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

Submission Title: Terminology usage for link establishment in D2

Date Submitted: May 2010

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Re:

Abstract: proposes resolution to link establishment terminology

Purpose:

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Terminology usage for link establishment in D2

Confusion on terminology

What does link establishment mean?

- Applicable to preamble, header transmission during packet transmission ?
- Applicable to establishing a link when network is formed?
 - Network is not applicable for broadcasting

Recommendation – delete all usage of the term

- Use “synchronization” for preamble, header during packet transmission (PHY)
- Use “device discovery” for forming the network (MAC)

Definition: Device discovery mode

PHY type I and II use OOK (VPM with 50% duty cycle) at lowest data rate in this mode for modulation. PHY III is not used in the device discovery mode.

Can use the optional PHR extension discussed in Intel contribution for dimming support

MAC and PHY capabilities are exchanged in the device discovery process

Clock rate support is also exchanged

Once the capabilities are exchanged, regular data transmission mode resumes for all 3 PHY types

Device discovery is not applicable for broadcasting

Definition: Synchronization

PHY concept

Preamble is sent at clock rate chosen by the TX and supported by the RX

Preamble is defined as a time domain sequence

Preamble does not have any modulation, channel or line coding

PHY header is sent at the lowest data rate for the chosen clock rate

Clock rate does not change between preamble, header and payload

Recommendation

The term “synchronization” should be defined in D2 in the overview section

The term “device discovery” should be defined in D2 in the overview section

All link establishment terms in D2 related to the preamble and header transmission should refer to “synchronization”

All link establishment terms in D2 related to the discovery of devices and network formation should refer to “device discovery”

This should hopefully, clarify all issues related to link establishment. There should be no reference to link establishment in the document