Oct.21, 2002

To: T10 Technical Committee

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Re: SAS Bit Ordering Diagrams Change Proposal

Overview

Two figures in sas-r02a incorrectly show bit transposition logic required prior to 8b/10b
encoding/decoding. Three figures in sas-r02a are incorrectly lacking bit transposition logic
and/or bit inversion logic associated with SAS CRC functionality.

Additionally, in order to provide clarity for the distinction between SSP, SMP, and STP CRC
generation and checking requirements, this document proposes the inclusion of three new fig-
ures that indicate the byte ordering, bit ordering, and CRC requirements for STP transmit and
receive data paths.

Proposed Changes to sas-r02a Specification:

1) Figures 35 and 36 incorrectly show bit transposition being done within each byte of a
   dword prior to the 8b/10 encoding/decoding logic. Propose that these diagrams get replaced
   with the following diagrams:
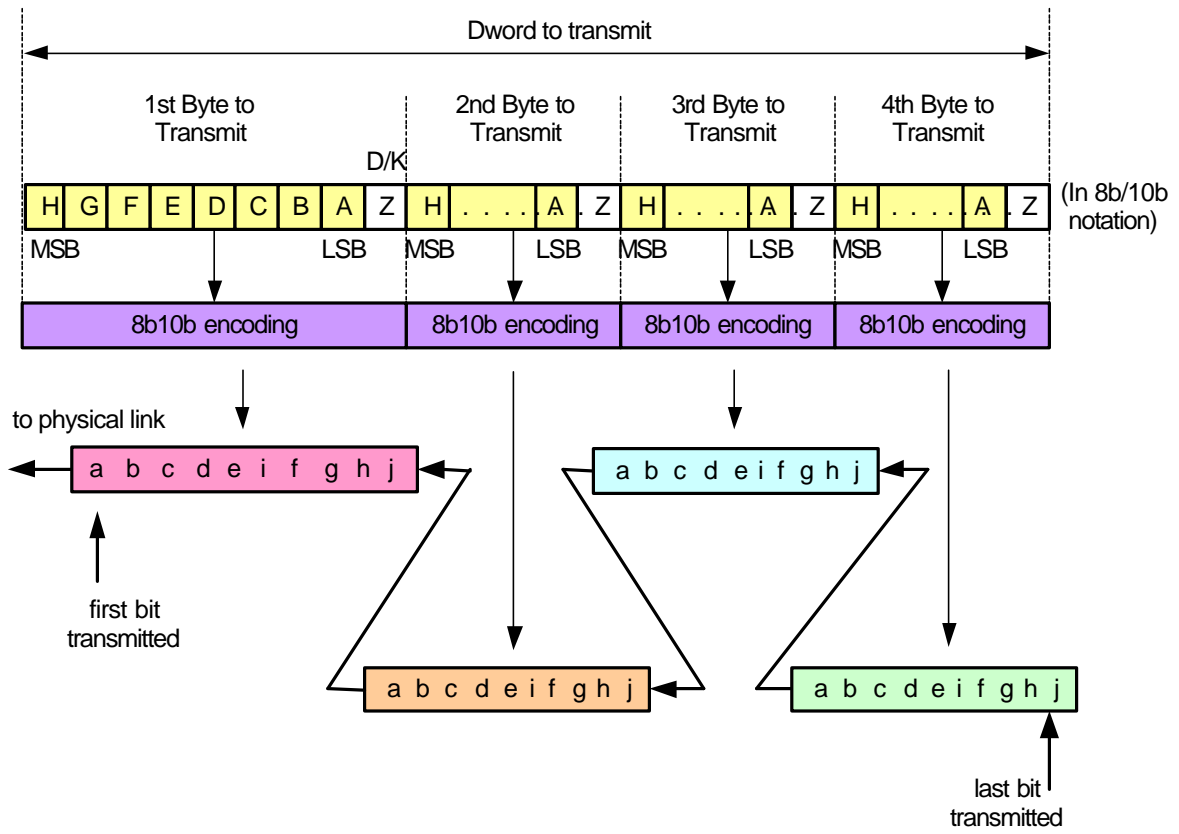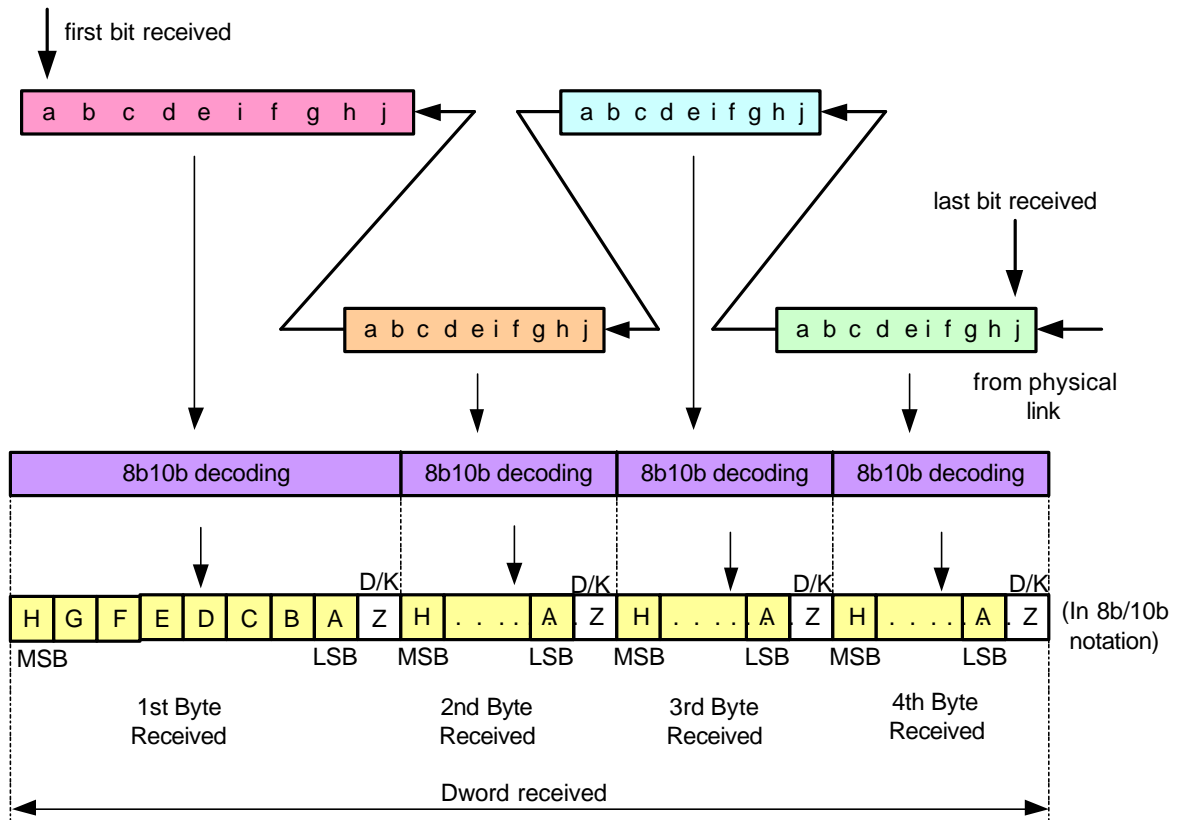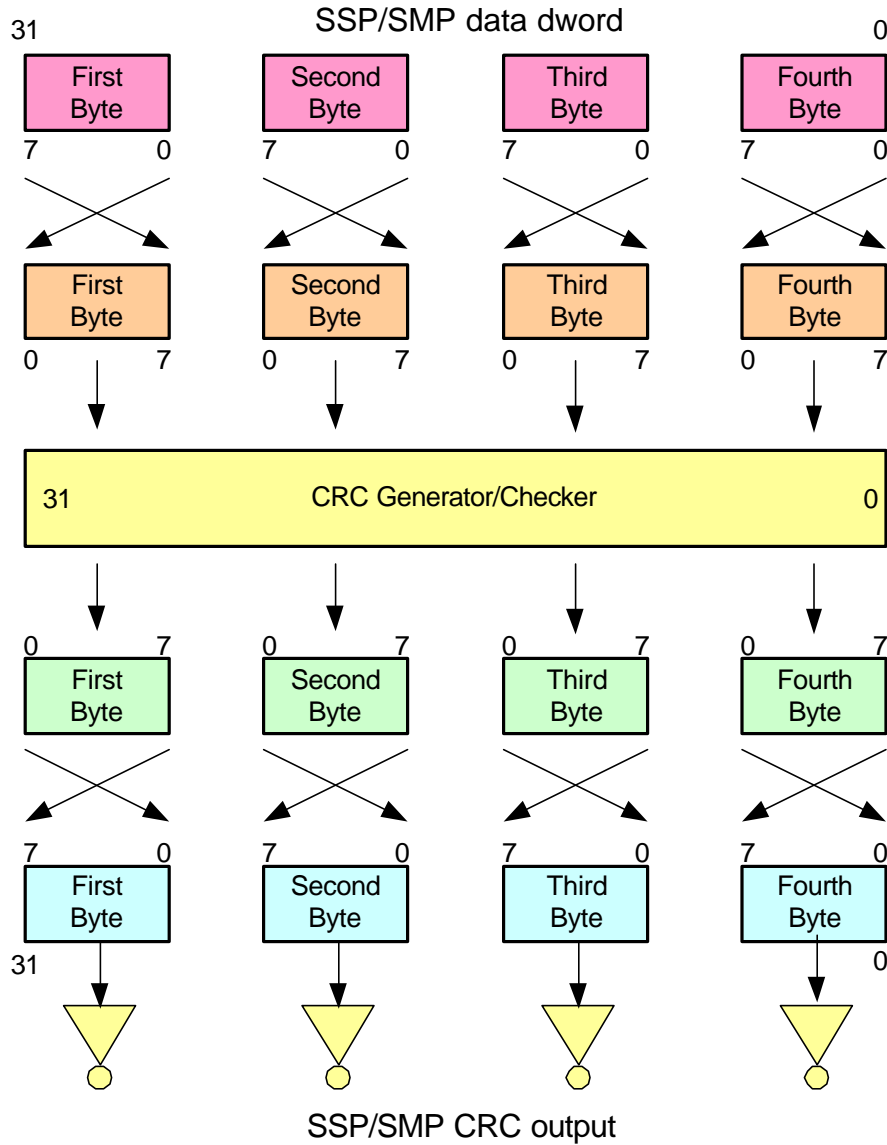
Figure 35 – SAS bit transmission logic

Figure 36 – SAS bit reception logic

2) Figure 55 is missing bit inversion at the output of the CRC generator. Propose to replace
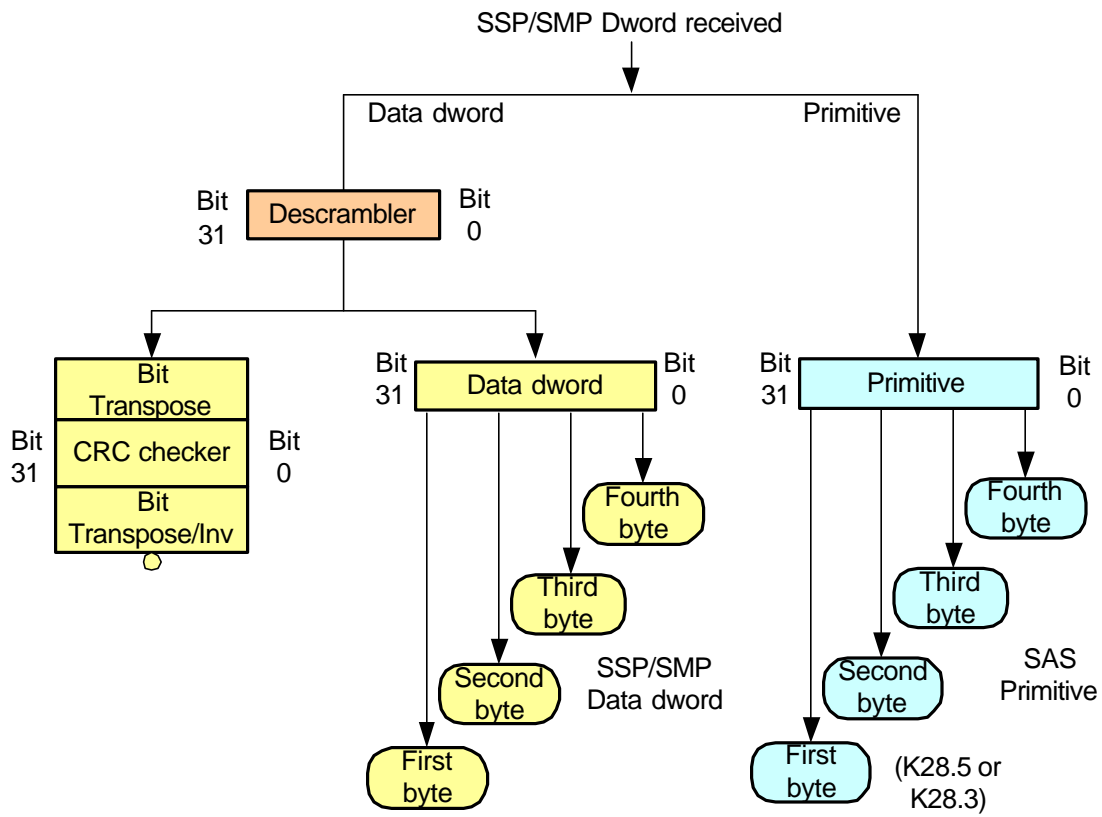   with the following figure which shows the outputs being inverted:

Figure 55 – SSP/SMP CRC generator/checker byte and bit order

3) Figures 56 and 57 do not show the bit transposition and inversion logic associated with the SSP/SMP CRC generator/checker. Propose to replace with the following figures:
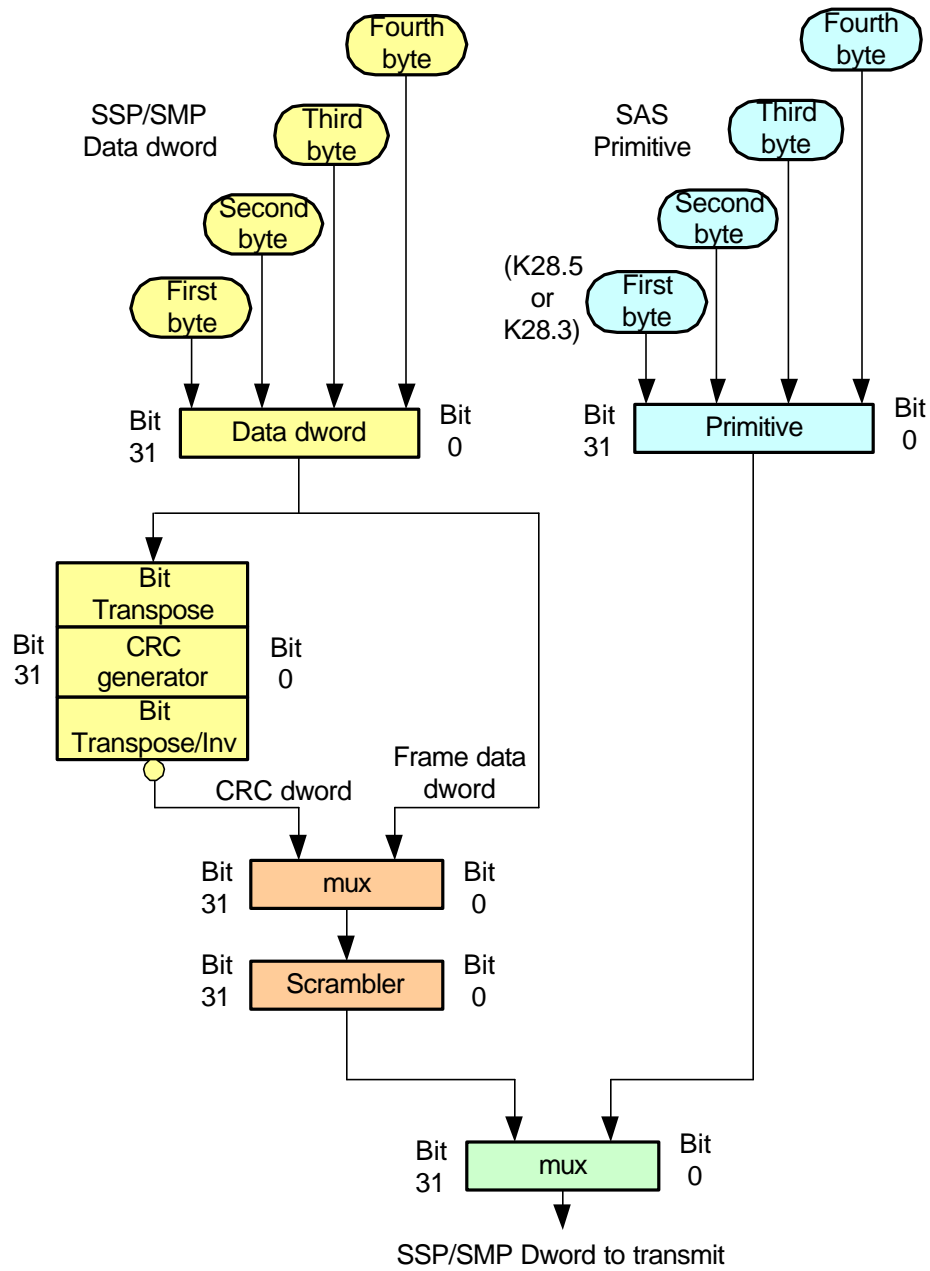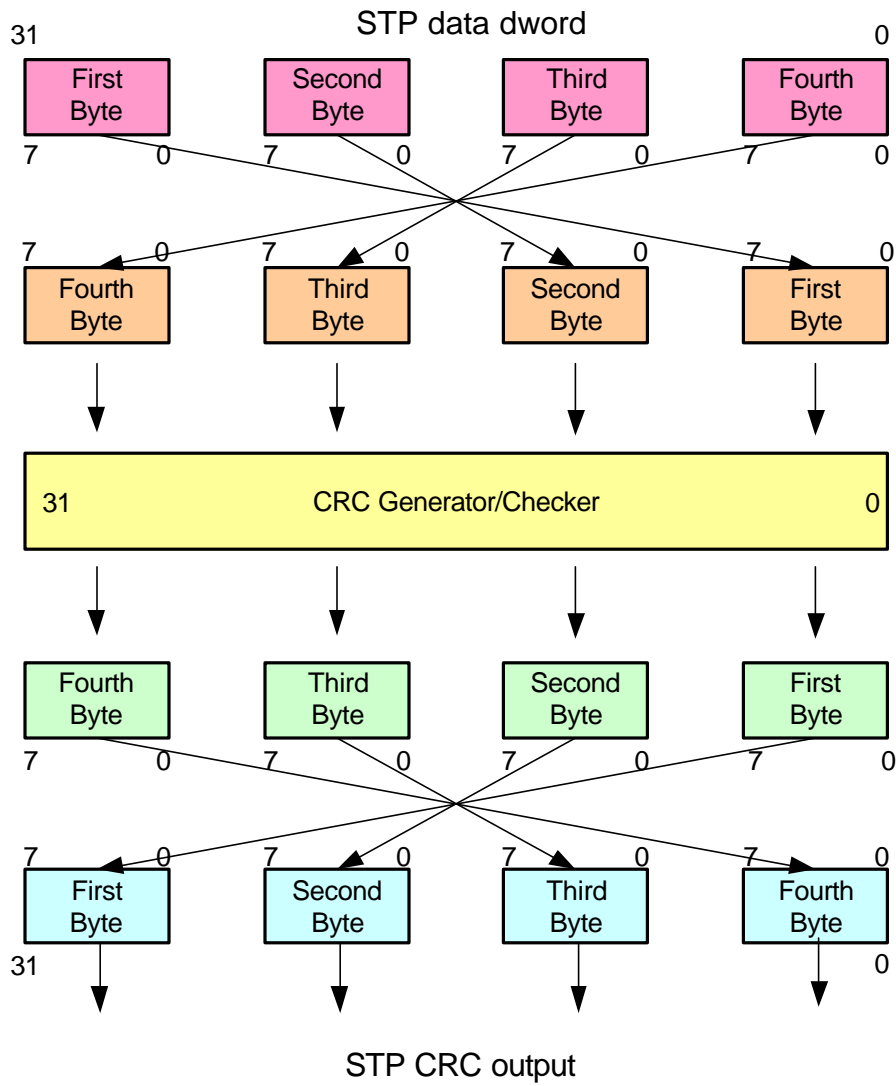
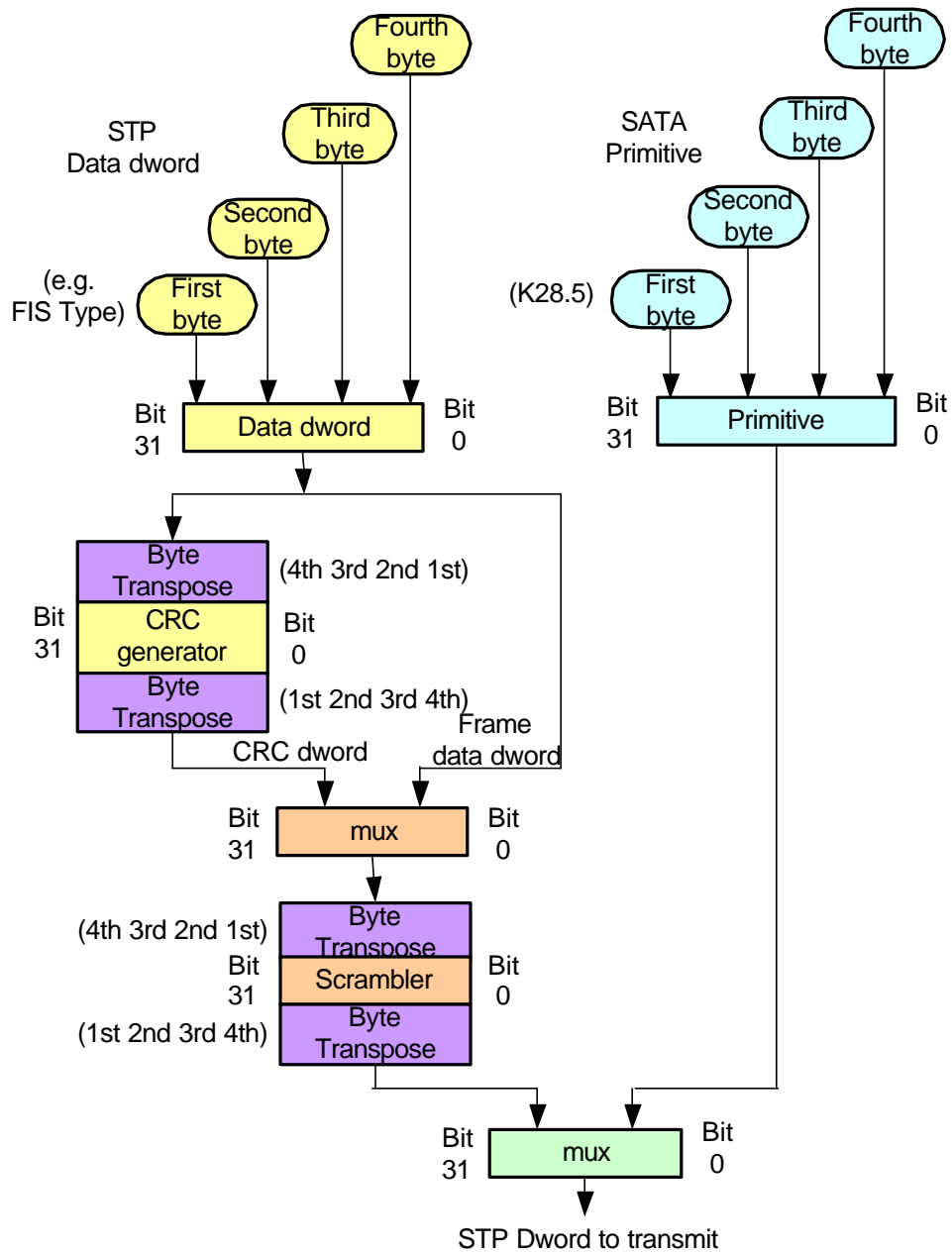**Figure 56 – SSP/SMP Transmit path byte and bit ordering**

Figure 57 – SSP/SMP Receive path byte and bit ordering

4) Propose that three diagrams be added to clarify the byte ordering for STP data paths and the
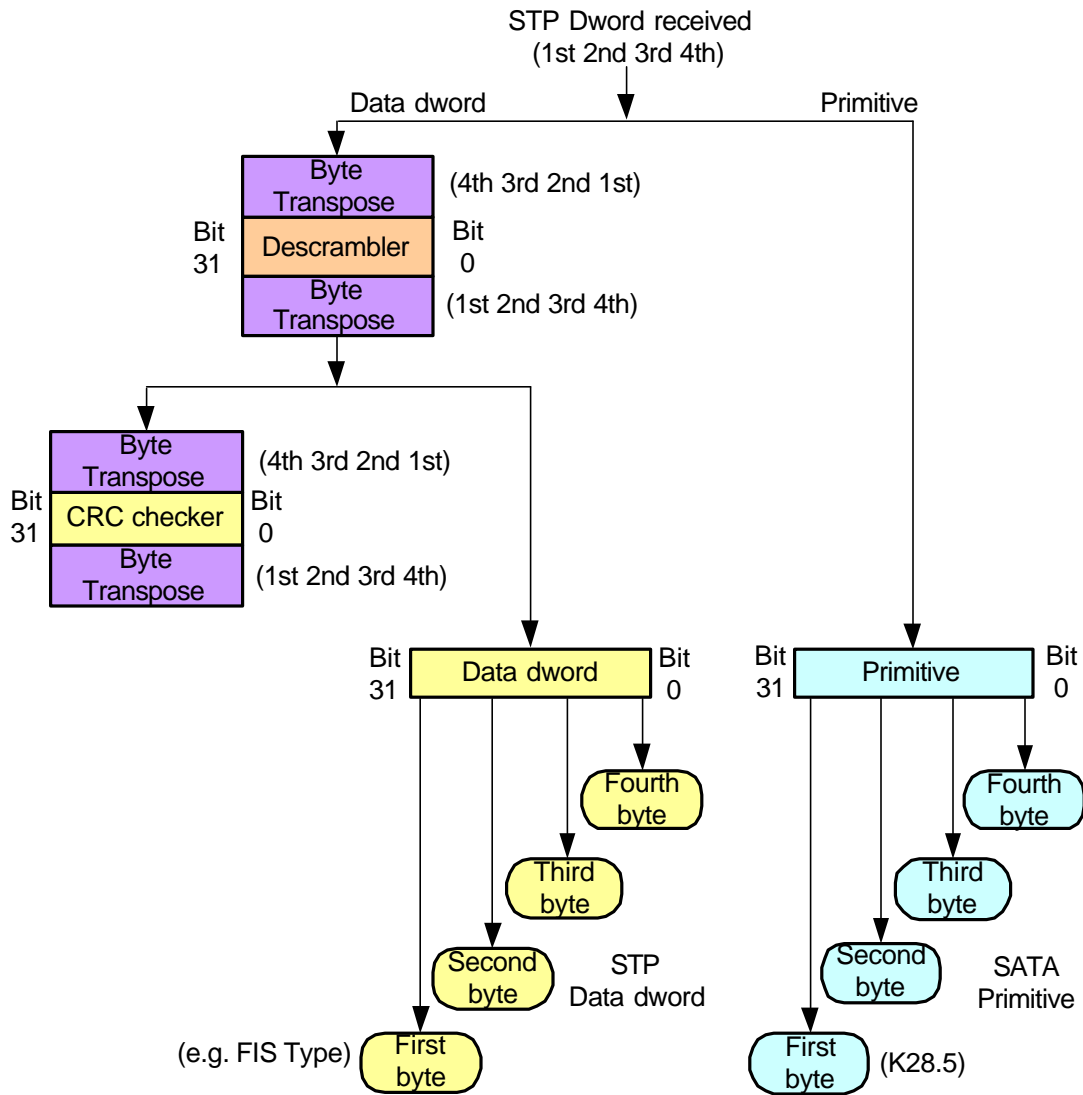difference between SSP, SMP and STP CRC requirements.

Figure XX - STP CRC generator/checker byte and bit ordering

Figure XX – STP Transmit path byte and bit ordering

Figure XX – STP Receive path byte and bit ordering