

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

Submission Title: Thoughts on Channel Realizations

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Re: n/a

Abstract: Basis for the discussion on how to include a set of concrete channel realizations to the channel model and the CMD.

Purpose: Contribution towards finalizing the channel modeling document of TG3d

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Thoughts on Channel Realizations

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Frequency Band (1)

- A channel impulse response (CIR) depends on the bandwidth of the underlying signal



- Do we have to define frequency bands?
- Data Center / Intra-Device models output **channel transfer functions (CTF)**
→ **via IFFT, any CIR** in any (sub-) band of the envisaged 252 GHz – 325 GHz range **can be evaluated**
- OK for the Close-Proximity P2P model?

Frequency Band (2)

- Proposal: Inclusion of a **set of channel transfer functions** (CTFs) rather than channel impulse responses (CIRs)
- System proposals have to be tested against the CIRs that are generated from these CTFs according to the frequency bands defined in the proposals
- Advantages:
 - Method covers the full possible frequency range
 - Allows for system designs using sub-bands

Composition of the set

- So far, we have agreed upon a number of 100 data sets per application case (P2P, Intra-Device, ...)
- Does it make sense to define sub-sets e.g. 10 mandatory CTFs along with 100 optional ones?

Generation of a CIR

- Applied filter functions, ... , IFFT parameters must be defined or at least documented for every proposal

Format

- .mat, .s2p, .csv
 - we should agree
- To be embedded in the CMD file or to be stored on a separate webspace
 - where is it hosted?
 - how is it linked / referenced?

Thank You
for Your Attention