101.3.2.5.4 FEC Codeword Pointer

When the CLT begins encoding a new FEC codeword it predicts the beginning of the next FEC codeword by adding the value 16225 decimal (B_Q*65+40+C_Q*65+C_{PL}+C_P) to the lower 16 bits of the timestamp counter. This value is presented to the PHY Link to be included as the FEC Codeword Pointer (FCP) in the downstream PHY Link frame (see 102.2.3.1.3).

Modify section 101.3.3.1.2 LDPC decoding process within CNU (downstream) by adding the following paragraph after the 1st existing paragraph and 1st EDITORS NOTE.

The CNU downstream PCS may use the FEC Codeword Pointer, passed from the PHY Link Message Engine to the PCS, to assist in aligning the FEC decoding process to the downstream data. The FEC codeword generation process is asynchronous to the PHY Link frame, thus there is no guarantee that the FEC codeword Pointer is pointing to some point the future when it is extracted at the CNU. However, by repeatedly adding a fixed value of 16225 decimal (B_Q*65+40+C_Q*65+C_{PL}+C_P) to the pointer until it is greater than the lower 16 bits of the current local timestamp the CNU can predict when the next FEC codeword boundary will occur at the CNU.

Modify section 102.2.3.1.3 DS FEC Parity message block by replacing the section title and content with that show below.

102.2.3.1.3 Downstream FEC Parity message block

The downstream FEC Parity message block includes a four bit Type field, a 16 bit FEC Codeword Pointer (FCP) and a 32 bit CRC. The four bit Type field carriers a value of 0xC (see Table 102-5). The FEC Codeword Pointer is a 16 bit field, provided to the CLT PHY Message Engine by the EPoC PCS (see 101.3.2.5.4), used to identify the start of a FEC codeword in the downstream MAC data. The contents of the FEC Parity message block is protected by a CRC(32). See 3.2.9 for a description of how this field is calculated.

The FEC Codeword Pointer is extracted by the CNU PHY Message Engine and supplied to the downstream PCS receiver to assist in locating the FEC codeword boundary (see 101.3.3.1.2).

There is a conflict in the use of the term "NCP"; in some cases it refers to cyclic prefix length and at other times it refers to Next Codeword Pointer. Search the draft for the term "NCP"; when it refers to next codeword pointer, replace it with "FEC Codeword Pointer". In figures the abbreviation "FCP" may be used. This is covered in separate comments against CL 100 & 102.