Comments on P802.15 PARs & CSDs

From 802.1

CSD

Title

- CRITERIA FOR STANDARDS DEVELOPMENT (CSD) IEEE 802.15.11 Standard for Multi-Gigabit/s Optical Wireless Communications
- This project is for IEEE 802.15.13. Change 802.15.11 to 802.15.13 in the title

CSD

1.2.2 Compatibility

a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q? Yes

- The 802.1 WG would like a clarification of compatibility. In particular:
  - Is the 802.15.13 MAC substantially the same as the 802.15.3 MAC which is currently being added to IEEE Std 802.1AC by P802.1ACct? If it is different, a project will need to be created to add MAC service definitions to IEEE Std 802.1AC.
  - Can you clarify the supported MTU sizes for 802.15.13 frames? Other 802.15 MACs have restricted MTU sizes making bridging to other 802 Media impossible without suitable fragmentation/reassembly support.

CSD

1.2.2 Compatibility

a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q? No. While the amendment shall comply with IEEE Std 802, it cannot comply with IEEE Std 802.1Q and IEEE Std 802.1AC because IEEE Std 802.15.4 uses 64-bit MAC addresses.

- Provide a complete list of all aspects of IEEE Std 802.15.4 that do not comply with IEEE Std 802.1Q and IEEE Std 802.1AC. IEEE 802.1 believes there are additional issues with compatibility that are not listed. In particular:
  - 802.15.4 has a restricted MTU size which makes bridging to other IEEE 802 media impossible without suitable fragmentation/reassembly support
  - The use of other Addressing Modes beyond the extended address (64-bit) are also incompatible with IEEE Std 802.1Q and IEEE Std 802.1AC

PAR

5.2.b Scope of the project:

- The sentence starting with “Areas of enhancement:” appears to be a list, but the items are separated by periods. Make this sentence a list, for example by replacing the periods by semicolons.
- The sentence starting with “Enhancements to dependability” is not a complete sentence and is difficult to understand. We suggest splitting this into multiple sentences.
- “Support for station-to-infrastructure protocols and infrastructure synchronization mechanisms.” is not a sentence. It is not clear whether this standard will provide or utilize this support.

PAR

8.1 Additional Explanatory Notes:

- None of the explanatory notes seem to have a purpose and perhaps should be removed.
- If not removed, we have the following comments:
  - The first sentence, "*P802.15.6a addresses EMC and EMI for both HBAN and VBAN*." does not reference a previous section for which it is providing explanatory notes.
  - The sentence "*Support for synchronization infrastructure, for instance 802.1 TSN MAC Bridge, to enhance dependability and reliable latency."* seems out of context in Section 8.1. Is this intended to be part of 5.2.b Scope of the project? In addition, this is not a complete sentence.
  - The acronym TSN should be spelled out on first use.
  - The term "802.1 TSN MAC Bridge" is ambiguous and not defined by 802.1 standards. Perhaps you intend to refer to IEEE 802.1 TSN functionality as specified by IEEE Std 802.1Q, IEEE Std 802.1AS and IEEE Std 802.1CB?
  - The text at the end of this section regarding 5.4 Purpose is not written in complete sentences and is unclear what is being explained.

CSD

- The CSD needs to be provided as a final document with no strike through or editorial markup. For example, after removing editorial markup, strike through is still shown in 1.2.1 Broad Market Potential.

CSD

1.2.2 Compatibility

a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q? Yes

- Is the 802.15.6 MAC substantially the same as the 802.15.3 MAC which is currently being added to IEEE Std 802.1AC by P802.1ACct? If it is different, a project will need to be created to add MAC service definitions to IEEE Std 802.1AC.

CSD

1.2.4 Technical Feasibility

- The PAR mentions support for synchronization infrastructure and IEEE 802.1 TSN functionality; however, there is no mention of demonstrating the technical feasibility of these.

PAR

5.2 Scope of proposed standard:

- The scope states, “This standard specifies the physical layer (PHY) and data link layer for impulse radio ultra wideband (UWB)…”. To be consistent with other IEEE 802 standards defining both the PHY and MAC, the scope should say, “This standard specifies the physical layer (PHY) and media access control (MAC) sublayer for impulse radio ultra wideband (UWB)…”
- Change “data link layer” to “media access control (MAC) sublayer”

PAR

5.5 Need for the Project:

- The references to standards 802.15.4-2020, 805.15.4w-2020, 802.15.4y-2021, and 802.15.4z-2020 are not proper references to IEEE Standards. Precede the referenced standards with “IEEE Std” in each case. NOTE: changes in sections 7.1 and 8.1 are also needed.

- The first sentence is confusing in its use of 802.15.4-2020. We recommend the following replacement:
  - The IEEE 802.15.4-2020 standard (as amended by IEEE 805.15.4w-2020, IEEE 802.15.4y-2021, and IEEE 802.15.4z-2020), is overly complex. End-users (industry) will benefit from the extraction of the ad-hoc impulse radio ultra wideband functionality into a simple, focused specification, enabling improved multi-vendor interoperability and further technology adoption.

PAR

8.1 Additional Explanatory Notes:

- The first two paragraphs do not refer to the section for which they are providing explanatory notes. We assume they are intended to refer to 5.5 Need for the Project.

- The first two paragraphs should be merged into 5.5 Need for the Project, or if redundant, eliminated.

CSD

1.2.2 Compatibility

a) Will the proposed standard comply with IEEE Std 802, IEEE Std 802.1AC and IEEE Std 802.1Q? No. While the standard shall comply with IEEE Std 802, it does not intend to comply with IEEE Std 802.1Q and IEEE Std 802.1AC to maintain backwards compatibility with IEEE Std 802.15.4 which uses 64-bit MAC addresses.

- IEEE 802.1 believes there may be additional issues with compatibility that are not listed. Please clarify:
  - Will 802.15.14 use a restricted MTU size? Restricted MTU sizes make bridging to other IEEE 802 media impossible without suitable fragmentation/reassembly support
  - Will 802.15.14 have other Addressing Modes beyond the 64-bit address that are also incompatible with IEEE Std 802.1Q and IEEE Std 802.1AC?

PAR

5.2 Scope of proposed standard:

- The scope states, “This standard specifies the physical layer (PHY) and data link layer for adhoc low data rate wireless...” To be consistent with other IEEE 802 standards defining both the PHY and MAC, the scope should say, “This standard specifies the physical layer (PHY) and media access control (MAC) sublayer for adhoc low data rate wireless...”
- Change “data link layer” to “media access control (MAC) sublayer”

PAR

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- The references to standards 802.15.4-2020, 805.15.4w-2020, 802.15.4y-2021, and 802.15.4z-2020 are not proper references to IEEE Standards. Precede the referenced standards with “IEEE Std” in each case. NOTE: changes in sections 7.1 and 8.1 are also needed.

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CSD

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- IEEE 802.1 believes there may be additional issues with compatibility that are not listed. Please clarify:
  - Will 802.15.15 use a restricted MTU size? Restricted MTU sizes make bridging to other IEEE 802 media impossible without suitable fragmentation/reassembly support
  - Will 802.15.15 have other Addressing Modes beyond the 64-bit address that are also incompatible with IEEE Std 802.1Q and IEEE Std 802.1AC?