

Concerns and Suggestions for VHT60 PAR

For the 2nd conference call between TG3c and VHT

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From TG3c

(Concerns presented in this document are what came out from the members of TG3c but not necessarily represent the official comments of TG3c due to time limitation)

I. For Better Co-existence

Based on what achieved by TG3c so far, “TG3c” suggests for VHT60 to have following statements in VHT60 PAR:

- Same channelization: 2160 MHz per channel x 4 (channels) over 9 GHz,
- Common mode for all PNC capable devices,
- Some etiquette rule which will allow to open a channel for new devices to be able to establish communications links by doing something such as backing off,
- Investigate applicability of the PHY developed by TG3c with the highest priority.

II. Uniqueness of PAR

It is mandatory for new TG to have a UNIQUE PAR and “TG3c” suggests following:

- Need to compare the proposed PAR with the existing PAR in the same frequency band (TG3c),
- Need to identify differences/uniqueness: must be stated clearly,

The VHT PAR (11-08/223r5), part 17.5.3 says:
"VHT will be the only technology that can allow a corporate or home user to roam from high throughput (60 GHz) dense cells to wider area networks (e.g. 802.11a/b/g) in a seamless manner ---".

This "seamless" roaming feature may be the only perceived advantage that VHT has over 3C.

Although the current 3C MAC has “handover capability” but not roaming capability, it will be TG3c’s natural future work like 802.21 working on WIMAX and 802.11.a/b/g handover

III. VHT60 PAR: may need further clarification

These including:

1. “Maintain the 802.11 user experience” (in Scope)
2. Applications differences from those of TG3c
3. Transmission range
4. Others

5.2 Scope of Proposed Standard in PAR (11-08/223r5)

- The scope of this project is to define an amendment that shall define standardized modifications to both the 802.11 physical layers (PHY) and the 802.11 Medium Access Control Layer (MAC) to enable operation in the 60 GHz frequency band (typically 57-66 GHz) capable of very high throughput. The MAC and PHY specified in this amendment:
 - Enable a maximum throughput of at least 1 Gbps, as measured at the MAC data service access point (SAP)
 - Enable fast session transfer between PHYs
 - Maintain the 802.11 user experience
 - **Address coexistence with other systems in the band**

17.5.4.1 Coexistence of 802 wireless standards specifying devices for unlicensed operation in

PAR (11-08/223r5)

A working group proposing a wireless project is required to demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable. The Working Group will create a CA document as part of the WG balloting process. If the Working Group elects not to create a CA document, it will explain to the EC the reason the CA document is not applicable.

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17.5.3 Distinct Identity in PAR (11-08/223r5)

- **Each IEEE 802 standard shall have a distinct identity. To achieve this, each authorized project shall be:**
- **a) Substantially different from other IEEE 802 standards.**
- This project will result in a wireless LAN system with significantly higher throughput than is provided by 802.11a, 802.11b, 802.11g and 802.11n wireless networks, while leveraging existing network level investments. The goal is to increase the overall system throughput by considering both PHY and MAC layer enhancements, but not re-invent the baseline 802.11 functionality.
- VHT will be the only technology that can allow a corporate or home user to roam from high-throughput, dense cells to wider area networks in a seamless manner while maintaining full support for the installed base security, management, diagnostics and backbone infrastructure. This will be supported by maintaining backwards compatibility to previous 802.11 standards like: 802.11 i/w for security, 802.11s for mesh networking, 802.11 k/v for network management and much more. With the additional bandwidth that the 60 GHz band can offer, VHT will likely be adopted in an ad-hoc manner, starting in specific locations that make use of higher throughput and bandwidth, while maintaining legacy 11n support, to enable seamless migration. This only increases the need for making VHT part of the 802.11 family.
- Although this amendment proposes to use the same spectrum as the proposed IEEE 802.15.3c PHY, this work will create a solution compatible with existing IEEE 802.11 deployments.
- **b) One unique solution per problem (not two solutions to a problem).**
- There are no other wireless LAN standard providing significantly higher throughput than 802.11VHT.
- **c) Easy for the document reader to select the relevant specification.**
- 60 GHz Very High Throughput will be introduced as a new amendment in 802.11.