

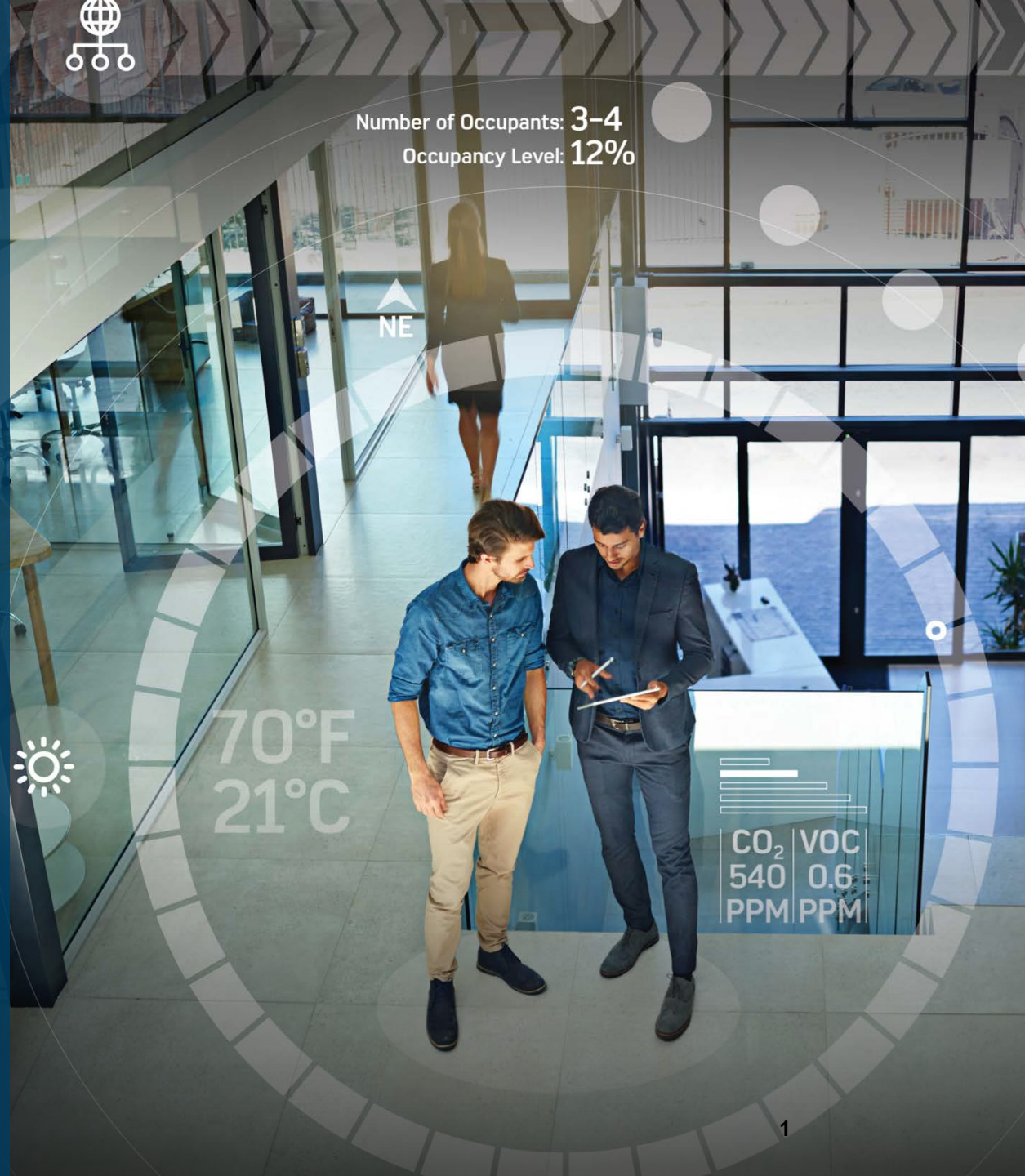


AHEAD OF WHAT'S POSSIBLE™

Clause 104 Cleanup

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Presentation Outline

- ▶ Cleanup baseline text for describing SCCP Commands

- Previous instructions were insufficient
- Reference: [stewart_0918_01b.pdf](#)

- ▶ Add Two SCCP Commands:
 - 0xBB : VOLT_POWER_INFO Read
 - 0x99 : POWER_ASSIGN Write

- Reference: [stewart_3cg_01e_1118.pdf](#)

- ▶ Add SCCP Command
 - 0x81 : POWER_ASSIGN_READBACK

- ▶ Fix CRC Field calculation to cover all possible payloads

Modify 104.7

- ▶ Shall related to VOLT_POWER_INFO and POWER_ASSIGN was *previously* added to 104.7 by [stewart_3cg_01e_1118.pdf](#)
- ▶ Move shall format and location to match pre-existing sister Read_Scratchpad function command

104.7.2.4 Read_Scratchpad function command [0xAA]

All SCCP-capable PDs shall support the 8-bit Read_Scratchpad command. After receiving a Read_Scratchpad function command the PD shall respond with a 16-bit CLASS_TYPE_INFO read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read_Scratchpad function command is shown in Figure 104–13. Table 104–9 illustrates the contents of the CLASS_TYPE_INFO register.

- ▶ Delete VOLT_POWER_INFO and POWER_ASSIGN shall from 104.7 (moved to command descriptions)

Measurement of initial cable resistance, $R_{\text{Cable_initial}}$, by PSEs and PDs that implement SCCP is optional. PSEs and PDs that implement cable resistance measurement ~~shall~~ support the VOLT_POWER_INFO and POWER_ASSIGN registers (Table 104.10, ~~and~~ 104.11). PSEs that implement cable resistance measurement shall report assigned power through PSE Status Register 2 (See 45.2.7b.3).

Modify 104.7.2.6 - Read_VOLT_POWER_INFO function command

- Fix shall format and location to match pre-existing sister Read_Scratchpad function command

104.7.2.4 Read_Scratchpad function command [0xAA]

All SCCP-capable PDs shall support the 8-bit Read_Scratchpad command. After receiving a Read_Scratchpad function command the PD shall respond with a 16-bit CLASS_TYPE_INFO read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read_Scratchpad function command is shown in Figure 104–13. Table 104–9 illustrates the contents of the CLASS_TYPE_INFO register.

- Modify 104.7.2.6 as shown below:

~~104.7.2.6 Voltage reported by PD [VOLT_POWER_INFO]~~

~~The assignment of bits in the VOLT_POWER_INFO register is shown Table 104–10.~~

104.7.2.6 Read_VOLT_POWER_INFO function command [0xBB]

All PSEs and PDs that support Cable Resistance Measurement shall support the 8-bit Read_VOLT_POWER_INFO command. After receiving a Read_VOLT_POWER_INFO function command the PD shall respond with a 16-bit VOLT_POWER_INFO read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read_VOLT_POWER_INFO function command is shown in Figure 104–13. Table 104–10 illustrates the contents of the VOLT_POWER_INFO register.

Modify 104.7.2.7 - Write_POWER_ASSIGN function command

- ▶ Reference: [stewart_0918_01b.pdf](#)
- ▶ Rename “POWER_ASSIGN” to “Write_POWER_ASSIGN”
- ▶ Modify 104.7.2.7 as shown below:

~~104.7.2.7 PD assigned power [POWER_ASSIGN]~~

~~The assignment of bits in the POWER_ASSIGN register is shown in Table 104–11~~

~~104.7.2.7 Write_POWER_ASSIGN function command [0x99]~~

~~All PSEs and PDs that support Cable Resistance Measurement shall support the 8-bit Write_POWER_ASSIGN command. After transmitting a Write_POWER_ASSIGN function command the PSE shall transmit a 16-bit POWER_ASSIGN write payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Write_POWER_ASSIGN function command is shown in Figure 104–13. Table 104–11 illustrates the contents of the POWER_ASSIGN register.~~

Modify 104.7.2.8 - Read_POWER_ASSIGN function command

- ▶ Reference: [stewart_3cg_01e_1118.pdf](#)
- ▶ Rename “Read_POWER_ASSIGN_READBACK” to “Read_POWER_ASSIGN”
- ▶ Modify 104.7.2.8 as shown below:

~~104.7.2.8 PSE Power Assignment Readback [POWER_ASSIGN_READBACK] [0x81]~~

~~*Editor’s note (to be removed prior to Sponsor Ballot) – Comment #XXX added an optional command for the PSE to readback the power assignment. Changes with detailed text and to allow the register and format of the readback were not provided with the comment, and are needed to complete the resolution. Commenters are encouraged to provide comments with the complete text for this function.*~~

~~104.7.2.8 Read_POWER_ASSIGN function command [0x81]~~

~~All PSEs and PDs that support Cable Resistance Measurement shall support the 8-bit Read_POWER_ASSIGN command. After receiving a Read_POWER_ASSIGN function command the PD shall respond with a 16-bit POWER_ASSIGN read payload followed by an 8-bit CRC8 field as specified in 104.7.2.5. A flowchart for operation of the address and the Read_POWER_ASSIGN function command is shown in Figure 104–13. Table 104–11 illustrates the contents of the POWER_ASSIGN register.~~

Modify 104.5.3.5

- ▶ Reference: [stewart_0918_01b.pdf](#)
- ▶ Modify 104.5.3.5 as shown below:

104.5.3.5 Functions

~~do_sccp~~

~~This function returns the following variable to the PSE:~~

~~CLASS_TYPE_INFO register: refer to Table 104–9 for a description of the contents. PDs that support cable resistance measurement shall also return the VOLT_POWER_INFO register. Refer Table 104–10 for description of contents.~~

do_sccp

This function returns the following variable to the PSE:

CLASS_TYPE_INFO register:

Refer to Table 104–9 for a description of the contents.

VOLT_POWER_INFO register:

PDs that support cable resistance measurement also return the VOLT_POWER_INFO register. Refer to Table 104–10 for a description of contents.

POWER_ASSIGN register:

PDs that support cable resistance measurement also return the POWER_ASSIGN register. Refer to Table 104–11 for a description of contents.

Modify 104.4.3.5

- ▶ Reference: [stewart 0918 01b.pdf](#)
- ▶ Modify 104.4.3.5 as shown below:

104.4.3.5 Functions

~~do_classification~~

~~This function returns the following variables:~~

~~CLASS_TYPE_INFO register:~~

~~The register contains 16 bits of information regarding the type and class of the PD. Refer to Table 104–9 for a description of the contents. PSEs that support cable resistance measurement shall also return the VOLT_POWER_INFO, POWER_ASSIGN registers. Refer to Table 104–10 and Table 104–11 for a description of contents.~~

do_classification

This function returns the following variables:

CLASS_TYPE_INFO register:

Refer to Table 104–9 for a description of the contents.

VOLT_POWER_INFO register:

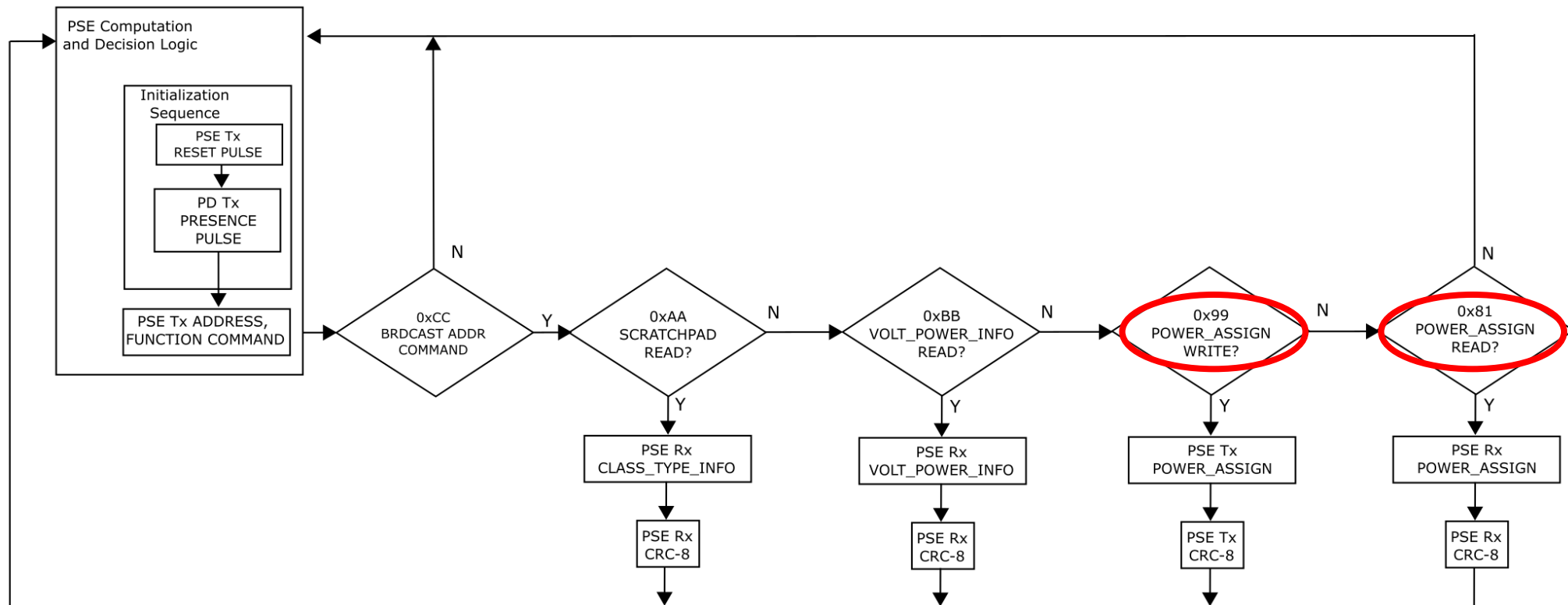
PSEs that support cable resistance measurement also return the VOLT_POWER_INFO register. Refer to Table 104–10 for a description of contents.

POWER_ASSIGN register:

PSEs that support cable resistance measurement also return the POWER_ASSIGN register. Refer to Table 104–11 for a description of contents.

Rename in SCCP Flowchart

- Flowchart with modified command names
- Replace Figure 104-13 with the one shown below (name changes):



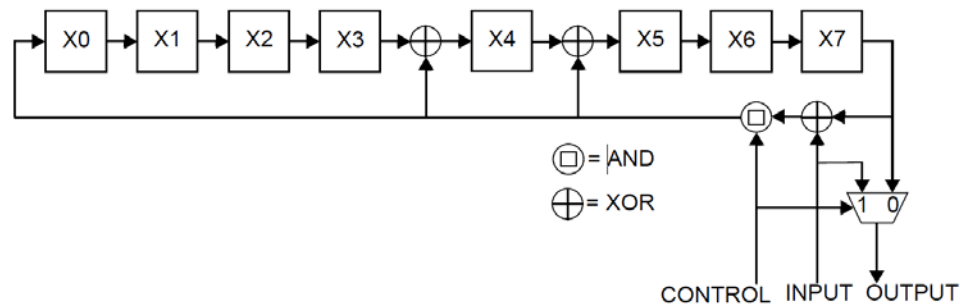
*note to editor: Figure without highlighting in backup slides

Modify 104.7.2.5

- CRC calculation to include all SCCP commands
- Modify 104.7.2.5 and Figure 104-14 as shown below:

104.7.2.5 CRC8 field

The CRC8 field is an 8-bit cyclic redundancy check value. This value is computed as a function of the contents of the preceding 16-bit ~~Scratchpad Read~~ Read/Write payload.



CONTROL = 1 when shifting the contents of the ~~CLASS_TYPE_INFO~~ register and calculating the CRC field
CONTROL = 0 when transmitting the CRC field

Figure 104-14—CRC8 field generation

Thank You!

QUESTIONS? FEEDBACK?

Backup Slides

New SCCP Flowchart without highlighting

- Replace Figure 104-13 with the one shown below:

