

EPoC PCS Status Update (Clause 101)

Marek Hajduczenia

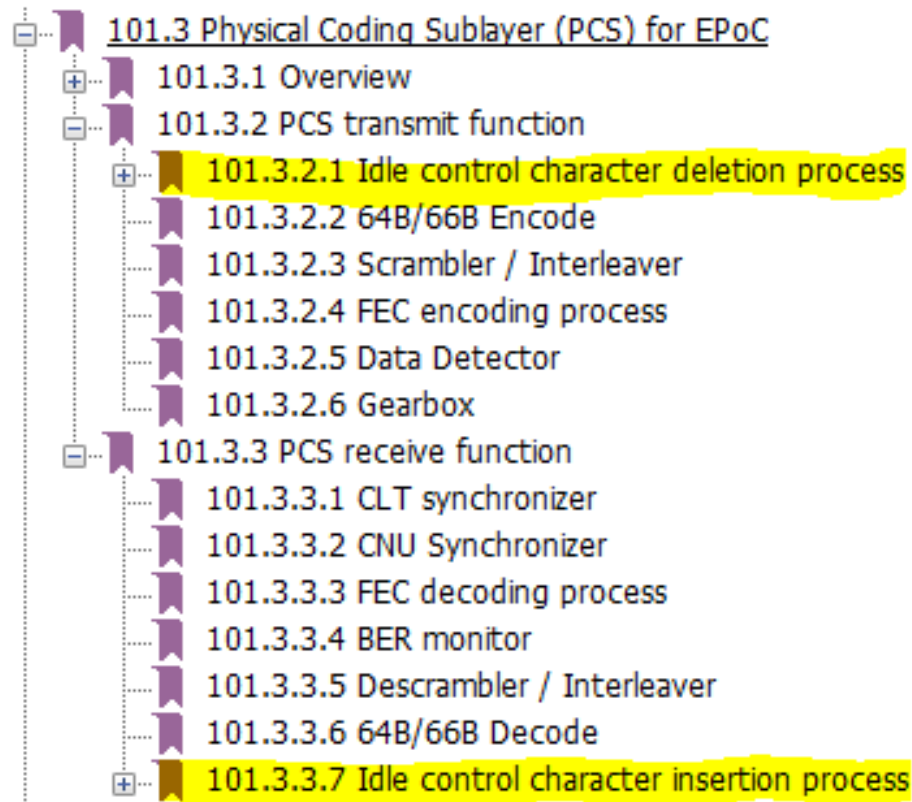
Clause 101 Editor

Clause 101 Outline

- [-] 101. Reconciliation Sublayer, Physical Coding Sublayer, and Physical Media Attachment for EPoC
 - [-] 101.1 Overview
 - 101.1.1 Conventions
 - 101.1.2 Constraints for delay through RS, PCS, and PMA
 - [-] 101.2 Reconciliation Sublayer (RS) for EPoC
 - 101.2.1 Overview of EPoC RS operation
 - 101.2.2 Summary of major concepts
 - [+] 101.2.3 10 Gigabit Media Independent Interface (XGMII)
 - [+] 101.2.4 Functional specifications for multiple MAC instances
 - [-] 101.3 Physical Coding Sublayer (PCS) for EPoC
 - [+] 101.3.1 Overview
 - [+] 101.3.2 PCS transmit function
 - [+] 101.3.3 PCS receive function
 - 101.4 EPoC_PMD_Name PMA
 - 101.5 Power-saving capabilities
 - 101.6 TimeSync capability
 - [-] 101.7 Protocol implementation conformance statement (PICS) proforma for Clause 101,
 - 101.7.1 Introduction
 - [+] 101.7.2 Identification
 - 101.7.3 Major capabilities/options
 - [+] 101.7.4 PICS proforma tables for clause title

Incoming contributions (a)

- hajduczenia_3bn_01_0513.pdf covering technical decisions #43 and #45 (Idle Insertion and Idle Deletion processes)

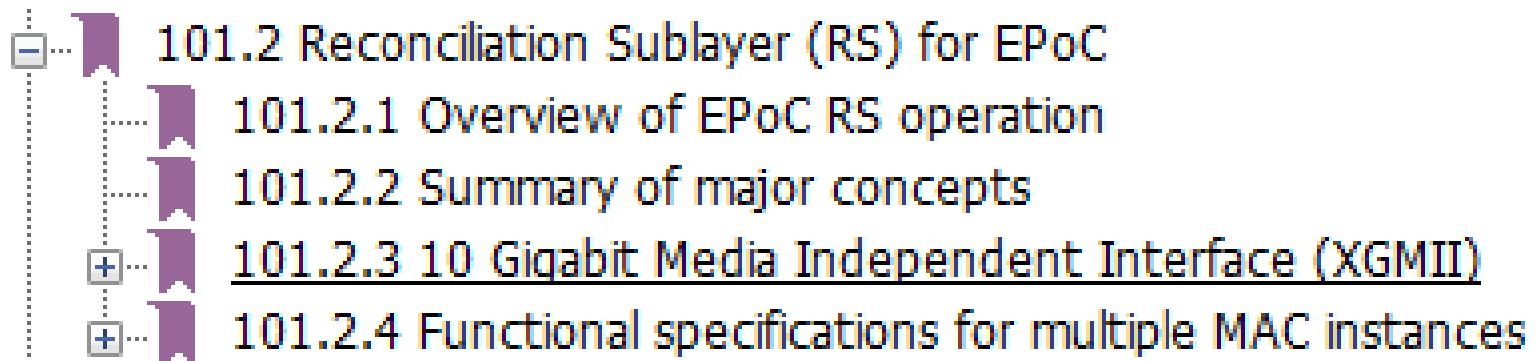


A table of contents for the 101.3 Physical Coding Sublayer (PCS) for EPoC. The table is structured with a vertical dotted line on the left side, and each item is preceded by a small icon (either a minus sign in a square or a plus sign in a square) and a purple bookmark icon. The items are listed as follows:

- 101.3 Physical Coding Sublayer (PCS) for EPoC
 - + 101.3.1 Overview
 - 101.3.2 PCS transmit function
 - + 101.3.2.1 Idle control character deletion process
 - 101.3.2.2 64B/66B Encode
 - 101.3.2.3 Scrambler / Interleaver
 - 101.3.2.4 FEC encoding process
 - 101.3.2.5 Data Detector
 - 101.3.2.6 Gearbox
 - 101.3.3 PCS receive function
 - 101.3.3.1 CLT synchronizer
 - 101.3.3.2 CNU Synchronizer
 - 101.3.3.3 FEC decoding process
 - 101.3.3.4 BER monitor
 - 101.3.3.5 Descrambler / Interleaver
 - 101.3.3.6 64B/66B Decode
 - + 101.3.3.7 Idle control character insertion process

Incoming contributions (b)

- hajduczenia_3bn_03_0513.pdf covering the definition of EPoC RS
 - Contribution into 101.2 is fairly complete and requires editorial polishing only
 - All subclauses within 101.2 are provided for and are ready for commenting

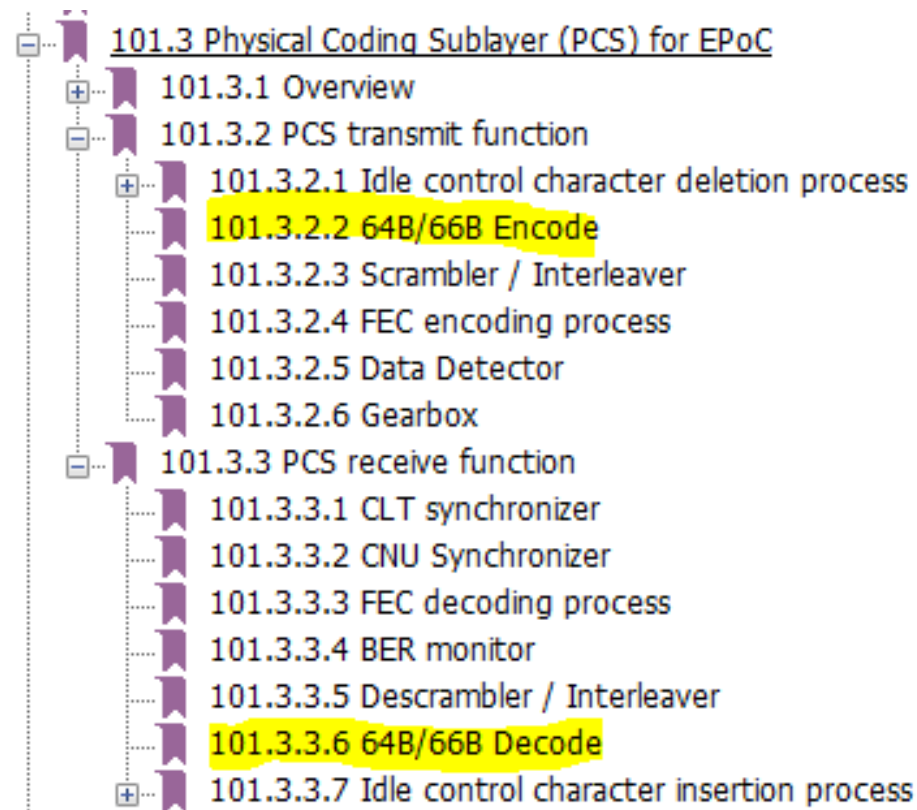


A table of contents for the document '101.2 Reconciliation Sublayer (RS) for EPoC'. The table is presented in a collapsed state, indicated by a minus sign icon on the left. It lists five subclauses, each with a purple bookmark icon to its left. The third subclause, '101.2.3 10 Gigabit Media Independent Interface (XGMII)', is underlined. The first subclause, '101.2 Reconciliation Sublayer (RS) for EPoC', has a minus sign icon to its left. The other subclauses have plus sign icons to their left, indicating they are collapsed.

[-]	101.2 Reconciliation Sublayer (RS) for EPoC
[+]	101.2.1 Overview of EPoC RS operation
[+]	101.2.2 Summary of major concepts
[+]	<u>101.2.3 10 Gigabit Media Independent Interface (XGMII)</u>
[+]	101.2.4 Functional specifications for multiple MAC instances

Incoming contributions (c)

- hajduczenia_3bn_04_0513.pdf covering the 64B/66B encode and decode processes (technical decision #20)

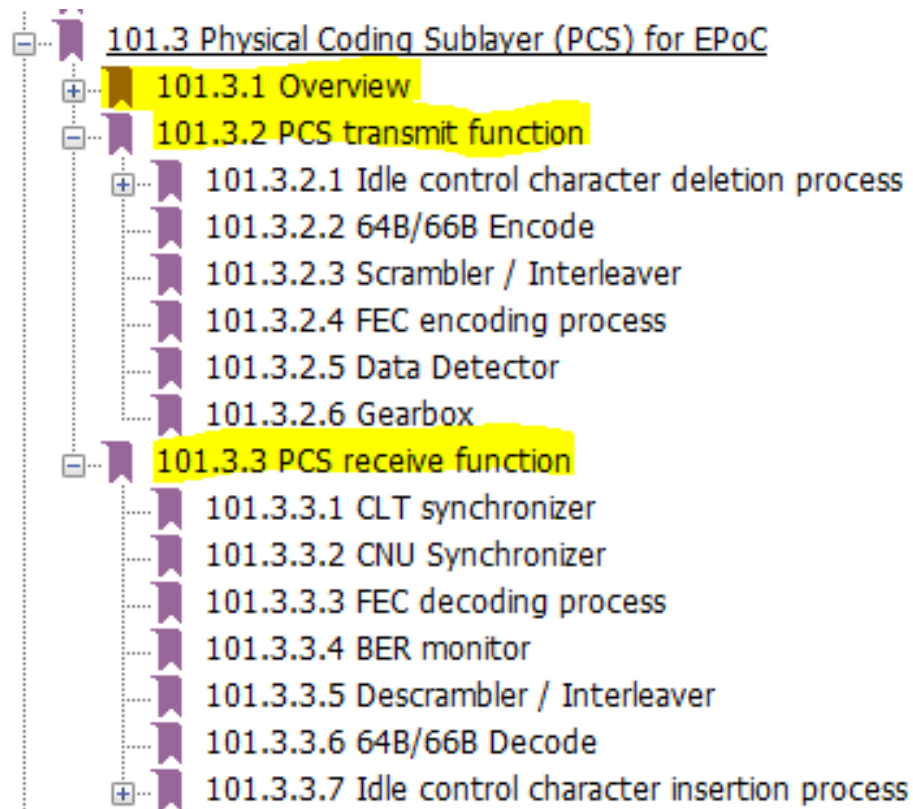


A table of contents for the document '101.3 Physical Coding Sublayer (PCS) for EPoC'. The table is structured with a vertical dotted line on the left side, and each item is preceded by a purple bookmark icon. The items are: 101.3 Physical Coding Sublayer (PCS) for EPoC (with a minus sign icon), 101.3.1 Overview (with a plus sign icon), 101.3.2 PCS transmit function (with a minus sign icon), 101.3.2.1 Idle control character deletion process (with a plus sign icon), 101.3.2.2 64B/66B Encode (highlighted in yellow), 101.3.2.3 Scrambler / Interleaver, 101.3.2.4 FEC encoding process, 101.3.2.5 Data Detector, 101.3.2.6 Gearbox, 101.3.3 PCS receive function (with a minus sign icon), 101.3.3.1 CLT synchronizer, 101.3.3.2 CNU Synchronizer, 101.3.3.3 FEC decoding process, 101.3.3.4 BER monitor, 101.3.3.5 Descrambler / Interleaver, 101.3.3.6 64B/66B Decode (highlighted in yellow), and 101.3.3.7 Idle control character insertion process (with a plus sign icon).

-	101.3 Physical Coding Sublayer (PCS) for EPoC
+	101.3.1 Overview
-	101.3.2 PCS transmit function
+	101.3.2.1 Idle control character deletion process
	101.3.2.2 64B/66B Encode
	101.3.2.3 Scrambler / Interleaver
	101.3.2.4 FEC encoding process
	101.3.2.5 Data Detector
	101.3.2.6 Gearbox
-	101.3.3 PCS receive function
	101.3.3.1 CLT synchronizer
	101.3.3.2 CNU Synchronizer
	101.3.3.3 FEC decoding process
	101.3.3.4 BER monitor
	101.3.3.5 Descrambler / Interleaver
	101.3.3.6 64B/66B Decode
+	101.3.3.7 Idle control character insertion process

Incoming contributions (d)

- hajduczenia_3bn_06_0513.pdf covering the introduction text into 101.3 (PCS) and description of transmit and receive functions



Missing contributions

- Missing bit-ticket items
 - FEC (location, type, operation, etc.)
 - Data detector in CNU and CLT
 - Gearbox in Tx direction
 - Scrambler / Interleaver
 - Synchronizer in CNU and CLT
 - BER / FER monitor
 - TimeSync capability
 - Power Saving capability
- Missing discussion on aligning TDD and FDD PCS definitions into a single clause material (?)

Summary

- A number of areas within EPoC PCS still requires direct contributions and technical decisions:
 - See previous slide and email discussion for more details on this topic
- Some contributions into PCS were submitted at this meeting and will be discussed
 - Hopefully, these start a snowball of contributions for the next meeting, allowing more editing to be done
- Configuration parameters (registers, etc.) are missing at this time (will be developed once PCS structure is more settled)
- PICS for PCS will be developed once PCS structure becomes more consolidated