

INFORMATION CARRIED BY THE PLC

For FDD Transmission Mode

Avi Kliger, Broadcom

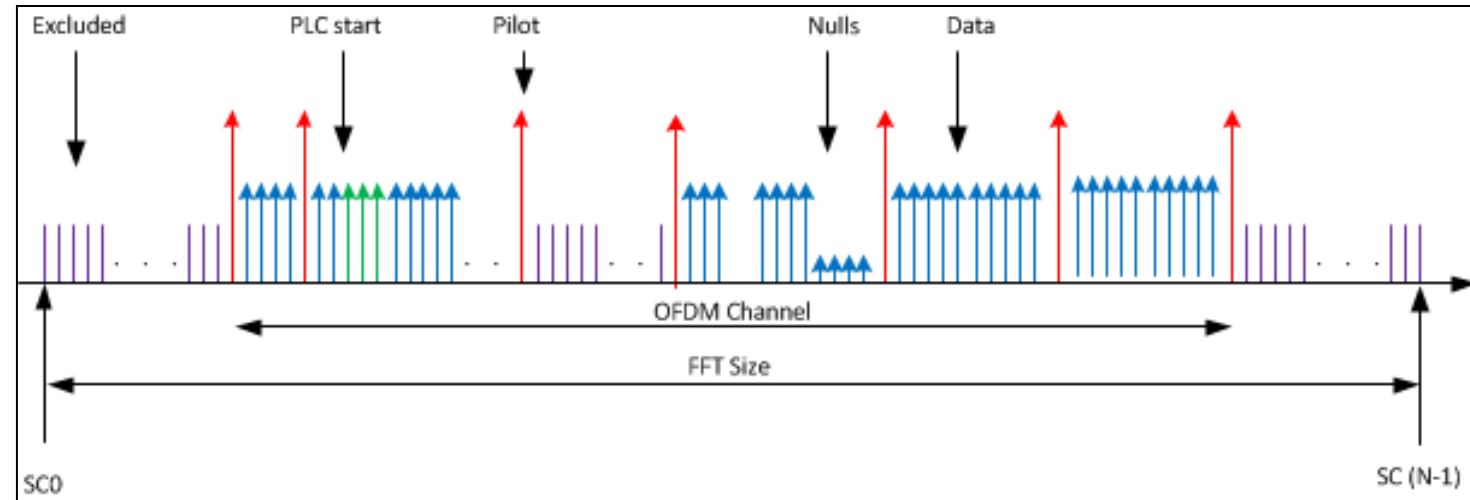
Information on the Downstream PLC

- 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 basis: 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)
 - 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
- Number of symbols
- Number of subcarriers (not including guard band)
- Window size for ranging

- **Fine ranging characteristics (unicast)**

- CNU identifier Upstream OFDM parameters
- Preamble sequence
- Number of subcarriers
- Number of symbols
- Number of subcarriers (not including guard band)
- 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)
- Upstream PLC location (start subcarrier 13 bits)

- **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*



THANK YOU