**IEEE 802.15**

**Wireless Specialty Networks**

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| Project | IEEE P802.15 Working Group for Wireless Specialty Networks (WSNs) | |
| Title | Proposal for restructuring Chapter 4 of 802.153RevB | |
| Date Submitted | 13 November 2022 | |
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| Re: |  | |
| Abstract | Proposal for restructuring Chapter 4 of 802.153RevB | |
| Purpose | Resolving comments of LB191 | |
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**Proposal for restructuring Chapter 4 of 802.153RevB**

**Starting Point:**

With amendment 15.3e the concept of parinet has been introduced in a addition to the already existing piconet. With the roll-up chapter 4 inherited a cnfsuing structure wrt parinet and piconet. There are aspects relevant for piconet only, relevant for pairnetsonly and relevant for both. In the following a restructuring is proposed using the following elements:

- Three types of section/subsection headlines are used:

- Sections/subsection relevant only for one of the two network have the term piconet or pairnet in the headline

- Sections/subsections relevant for both do not have the terms pairnet/piconet in the title

- A new section 4.1 is introduced mentioning the existence of two networks types

- The order of sections is partly rearranged

- Additional text is introduced, where necessary

Text in < > indicates, what has to b changed.

**Proposed new structure:**

4. General description

<Add new section> 4.1 Network Types

Devices can either be operated in a piconet or in a pairnet as defined in section 4.2 and 4.4.

4.2 What is a piconet?  
<keep text from former section 4.1>

<add current line 29 to the end of 4.1>

4.3 Components of a piconet

<keep text from former section 4.3>

4.4 What is a pairnet?  
<keep text from former section 4.2>

<add the following new sentence at the end of this section:>

The HRCP PHY and THz PHY are using a pairnet.

4.5 Components of a pairnet

<Reformulate the text of former section 4.4 as follows>:

An IEEE 802.15.3 pairnet consists of at most two DEVs as components. These two components are called PRC (pairnet coordinator) and PRDEV (pairnet device). A Beacon frame is transmitted from a PRC to allow a PRDEV to connect. Once a pairnet connection is established, the Beacon frame transmissions are turned off.

4.6 MAC Functionality

<keep text before section 4.5.1 of former section 4.5>

4.6.1 Coordination

<keep text of former section 4.5.1>

4.6.1.1 Starting a piconet

<keep text of former section 4.5.1.1 up to line 6 on page 42>

4.6.1.2 Starting a pairnet

<keep text of former section 4.5.1.1 starting from line 7 on page 42>

4.6.1.3 Handing over control of the piconet

keep text of former section 4.5.1.2 >

4.6.1.4 Creating a child piconet

keep text of former section 4.5.1.3 >

4.6.1.5 Creating a neigbor piconet

<keep text of former section 4.5.1.4 >

4.6.2 Ending a piconet

<keep text of former section 4.5.2 up to line 16 >

4.6.3 Ending a piconet with a dependent piconet involve

<keep text of former section 4.5.3 >

4.6.4 Ending a pairnet

<keep text of former section 4.5.2 starting form line 17 >

4.6.5 Association and disassociation in a piconet

<keep text of former section 4.5.4 starting up to line 11 >

4.6.5 Association and disassociation in a pairnet

<keep text of former section 4.5.4 line 12 >

4.6.6 Security Overview

<keep text of former section 4.5.5 >

4.6.7 The IEEE 802.15.3 superframe

<add new subsection:> 4.6.7.1 The IEEE 802.15.3 superframe for piconets

<keep text of former section 4.5.6 up to line 17 of page 45 >

<add new subsection:> 4.6.7.2 The IEEE 802.15.3 superframe for pairnets

<keep text of former section 4.5.6 from line 18 on >

4.6.8 Channel time management

<keep text of former section 4.5.7>

4.6.9 Data communications between DEVs

<keep text of former section 4.5.8>

4.6.10 Information discovery in the piconet

<keep text of former section 4.5.9>

4.6.11 Dynamic channel selection <add “in the piconet”>

<keep text of former section 4.5.10>

4.6.12 Power management

<keep text of former section 4.5.11>

4.6.13 Controlling transmit power in the piconet

<keep text of former section 4.5.12>

4.6.14 Superfame structure using quasi-omni mode <add “in mmW piconets”>

<keep text of former section 4.5.13>

4.6.15 Frame aggregation

<keep text of former section 4.5.14>

4.6.16 Beam forming <add “in the piconet”>

<keep text of former section 4.5.15>

4.6.17 Channel probing <add “in the piconet”>

<keep text of former section 4.5.16>

4.6.18 Unequal error protection (UEP) <add “in mmW piconets”>

<keep text of former section 4.5.17>

4.7 Characteristics of the 2.4 GHz PHY

<keep text of former section 4.6>

4.8 Characteristics of the mmWave PHY

<keep text of former section 4.7>

4.9 Characteristics of HRCP PHY

<keep text of former section 4.8>

4.10 Characteristics of THz PHY

<keep text of former section 4.9>

4.11 Conventions

<keep text of former section 4.10>

4.12 Concept of primitives

<keep text of former section 4.11>