

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: Proposed resolutions for coexistence issues for CIDs 153, 275, 276, 277 and 543 of LB#87

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Re: [802.15 TG4m]

Abstract: This document provides proposed resolutions for CIDs 153, 275, 276, 277 and 543 of LB#87.

Purpose: To provides proposed resolution sfor CIDs 153, 275, 276, 277 and 543 of LB#87

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Comments for Coexistence Issues

- CID 153
- CID 275/276/277
- CID 543

CID 153, 5.2.4.32, 28, 20

- Comment
 - Table 4ic shows supported band fields. Rows corresponding to bit number 5 - 18 show support for frequency bands that are not allocated for TVWS operation. The scope of the 4m PHY states "...The amendment enables operation in the VHF/UHF TV broadcast bands between 54 MHz and 862 MHz..."
- Proposed Change
 - The supporting coexistence document makes no mention of the impact of / to 15.4m compliant signals in frequency bands NOT directly allocated by the relevant regulatory authorities. If these bands are going to be used for TVWS then this should be reflected in the coexistence document.
- Proposed Resolution
 - ***These bands are mentioned and performance for them is analyzed in the 15.4m coexistence document, 15-13-0166-00.***

CID 275/276/277, 20, 61, 10-12

- Comment
 - The coexistence document provides a poor analysis of the coexistence with other standard systems:
 - The document provides some numbers on how a signal gets attenuated with the distance and states that since a 802.22 system is physically separated from a 4m system (or from a 4m device?) by 1 km, the interferences will not be harmful. Is there some technical evidence that, lets say in case of using 4m in large scale deployments such as Smart Grid systems – this statement is true?
 - It provides a very general statement: “Many mitigation techniques exist in the 802.15.4 for detection and avoidance of interference....”. Since each band is different and effective coexistence depends on the requirements and constraints of the application using the band, is there some technical evidence showing that a system using 4m PHY + an 802.15.4 MAC can perform effective co-existence? How many systems can co-exist into the same area?
 - It is not clear what version of the 802.15.4 MAC layer was used for this co-existence analysis. It is therefore difficult to assess the technical validity of this document.

CID 275/276/277, 20, 61, 10-12 (cont'd)

- Proposed Change
 - The standard must provide technically surrounding evidence that a system using the 4m standard can co-exist effectively with other standard systems that are using this band, as well as with other system using 4m.
- Proposed Resolution
 - *In the 15.4m coexistence document, 15-13-0166-00, technically surrounding evidence that a system using the 4m standard can co-exist effectively with other standard systems that are using this band, as well as with other system using 4m with extensive analysis results for various scenarios is provided. (Refer to this document.)*
 - *Any MAC related parameters are not used for this analysis. Mainly reliability performance related to error rates is the major concern in this document.*

CID 543, General

- Comment
 - #802.15-13-007-00-00-004m. I would like to congratulate TG4m on the brevity of the coexistence document.
- Proposed Change
 - (None)
- Proposed Resolution
 - *The coexistence document is revised with extensive analytical results to evaluate coexistence issues of 802.15.4m with other 802 systems including 802.22, 802.11, and 802.15 systems. Refer to the 15.4m coexistence document, 15-13-0166-00.*