.5.2 which says “is set to 0”, when they should say “is set to zero”.

Also when saying “all 0s” or “all 1s” they should be “all zeros”, or “all ones”. There are several cases of both.

* Page 40 Line 13, numbers should be spelled out. (x = 55%, y = 60%)
* Page 40 Line 19, numbers should be spelled out. (x = 33%, y = 45%)
* Page 48 Numbers should be spelled out. (x = 43%, y = 47%)
* Page 48 Numbers should be spelled out. (x = 43%, y = 42%)
* Page 48 Numbers should be spelled out. (x = 43%, y = 37%)
* Page 48 Numbers should be spelled out. (x = 43%, y = 31%)
* Page 48 Numbers should be spelled out. (x = 38%, y = 45%)
* Page 48 Numbers should be spelled out. (x = 80%, y = 40%)
* Page 48 Numbers should be spelled out. (x = 36%, y = 34%)
* Page 48 Numbers should be spelled out. (x = 36%, y = 28%)
* Page 48 Numbers should be spelled out. (x = 51%, y = 19%)
* Page 48 Numbers should be spelled out. (x = 42%, y = 18%)
* Page 49 Numbers should be spelled out. (x = 26%, y = 48%)
* Page 49 Numbers should be spelled out. (x = 52%, y = 48%)
* Page 80 Numbers should be spelled out. (x = 85%, y = 47%)
	1. Units

In section 5.3.3.6.6 it uses “0.1 msec” when the correct should be “0.1 ms”.

* 1. Use of shall vs is

Section 5.3.3.1.8 and 5.3.3.1.9 say “is set to 1” for some fields, while 5.3.3.1.10 say “shall be set to 1” in similar case. I think it would be better to be consistent, i.e., say:

The More Fragments subfield shall be set to one in all Data or Management frames that have another fragment of the current MSDU to follow. Otherwise, it is set to zero.

* 1. Referencing this and previous standard

The document uses 802.15.6ma and 802.15.6-2012 when referencing current and previous versions of this standard. When referencing previous version it is better to use IEEE Std 802.15.6-2012 without any “legacy” or similar prefixes, and when talking about 802.15.6ma it should just talk about current status, thus there is no point of talking about 6ma, i.e., use “This standard”, or just instead of saying “Traffic ID for IEEE 802.16.6ma includes four…” say “Traffic ID includes four…”.

For examle the Table 18 should use some other term than “15.6 NIC”.

* 1. Missing MIB entries

The table 23 referes to the QoSOption1Implemented, and QoSOption2IImplemented but the Table E.1 only defines QoSOptionImplemented.

* 1. Continued

If the table is split on two pages, it should contain header line again, with text “(continued)” at the end. See IEEE SA Standards Style Manual section 16.1.

For example Table 23 is split over multiple pages.

* 1. Equations

Equations should be using italics as explained in the IEEE SA Standards Style Manual section 15.3.

For example section 5.12.1.9 has equations with ppm that do not use any italics.

Section 6.4.7 also has equations with incorrect formatting.

In section 8.4.1.1 and forward the equations seems to be using quite small font. Check out the font size.

Section 10.2.1.2.2 Single-sided two-way ranging (SS-TWR) PDF page 292, page 282, line 2 has equation in bitmap format. Same for PDF page 293, page 283, line 1.

More equations in bitmap formats on PDF page 293, page 283, line 25, and 30.

Equations without italics PDF page 296, page 286, line 30.

IEEE SA Standard Manual recommends that you do not number equations, this standard seems to do that, and there is lots of references to the equations that are broken. Perhaps removing the numbering and the references to them would be easier than fixing all references.

* 1. References to withdrawn standards

There are several references to the IEEE Std 802.1D which have been withdrawn after functionality of it has been incorporated to the IEEE Std 802.1Q. Most likely all references to the IEEE Std 801.1D can to be replaced with IEEE Std 802.1Q, but each case should be checked separately.

* 1. Bitmap images

Figure 145 is bitmap image even when it has mostly text. Redrawing that figure to use actual line drawing would be better, as then PDF search functon will find the text in the figure too.

Figure 146, 147, 148, 157, 180, 181, 182 is also bitmap.

* 1. Bibliography

There are bibliography references to the dated versions, usually there should not be any need for bibliography references to be dated.

For example there should not be any reason to have bibliography reference to the IEEE Std 802.15.4a-2007, as everything that is there is already rolled in the the IEEE Std 802.15.4.

Also the [B3] reference is not for the IEEE Std 802.15.4a-2007, but to the ““Applications of IEEE Std 802.15.4,” IEEE 802.15 document 15-14-0226-00-0000, 2014.”

When you have references to mentor documents, i.e., like 15-24-0226-00-0000 above, you want to add footnote saying “IEEE 802.15 documents are available at <https://mentor.ieee.org/802.15/documents>.” for the first such document.

* 1. References

The 802.15 WG Editing instructions section 2.4 says that:

Never use “see 9.78.3”, instead use “as described in 9.78.3” or “as defined in 9.78.3”.

There is lots of cases where this standard uses “see xxx”. Consider changing them to “ as described in” or “as defined in”.

* 1. Other nits:

Here are some other nits I noticed during the checking:

* Page 27 Line 30, why is "[and Class 4]" in brackets? (x = 33%, y = 19%)
* Page 44 Line 17 is empty. (x = 1%, y = 32%)
* Page 52 Line 8, extra >>>> (x = 6%, y = 70%)
* Page 81 Line 4, should "EAP 2" be "EAP2". (x = 23%, y = 53%)
* Page 114 Line 13 this should be equation, i.e., use italics and "x" should be ×. (x = 19%, y = 71%)
* Page 117 Line 26, extra >>>> (x = 6%, y = 17%)
* Page 120 Line 20, this standard has been withdrawn. (x = 7%, y = 23%)
* Page 249 Line 5, this equation overlaps the next line. Also all the equations seem to have gaps int he multiline characters like opening { here. (x = 11%, y = 80%)
* Page 257 Line 1, the table 117 is empty. (x = 28%, y = 89%)
* Page 261 Line 3, the link text is "0" but it points to 9.1.14.3. (x = 40%, y = 86%)
* Page 261 Line 11, the link text is "0" but it points to 9.1.14.3. (x = 40%, y = 65%)
* Page 283 Line 14, the there are only 4 words in the line, seems like there is something wrong. (x = 59%, y = 49%)
* Page 291 Line 34, should be equation and the RxS1\_RangingCounter etc should be in italics as they re variables. (x = 22%, y = 26%)
* Page 295 Line 11, the 2-7 should most likely be 2^-7. where ^ is exponent. (x = 46%, y = 62%)
* Page 295 Line 13, the 2-20 should most likely be 2^-20. where ^ is exponent. (x = 45%, y = 58%)
* Page 296 Figure 183 seems to have formatting error for bits 5-6. (x = 49%, y = 38%)
	1. Copying text from 4z

There seems to be lots of text that is copied from IEEE Std 802.15.4z. This is not good idea, as there is references which gets broken, there has already been changes to the text from 4z in the P802.15.4me draft (now in standard association ballot process).

Also the IEEE Std 802.15.4z defined lots of IEs and other things that are referenced by the text, but which are not included in the copy. Examples include like “Ranging Channel and Preamble Code Selection IE (RCPCS IE)”.

Here is list of references that are broken:

* Page 295 Line 22, Reference to the 802.15.4z. (x = 21%, y = 36%)
* Page 296 Line 25, Reference to the 802.15.4z. (x = 31%, y = 27%)
* Page 296 Line 26, Reference to the 802.15.4z. (x = 66%, y = 24%)
* Page 296 Line 27, Reference to the 802.15.4z. (x = 31%, y = 23%)
* Page 296 Line 28, Reference to the 802.15.4z. (x = 56%, y = 20%)
* Page 296 Line 31, Reference to the 802.15.4z. (x = 61%, y = 12%)
* Page 298 Line 4, Reference to the 802.15.4z. (x = 72%, y = 72%)
* Page 298 Line 10, Reference to the 802.15.4z. (x = 65%, y = 49%)
	1. Missing references

There are lots of cases where the standard have “エラー! 参照元が見つかりません。”, i.e. the reference is missing. Here is list of them:

* Page 25 Missing reference. (x = 54%, y = 38%)
* Page 40 Line 6, Missing reference. (x = 83%, y = 79%)
* Page 44 Line 12, Missing reference. (x = 32%, y = 47%)
* Page 44 Line 13, Missing reference. (x = 29%, y = 44%)
* Page 48 Missing reference. (x = 79%, y = 24%)
* Page 54 Missing reference. (x = 57%, y = 25%)
* Page 111 Missing reference. (x = 15%, y = 68%)
* Page 111 Missing reference. (x = 43%, y = 66%)
* Page 113 Missing reference. (x = 16%, y = 91%)
* Page 113 Missing reference. (x = 55%, y = 91%)
* Page 113 Missing reference. (x = 7%, y = 66%)
* Page 182 Missing reference. (x = 23%, y = 21%)
* Page 183 Missing reference. (x = 21%, y = 31%)
* Page 185 Missing reference. (x = 55%, y = 14%)
* Page 185 Missing reference. (x = 40%, y = 25%)
* Page 229 Missing reference. (x = 21%, y = 29%)
* Page 229 Missing reference. (x = 71%, y = 29%)
* Page 230 Missing reference. (x = 60%, y = 53%)
* Page 230 Missing reference. (x = 64%, y = 28%)
* Page 230 Missing reference. (x = 23%, y = 26%)
* Page 236 Missing reference. (x = 7%, y = 14%)
* Page 244 Missing reference. (x = 69%, y = 81%)
* Page 247 Missing reference. (x = 66%, y = 54%)
* Page 247 Missing reference. (x = 81%, y = 71%)
* Page 247 Missing reference. (x = 50%, y = 52%)
* Page 247 Missing reference. (x = 50%, y = 44%)
* Page 248 Missing reference. (x = 46%, y = 33%)
* Page 248 Missing reference. (x = 12%, y = 31%)
* Page 248 Missing reference. (x = 38%, y = 16%)
* Page 258 Missing reference. (x = 19%, y = 17%)
* Page 261 Missing reference. (x = 32%, y = 89%)
* Page 261 Missing reference. (x = 45%, y = 84%)
* Page 261 Missing reference. (x = 34%, y = 68%)
* Page 261 Missing reference. (x = 48%, y = 62%)
* Page 261 Missing reference. (x = 38%, y = 54%)
* Page 261 Missing reference. (x = 66%, y = 39%)
* Page 261 Missing reference. (x = 72%, y = 34%)
* Page 261 Missing reference. (x = 15%, y = 22%)
* Page 262 Missing reference. (x = 62%, y = 85%)
* Page 262 Missing reference. (x = 66%, y = 62%)
* Page 262 Missing reference. (x = 29%, y = 60%)
* Page 262 Missing reference. (x = 11%, y = 48%)
* Page 262 Missing reference. (x = 57%, y = 15%)
* Page 263 Missing reference. (x = 42%, y = 81%)
* Page 263 Missing reference. (x = 62%, y = 51%)
* Page 263 Missing reference. (x = 71%, y = 42%)
* Page 263 Missing reference. (x = 46%, y = 30%)
* Page 264 Missing reference. (x = 27%, y = 88%)
* Page 264 Missing reference. (x = 58%, y = 86%)
* Page 264 Missing reference. (x = 33%, y = 76%)
* Page 264 Missing reference. (x = 9%, y = 67%)
* Page 264 Missing reference. (x = 44%, y = 50%)
* Page 264 Missing reference. (x = 32%, y = 37%)
* Page 265 Missing reference. (x = 47%, y = 88%)
* Page 265 Missing reference. (x = 50%, y = 70%)
* Page 265 Missing reference. (x = 20%, y = 34%)
* Page 265 Missing reference. (x = 47%, y = 34%)
* Page 265 Missing reference. (x = 45%, y = 18%)
* Page 265 Missing reference. (x = 32%, y = 15%)
* Page 266 Missing reference. (x = 64%, y = 78%)
* Page 266 Missing reference. (x = 48%, y = 55%)
* Page 266 Missing reference. (x = 77%, y = 55%)
* Page 266 Missing reference. (x = 53%, y = 45%)
* Page 266 Missing reference. (x = 42%, y = 36%)
* Page 266 Missing reference. (x = 41%, y = 33%)
* Page 266 Missing reference. (x = 24%, y = 16%)
* Page 267 Missing reference. (x = 52%, y = 92%)
* Page 267 Missing reference. (x = 72%, y = 55%)
* Page 267 Missing reference. (x = 81%, y = 31%)
* Page 267 Missing reference. (x = 72%, y = 29%)
* Page 268 Missing reference. (x = 12%, y = 70%)
* Page 268 Missing reference. (x = 19%, y = 68%)
* Page 268 Missing reference. (x = 13%, y = 57%)
* Page 268 Missing reference. (x = 37%, y = 55%)
* Page 268 Missing reference. (x = 49%, y = 34%)
* Page 268 Missing reference. (x = 72%, y = 34%)
* Page 268 Missing reference. (x = 60%, y = 22%)
* Page 269 Missing reference. (x = 38%, y = 89%)
* Page 269 Missing reference. (x = 60%, y = 48%)
* Page 269 Missing reference. (x = 76%, y = 21%)
* Page 269 Missing reference. (x = 42%, y = 19%)
* Page 270 Missing reference. (x = 69%, y = 74%)
* Page 270 Missing reference. (x = 7%, y = 62%)
* Page 270 Missing reference. (x = 67%, y = 51%)
* Page 270 Missing reference. (x = 53%, y = 48%)
* Page 270 Missing reference. (x = 53%, y = 40%)
* Page 271 Missing reference. (x = 39%, y = 90%)
* Page 271 Missing reference. (x = 54%, y = 60%)
* Page 271 Missing reference. (x = 23%, y = 51%)
* Page 271 Missing reference. (x = 63%, y = 46%)
* Page 271 Missing reference. (x = 43%, y = 44%)
* Page 271 Missing reference. (x = 65%, y = 35%)
* Page 271 Missing reference. (x = 25%, y = 33%)
* Page 271 Missing reference. (x = 43%, y = 22%)
* Page 271 Missing reference. (x = 70%, y = 22%)
* Page 271 Missing reference. (x = 57%, y = 15%)
* Page 271 Missing reference. (x = 18%, y = 13%)
* Page 271 Missing reference. (x = 32%, y = 79%)
* Page 272 Missing reference. (x = 41%, y = 85%)
* Page 272 Missing reference. (x = 15%, y = 73%)
* Page 272 Missing reference. (x = 45%, y = 73%)
* Page 272 Missing reference. (x = 18%, y = 67%)
* Page 272 Missing reference. (x = 64%, y = 44%)
* Page 272 Missing reference. (x = 76%, y = 42%)
* Page 272 Missing reference. (x = 13%, y = 21%)
* Page 273 Missing reference. (x = 72%, y = 74%)
* Page 273 Missing reference. (x = 69%, y = 72%)
* Page 273 Missing reference. (x = 69%, y = 62%)
* Page 273 Missing reference. (x = 72%, y = 60%)
* Page 274 Missing reference. (x = 64%, y = 77%)
* Page 274 Missing reference. (x = 20%, y = 58%)
* Page 274 Missing reference. (x = 70%, y = 58%)
* Page 274 Missing reference. (x = 44%, y = 50%)
* Page 274 Missing reference. (x = 38%, y = 40%)
* Page 274 Missing reference. (x = 58%, y = 36%)
* Page 274 Missing reference. (x = 10%, y = 28%)
* Page 274 Missing reference. (x = 41%, y = 28%)
* Page 275 Missing reference. (x = 69%, y = 82%)
* Page 275 Missing reference. (x = 51%, y = 48%)
* Page 275 Missing reference. (x = 9%, y = 26%)
* Page 275 Missing reference. (x = 20%, y = 24%)
* Page 275 Missing reference. (x = 13%, y = 22%)
* Page 275 Missing reference. (x = 43%, y = 22%)
* Page 276 Missing reference. (x = 60%, y = 58%)
* Page 276 Missing reference. (x = 32%, y = 45%)
* Page 276 Missing reference. (x = 47%, y = 30%)
* Page 276 Missing reference. (x = 53%, y = 10%)
* Page 277 Missing reference. (x = 19%, y = 85%)
* Page 277 Missing reference. (x = 44%, y = 85%)
* Page 277 Missing reference. (x = 58%, y = 67%)
* Page 277 Missing reference. (x = 30%, y = 57%)
* Page 277 Missing reference. (x = 46%, y = 53%)
* Page 277 Missing reference. (x = 76%, y = 51%)
* Page 277 Missing reference. (x = 9%, y = 24%)
* Page 277 Missing reference. (x = 53%, y = 14%)
* Page 277 Missing reference. (x = 76%, y = 14%)
* Page 277 Missing reference. (x = 80%, y = 12%)
* Page 278 Missing reference. (x = 53%, y = 85%)
* Page 278 Missing reference. (x = 7%, y = 83%)
* Page 279 Missing reference. (x = 11%, y = 72%)
* Page 279 Missing reference. (x = 39%, y = 63%)
* Page 280 Missing reference. (x = 59%, y = 89%)
* Page 281 Missing reference. (x = 63%, y = 51%)
* Page 281 Missing reference. (x = 53%, y = 49%)
* Page 281 Missing reference. (x = 77%, y = 49%)
* Page 282 Missing reference. (x = 46%, y = 17%)
* Page 283 Missing reference. (x = 50%, y = 91%)
* Page 283 Missing reference. (x = 46%, y = 73%)
* Page 283 Missing reference. (x = 34%, y = 70%)
* Page 283 Missing reference. (x = 73%, y = 56%)
* Page 283 Missing reference. (x = 66%, y = 53%)
* Page 283 Missing reference. (x = 52%, y = 51%)
* Page 283 Missing reference. (x = 19%, y = 48%)
* Page 283 Missing reference. (x = 55%, y = 17%)
* Page 283 Missing reference. (x = 50%, y = 15%)
* Page 283 Missing reference. (x = 37%, y = 13%)
* Page 283 Missing reference. (x = 19%, y = 11%)
* Page 284 Missing reference. (x = 52%, y = 71%)
* Page 284 Missing reference. (x = 48%, y = 69%)
* Page 284 Missing reference. (x = 37%, y = 67%)
* Page 284 Missing reference. (x = 19%, y = 65%)
* Page 284 Missing reference. (x = 74%, y = 48%)
* Page 284 Missing reference. (x = 15%, y = 33%)
* Page 284 Missing reference. (x = 13%, y = 25%)
* Page 284 Missing reference. (x = 34%, y = 23%)
* Page 284 Missing reference. (x = 13%, y = 11%)
* Page 284 Missing reference. (x = 25%, y = 9%)
* Page 286 Missing reference. (x = 10%, y = 24%)
* Page 288 Missing reference. (x = 26%, y = 82%)
* Page 288 Missing reference. (x = 50%, y = 57%)
* Page 288 Missing reference. (x = 27%, y = 55%)
* Page 288 Missing reference. (x = 53%, y = 55%)
* Page 289 Missing reference. (x = 17%, y = 47%)
* Page 289 Missing reference. (x = 25%, y = 42%)
* Page 307 Missing reference. (x = 42%, y = 64%)
* Page 307 Missing reference. (x = 42%, y = 24%)
* Page 309 Missing reference. (x = 18%, y = 70%)
* Page 309 Missing reference. (x = 16%, y = 56%)
* Page 309 Missing reference. (x = 54%, y = 42%)
* Page 309 Missing reference. (x = 79%, y = 42%)
* Page 309 Missing reference. (x = 70%, y = 30%)
* Page 310 Missing reference. (x = 71%, y = 52%)
* Page 310 Missing reference. (x = 30%, y = 41%)
* Page 310 Missing reference. (x = 30%, y = 26%)
* Page 310 Missing reference. (x = 16%, y = 9%)
* Page 311 Missing reference. (x = 44%, y = 87%)
* Page 311 Missing reference. (x = 43%, y = 49%)
* Page 312 Missing reference. (x = 17%, y = 43%)
* Page 312 Missing reference. (x = 52%, y = 31%)
* Page 312 Missing reference. (x = 79%, y = 31%)
* Page 313 Missing reference. (x = 22%, y = 73%)
* Page 313 Missing reference. (x = 62%, y = 66%)
	1. Section 5.7 is empty

Most likely 5.8 should be 5.7.1?

1. Figure and table numbering

The current draft uses Figure 1, Figure 2, etc and Table 1, and Table 2, etc numbering. It might be good idea to change numbering to be per clause, i.e., Figure 5-1, Figure 5-2, Figure 5-3 for figures in clause 5, and then Figure 6-1, Figure 6-2 etc for clause 6, and same for tables. This makes future work easier, when adding one figure or table in the standard does not cause all figure or table numbers to be renumbered, only those in that clause.

1. Remove hanging paragraphs

IEEE SA Standards Style Manual section 13.1 requires that there is no hanging paragraphs. See figure 1 of the section 13.1 IEEE SA Standards Style Manual for example. There is several hanging paragraphs in the document.

* 3.1
* 4.5
* 4.5.1
* 4.5.2
* 4.7
* 5.3.3
* 5.3.3.1
* 5.3.3.2
* 5.3.3.5
* 5.3.3.6
* 5.4.1
* 5.6.1
* 5.6.1.1
* 5.6.1.4
* 5.8
* 5.8.1
* 5.8.1.1
* 5.8.2
* 5.9
* 5.9.1
* 5.9.1.2
* 5.9.1.10
* 5.9.2
* 5.9.2.3
* 5.9.2.4
* 5.9.2.5
* 5.9.3
* 5.9.4
* 5.9.4.4
* 5.9.5
* 5.9.6
* 5.9.6.5
* 5.9.6.6
* 5.9.6.9
* 5.9.7
* 5.9.7.3
* 5.9.8
* 5.9.9
* 5.9.9.5
* 5.9.9.6
* 5.10
* 5.10.1
* 5.10.2
* 5.10.6
* 5.10.7
* 5.10.8
* 5.12
* 5.12.1
* Most likely even more after this...
1. Historical participants

As this is revision of the IEEE Std 802.15.6-2012 the frontmatter should include the Historical participants section listing the participants of the previous revision. This can be added later, but if you have that information already now, it might be good idea to include it now (i.e., if you received the version from the IEEE editors, which included the previous list of participants etc, you can copy them to this section. This section comes after the Participants section before Introduction section. Here is a example screenshot from the P802.15.4ma-D03:

