Information Carried By the PLC For FDD Transmission Mode

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Information on the Downstream PLC

- Information carried by the PLC and is required by a new CNU receive the downstream OFDM channel
- Downstream OFDM Channel Descriptor
 - Static: Information that is changed rarely by "one time" configuration: CP size, FFT size, exclusions etc ...
- Downstream OFDM Profile Descriptor
 - Dynamic: Information that may change in a more regular basic: bit loading
- Time stamp information
- Next LDPC codeword pointer

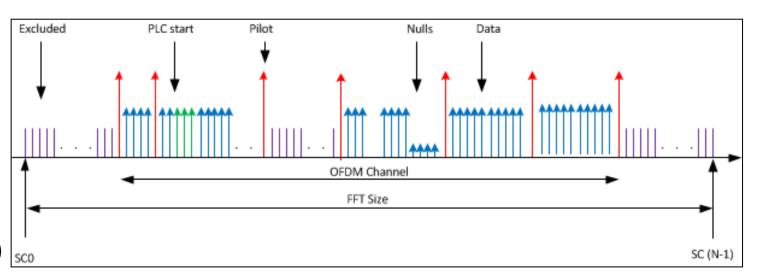
Downstream OFDM Channel Descriptor

OFDM parameters

- Number of OFDM channels
- Per DS channel:
 - FFT size, CP size, Window size (each one Byte)
 - Center frequency (22 bits if in KHz?)
 - Downstream Interleaver depth (Byte) | sco
 - PLC location (start subcarrier 13 bits) or see below

Subcarrier assignment

- Data sub-carriers (may include Nulls)
- Continuous Pilots
- Exclusion bands
- PHY Link Channel subcarrier
- 8192 x 4 bits



Downstream OFDM Profile Descriptor

Bit loading

- 4-bits per sub-carrier describe constellation size (0 for nulls or any other subcarrier that does not carry data)
- Size of the bit loading table is 8192 x 4 bits

Initial Ranging Signal Description

Information required for Initial and Fine Ranging signals transmission

Initial ranging characteristics

- Upstream OFDM parameters
- Preamble sequence (256 bits)
- Number of symbols
- Number of subcarriers (not including guard band)
- Window size for initial ranging
- Start and number of RBs allocated for the initial ranging (1-4K, 256)

Fine ranging characteristics (unicast)

- CNU identifier Upstream OFDM parameters
- Preamble sequence (256 bits)
- Number of symbols (1)
- Number of subcarriers (not including guard band) (1-256)
- Start and number of RBs allocated for the fine ranging (1-4K, 256)
- Transmission Power correction
- Transmission offset correction

Upstream OFDM parameters

- FFT size, CP size, Window size (each one Byte)
- Center frequency (18 bits if in KHz?)
- OFDMA frame size (number of symbols)
- Resource block size (number of subcarriers)

Subcarrier assignment

Exclusion bands

Questions for considerations

- 1. Upstream PLC channel details for initial ranging should it be carried over the PLC?
- 2. Do we have a PLC per OFDM channel or a single PLC for all channels
- 3. If a PLC per channel:
 - are all the same carrying information on all channels
 - Every PLC carry information for its own channel
- 4. Do we want more than a single PLC per channel for backup?



THANK YOU