**3GPP TSG-CT WG1 Meeting #132-eC1-21xxxx**

**E-meeting, 11-15 October 2021 (was C1-215704)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.539** | **CR** | **0008** | **rev** | **1** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Enabling selective read, set and subscribe/notify of port and user plane node parameters | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IIoT | | | | |  | ***Date:*** | | | 2021-10-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) ... Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In LS S2-2106767, SA2 asked CT1 to:   * **Q1:** Consider whether a solution to allow the TSN AF (or TSCTSF) to read / write / subscribe to a selected parameter in a larger UMIC or PMIC data structure in a more efficient manner, avoiding the transfer of additional data that are not related to the parameter that is being read or subscribed to, is possible * **Q2:** clarify what happens in terms of the status of the PTP information available in the TT that is not included in the UMIC or PMIC for the case when the TSN AF (or TSCTSF) is sending UMIC or PMIC to a TT containing only partial PTP instance information   To meet the request in **Q1**, it is proposed to introduce new operation codes “Selective read parameter”, “Selective subscribe-notify for parameter” and “Selective unsubscribe for parameter” which are associated not only with a parameter name but also with a parameter value, to enable read or subscribe/notify of parameters nested into another parameter such as the PTP instance list or the DS-TT port time synchronization information list (see DP C1-215703 for more details).  Regarding **Q2**, it is proposed to clarify that the status at the TT of any parameter not associated with operation code “Set parameter” in a MANAGE PORT COMMAND or MANAGE USER PLANE NODE COMMAND remains unchanged. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. New operation codes “Selective read parameter”, “Selective subscribe-notifiy for parameter” and “Selective unsubscribe for parameter” and their handling were introduced 2. NOTEs were added to clarify that the status at the TT of any parameter not associated with operation code “Set parameter” in a MANAGE PORT COMMAND or MANAGE USER PLANE NODE COMMAND remains unchanged | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | 1. Selective read and subscribe/notify of port and user plane node parameters will not be possible, leading to unnecessary transfer of data and waste of OTA resources 2. It will remain unclear what the expected TT behavior is when the TSN AF (or TSCTSF) is sending UMIC or PMIC to a TT containing only partial PTP instance information, leading to differing implementations and interoperability issues | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.1.3, 6.2.1.3, 6.3.1.3, 9.2, 9.5B, 9.15 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* First change \*\*\*

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**example:** text used to clarify abstract rules by applying them literally.

**Sub-parameter:** port parameter or user plane node parameter included into another port parameter or user plane node parameter consisting of a collection of sub-parameters. For instance, the PTP profile port parameter is a sub-parameter of the PTP instance list port parameter.

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.501 [2] apply:

**5G System**

**Time Sensitive Communication**

\*\*\* Next change \*\*\*

#### 5.2.1.3 Network-requested port management procedure completion

Upon receipt of the MANAGE PORT COMMAND message, for each operation included in the port management list IE, the DS-TT shall:

a) if the operation code is "get capabilities", include the list of port management parameters supported by the DS-TT in the port management capability IE of the MANAGE PORT COMPLETE message;

b) if the operation code is "read parameter", attempt to read the value of the parameter at the DS-TT port, and:

1) if the value of the parameter at the DS-TT port is read successfully, include the parameter and its current value in the port status IE of the MANAGE PORT COMPLETE message; and

2) if the value of the parameter at the DS-TT port was not read successfully, include the parameter and associated port management service cause value in the port status IE of the MANAGE PORT COMPLETE message;

c) if the operation code is "selective read parameter", attempt to read the value of the selected sub-parameter(s) of the parameter at the DS-TT port, and:

1) if the value of the selected sub-parameter(s) at the DS-TT port is read successfully, include the parameter with the selected sub-parameter(s) and their current value in the port status IE of the MANAGE PORT COMPLETE message; and

2) if the value of the selected sub-parameter(s) at the DS-TT port was not read successfully, include the parameter and associated port management service cause value in the port status IE of the MANAGE PORT COMPLETE message;

d) if the operation code is "set parameter", attempt to set the value of the parameter at the DS-TT port to the value specified in the operation, and:

1) if the value of the parameter at the DS-TT port is set successfully, include the parameter and its current value in the port update result IE of the MANAGE PORT COMPLETE message; and

2) if the value of the parameter at the DS-TT port was not set successfully, include the parameter and associated port management service cause value in the port update result IE of the MANAGE PORT COMPLETE message;

NOTE: The value and status at the DS-TT of any optional sub-parameter not included in a parameter value field associated with operation code "set parameter" in the port management list IE of the MANAGE PORT COMMAND remains unchanged.

e) if the operation code is "subscribe-notify for parameter", store the request from the TSN AF to be notified of changes in the value of the corresponding parameter;

f) if the operation code is "selective subscribe-notify for parameter", store the request from the TSN AF to be notified of changes in the value of the corresponding selected sub-parameter(s) of the parameter;

g) if the operation code is "unsubscribe for parameter", delete the stored request from the TSN AF to be notified of changes in the value of the corresponding parameter, if any;

h) if the operation code is "selective unsubscribe for parameter", delete the stored request from the TSN AF to be notified of changes in the value of the corresponding selected sub-parameter(s) of the parameter, if any; and

i) send the MANAGE PORT COMPLETE to the TSN AF via the SMF and the PCF as specified in 3GPP TS 23.502 [3].

\*\*\* Next change \*\*\*

#### 6.2.1.3 TSN AF-requested port management procedure completion

Upon receipt of the MANAGE PORT COMMAND message, for each operation included in the port management list IE, the NW-TT shall:

a) if the operation code is "get capabilities", include the list of port management parameters supported by the NW-TT in the port management capability IE of the MANAGE PORT COMPLETE message;

b) if the operation code is "read parameter", attempt to read the value of the parameter at the NW-TT port, and:

1) if the value of the parameter at the NW-TT port is read successfully, include the parameter and its current value in the port status IE of the MANAGE PORT COMPLETE message; and

2) if the value of the parameter at the NW-TT port was not read successfully, include the parameter and associated port management service cause value in the port status IE of the MANAGE PORT COMPLETE message;

c) if the operation code is "selective read parameter", attempt to read the value of the selected sub-parameter(s) of the parameter at the NW-TT port, and:

1) if the value of the selected sub-parameter(s) at the NW-TT port is read successfully, include the parameter with the selected sub-parameter(s) and their current value in the port status IE of the MANAGE PORT COMPLETE message; and

2) if the value of the selected sub-parameter(s) at the NW-TT port was not read successfully, include the parameter and associated port management service cause value in the port status IE of the MANAGE PORT COMPLETE message;

d) if the operation code is "set parameter", attempt to set the value of the parameter at the NW-TT port to the value specified in the operation, and:

1) if the value of the parameter at the NW-TT port is set successfully, include the parameter and its current value in the port update result IE of the MANAGE PORT COMPLETE message; and

2) if the value of the parameter at the NW-TT port was not set successfully, include the parameter and associated port management service cause value in the port update result IE of the MANAGE PORT COMPLETE message;

NOTE: The value and status at the NW-TT of any optional sub-parameter not included in the parameter value field associated with operation code "set parameter" in the port management list IE of the MANAGE PORT COMMAND remains unchanged.

e) if the operation code is "subscribe-notify for parameter", store the request from the TSN AF to be notified of changes in the value of the corresponding parameter;

f) if the operation code is "selective subscribe-notify for parameter", store the request from the TSN AF to be notified of changes in the value of the corresponding sub-parameter(s) of the parameter;

g) if the operation code is "unsubscribe for parameter", delete the stored request from the TSN AF to be notified of changes in the value of the corresponding parameter, if any;

h) if the operation code is "selective unsubscribe for parameter", delete the stored request from the TSN AF to be notified of changes in the value of the corresponding sub-parameter(s) of the parameter, if any; and

i) send the MANAGE PORT COMPLETE to the TSN AF via the SMF and the PCF as specified in 3GPP TS 23.502 [3].

\*\*\* Next change \*\*\*

#### 6.3.1.3 TSN AF-requested User plane node management procedure completion

Upon receipt of the MANAGE USER PLANE NODE COMMAND message, for each operation included in the User plane node management list IE, the NW-TT shall:

a) if the operation code is "get capabilities", include the list of User plane node management parameters supported by the NW-TT in the User plane node management capability IE of the MANAGE USER PLANE NODE COMPLETE message;

b) if the operation code is "read parameter", attempt to read the value of the user plane node management parameter at the NW-TT, and:

1) if the value of the parameter at the NW-TT is read successfully, include the parameter and its current value in the User plane node status IE of the MANAGE USER PLANE NODE COMPLETE message; and

2) if the value of the parameter at the NW-TT was not read successfully, include the parameter and associated User plane node management service cause value in the User plane node status IE of the MANAGE USER PLANE NODE COMPLETE message;

c) if the operation code is "selective read parameter", attempt to read the value of the selected sub-parameter(s) of the user plane node management parameter at the NW-TT port, and:

1) if the value of the selected sub-parameter(s) at the NW-TT port is read successfully, include the parameter with the selected sub-parameter(s) and their current value in the User plante node status IE of the MANAGE USER PLANE NODE COMPLETE message; and

2) if the value of the selected sub-parameter(s) at the NW-TT port was not read successfully, include the parameter and associated User plane node management service cause value in the User plane node status IE of the MANAGE USER PLANE NODE COMPLETE message;

d) if the operation code is "set parameter", attempt to set the value of the user plane node management parameter at the NW-TT to the value specified in the operation, and:

1) if the value of the parameter at the NW-TT is set successfully, include the parameter and its current value in the User plane node update result IE of the MANAGE USER PLANE NODE COMPLETE message; and

2) if the value of the parameter at the NW-TT was not set successfully, include the parameter and associated User plane node management service cause value in the User plane node update result IE of the MANAGE USER PLANE NODE COMPLETE message;

NOTE: The value and status at the NW-TT of any sub-parameter not included in the parameter value field associated with operation code "set parameter" in the user plane node management list IE of the MANAGE USER PLANE NODE COMMAND remains unchanged.

e) if the operation code is "subscribe-notify for parameter", store the request from the TSN AF to be notified of changes in the value of the corresponding user plane node management parameter;

f) if the operation code is "selective subscribe-notify for parameter", store the request from the TSN AF to be notified of changes in the value of the corresponding selected sub-parameter(s) of the user plane node management parameter;

g) if the operation code is "unsubscribe for parameter", delete the stored request from the TSN AF to be notified of changes in the value of the corresponding user plane node management parameter, if any;

h) if the operation code is "selective unsubscribe for parameter", delete the stored request from the TSN AF to be notified of changes in the value of the corresponding selected sub-parameter(s) of the user plane node parameter, if any; and

f) send the MANAGE USER PLANE NODE COMPLETE to the TSN AF via the SMF and the PCF as specified in 3GPP TS 23.502 [3].

\*\*\* Next change \*\*\*

## 9.2 Port management list

The purpose of the port management list information element is to transfer from the TSN AF to the DS-TT or NW-TT a list of operations related to port management of the DS-TT or NW-TT to be performed at the DS-TT or NW-TT.

The port management list information element is coded as shown in figure 9.2.1, figure 9.2.2, figure 9.2.3, figure 9.2.4, figure 9.2.5, and table 9.2.1.

The port management list information element has a minimum length of 4 octets and a maximum length of 65535 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Port management list IEI | | | | | | | | octet 1 |
| Length of port management list contents | | | | | | | | octet 2  octet 3 |
| Port management list contents | | | | | | | | octet 4  octet z |

Figure 9.2.1: Port management list information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation 1 | | | | | | | | octet 4  octet a |
| Operation 2 | | | | | | | | octet a+1\*  octet b\* |
| … | | | | | | | | octet b+1\*  …  octet c\* |
| Operation N | | | | | | | | octet c+1\*  octet z\* |

Figure 9.2.2: Port management list contents

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation code | | | | | | | | octet d |

Figure 9.2.3: Operation for operation code set to "00000001"

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation code | | | | | | | | octet d |
| Port parameter name | | | | | | | | octet d+1  octet d+2 |

Figure 9.2.4: Operation for operation code set to "00000010", "00000100", or "00000101"

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation code | | | | | | | | octet d |
| Port parameter name | | | | | | | | octet d+1  octet d+2 |
| Length of port parameter value | | | | | | | | octet d+3 octet d+4 |
| Port parameter value | | | | | | | | octet d+5  octet e |

Figure 9.2.5: Operation for operation code set to "00000011", "00000110", "00000111" and "00001000"

Table 9.2.1: Port management list information element

|  |
| --- |
| Value part of the port management list information element (octets 4 to z) |
|  |
| The value part of the port management list information element consists of one or several operations. |
|  |
| Operation |
|  |
| Operation code (octet d) |
| Bits  **8 7 6 5 4 3 2 1**  0 0 0 0 0 0 0 0 Reserved  0 0 0 0 0 0 0 1 Get capabilities  0 0 0 0 0 0 1 0 Read parameter  0 0 0 0 0 0 1 1 Set parameter (NOTE 1)  0 0 0 0 0 1 0 0 Subscribe-notify for parameter |
| 0 0 0 0 0 1 0 1 Unsubscribe for parameter  0 0 0 0 0 1 1 0 Selective read parameter  0 0 0 0 0 1 1 1 Selective subscribe-notify for parameter  0 0 0 0 1 0 0 0 Selective unsubscribe for parameter |
| All other values are spare. |
|  |
| Port parameter name (octets d+1 to d+2) |
|  |
| This field contains the name of the port parameter to which the operation applies, encoded as follows:  - 0000H Reserved;  - 0001H txPropagationDelay;  - 0002H Traffic class table;  - 0003H GateEnabled;  - 0004H AdminBaseTime;  - 0005H AdminControlListLength;  - 0006H AdminControlList;  - 0007H AdminCycleTime;  - 0008H Tick granularity;  - 0009H  to Spare  - 003FH  - 0040H lldpV2PortConfigAdminStatusV2;  - 0041H lldpV2LocChassisIdSubtype;  - 0042H lldpV2LocChassisId;  - 0043H lldpV2MessageTxInterval;  - 0044H lldpV2MessageTxHoldMultiplier;  - 0045H  to Spare  - 005FH  - 0060H lldpV2LocPortIdSubtype;  - 0061H lldpV2LocPortId;  - 0062H  to Spare  - 009FH  - 00A0H lldpV2RemChassisIdSubtype;  - 00A1H lldpV2RemChassisId;  - 00A2H lldpV2RemPortIdSubtype;  - 00A3H lldpV2RemPortId;  - 00A4H lldpTTL;  - 00A5H  to Spare  - 00CFH  - 00D0H PSFPMaxStreamFilterInstances;  - 00D1H PSFPMaxStreamGateInstances;  - 00D2H PSFPMaxFlowMeterInstances;  - 00D3H PSFPSupportedListMax;  - 00D4H  to Spare  - 00DFH  - 00E0H Stream filter instance table  - 00E1H Stream gate instance table  - 00E2H Supported PTP instance types  - 00E3H Supported transport types  - 00E4H Supported delay mechanisms  - 00E5H PTP grandmaster capable  - 00E6H gPTP grandmaster capable  - 00E7H Supported PTP profiles  - 00E8H Number of supported PTP instances  - 00E9H PTP instance list  - 00EAH  to Spare  - 7FFFH  - 8000H  to Reserved for deployment specific parameters  - FFFFH |
| Length of port parameter value (octets d+3 to d+4) |
|  |
| This field contains the binary encoding of the length of the port parameter value |
|  |
| Port parameter value (octet d+5 to e) |
|  |
| This field contains the value to be set for the port parameter.  When the port parameter name indicates txPropagationDelay, the port parameter value field contains the binary representation of the txPropagationDelay as defined in IEEE Std 802.1Qcc [9], expressed in unit of nanoseconds and multiplied by 216, with the LSB bit included in bit 1 of the first octet. If the txPropagationDelay is too big to be represented, all bits of the port parameter value field shall be coded as "1" except the MSB bit. The length of port parameter value indicates a value of 8.  When the port parameter name indicates Traffic class table, the port parameter value field contains the traffic class table as defined in IEEE Std 802.1Q [7], encoded as the value part of the Traffic class information element as specified in clause 9.7.  When the port parameter name indicates GateEnabled, the port parameter value field contains the value of GateEnabled as defined in IEEE Std 802.1Q [7], with a Boolean value of FALSE encoded as "00000000" and a Boolean value of TRUE encoded as "00000001". The length of port parameter value field indicates a value of 1.  When the port parameter name indicates AdminBaseTime, the port parameter value field contains the value of the administrative base time as specified in IEEE Std 802.1Q [7]. The length of port parameter value field indicates a value of 10.  When the port parameter name indicates AdminControlListLength, the port parameter value field contains the value of the AdminControlListLength as specified in IEEE Std 802.1Q [7]. The length of port parameter value field indicates a value of 2.  When the port parameter name indicates AdminControlList, the port parameter value field contains the concatenation of AdminControlListLength entries, each encoded as a GateControlEntry as specified in IEEE Std 802.1Q [7].  When the port parameter name indicates AdminCycleTime, the port parameter value field contains the value of the AdminCycleTime as specified in IEEE Std 802.1Q [7]. The length of port parameter value field indicates a value of 8.  When the port parameter name indicates Tick granularity, the port parameter value field contains the value of the Tick granularity as specified in IEEE Std 802.1Q [7]. The length of port parameter value field indicates a value of 4.  When the port parameter name indicates lldpV2PortConfigAdminStatusV2, the port parameter value field contains values of lldpV2PortConfigAdminStatusV2 as specified in IEEE Std 802.1AB [6] clause 9.2.5.1 with value of txOnly encoded as 01H, rxOnly encoded as 02H, txAndRx encoded as 03H, and disabled encoded as 04H. The length of port parameter value field indicates a value of 1.  When the port parameter name indicates lldpV2LocChassisIdSubtype, the port parameter value field contains values of lldpV2LocChassisIdSubtype as specified in IEEE Std 802.1AB [6] clause 8.5.2.2. The length of port parameter value field indicates a value of 1.  When the port parameter name indicates lldpV2LocChassisId, the port parameter value field contains values of lldpV2LocChassisId in the form of an octet string as specified in IEEE Std 802.1AB [6] clause 8.5.2.3. The length of port parameter value field indicates the length of the octet string with a maximum value of 255.  When the port parameter name indicates lldpV2MessageTxInterval, the port parameter value field contains the value of lldpV2MessageTxInterval as specified in IEEE Std 802.1AB [6] table 11-2. The length of port parameter value field indicates a value of 2.  When the port parameter name indicates lldpV2MessageTxHoldMultiplier, the port parameter value field contains the value of lldpV2MessageTxHoldMultiplier as specified in IEEE Std 802.1AB [6] table 11-2. The length of port parameter value field indicates a value of 1.  When the port parameter name indicates lldpV2LocPortIdSubtype, the port parameter value field contains values of lldpV2LocPortIdSubtype as specified in IEEE Std 802.1AB [6] clause 8.5.3.2. The length of port parameter value field indicates a value of 1.  When the port parameter name indicates lldpV2LocPortId, the port parameter value field contains values of lldpV2LocPortId in the form of an octet string as specified in IEEE Std 802.1AB [6] clause 8.5.3.3. The length of port parameter value field indicates the length of the octet string with a maximum value of 255.  When the port parameter name indicates lldpV2RemChassisIdSubtype, the port parameter value field contains values of lldpV2RemChassisIdSubtype as specified in IEEE Std 802.1AB [6] clause 8.5.2.2. The length of port parameter value field indicates a value of 1.  When the port parameter name indicates lldpV2RemChassisId, the port parameter value field contains values of lldpV2RemChassisId in the form of an octet string as specified in IEEE Std 802.1AB [6] clause 8.5.2.3. The length of port parameter value field indicates the length of the octet string with a maximum value of 255.  When the port parameter name indicates lldpV2RemPortIdSubtype, the port parameter value field contains values of lldpV2RemPortIdSubtype as specified in IEEE Std 802.1AB [6] clause 8.5.3.2. The length of port parameter value field indicates a value of 1.  When the port parameter name indicates lldpV2RemPortId, the port parameter value field contains values of lldpV2RemPortId in the form of an octet string as specified in IEEE Std 802.1AB [6] clause 8.5.3.3. The length of port parameter value field indicates the length of the octet string with a maximum value of 255.  When the port parameter name indicates lldpTTL, the port parameter value field contains the value of TTL as specified in IEEE Std 802.1AB [6] clause 8.5.4. The length of port parameter value field indicates a value of 2.  When the port parameter name indicates PSFPMaxStreamFilterInstances, the parameter value field contains the value of MaxStreamFilterInstances as specified in IEEE Std 802.1Q [7] clause 12.31.1.1. The length of port parameter value field indicates a value of 4.  When the port parameter name indicates PSFPMaxStreamGateInstances, the parameter value field contains the value of MaxStreamGateInstances as specified in IEEE Std 802.1Q [7] clause 12.31.1.2. The length of port parameter value field indicates a value of 4.  When the port parameter name indicates PSFPMaxFlowMeterInstances, the parameter value field contains the value of MaxFlowMeterInstances as specified in IEEE Std 802.1Q [7] clause 12.31.1.3. The length of port parameter value field indicates a value of 4.  When the port parameter name indicates PSFPSupportedListMax, the parameter value field contains the value of SupportedListMax as specified in IEEE Std 802.1Q [7] clause 12.31.1.4. The length of port parameter value field indicates a value of 4.  When the port parameter name indicates Stream filter instance table, the port parameter value field contains a Stream filter instance table as defined in 3GPP TS 23.501 [2] table 5.28.3.1-1, encoded as the value part of the Stream filter instance table information element as specified in clause 9.8.  When the port parameter name indicates Stream gate instance table, the port parameter value field contains a Stream gate instance table as defined in 3GPP TS 23.501 [2] table 5.28.3.1-1, encoded as the value part of the Stream gate instance table information element as specified in clause 9.9.  When the port parameter name indicates Supported PTP instance types, the port parameter value field contains an enumeration of supported PTP instance types as defined in IEEE Std 1588-2019 [11] clause 8.2.1.5.5 (see NOTE 2). The length of port parameter value field is set to the number of supported PTP instance types.  When the port parameter name indicates Supported transport types, the port parameter value field contains an enumeration of supported transport types as defined in IEEE Std 1588-2019 [11] Annexes C, D and E, with transport type "IPv4" encoded as "00000000", transport type "IPv6" encoded as "00000001" and transport type "Ethernet" encoded as "00000010". The length of port parameter value field is set to the number of supported transport types.  When the port parameter name indicates Supported PTP delay mechanisms, the port parameter value field contains an enumeration of supported delay mechanisms as defined in IEEE Std 1588-2019 [11] clause 8.2.15.4.4. The length of port parameter value field is set to the number of supported delay mechanisms.  When the port parameter name indicates PTP grandmaster capable, the port parameter value field indicates whether the DS-TT supports acting as a PTP grandmaster, with a Boolean value of FALSE encoded as "00000000" and a Boolean value of TRUE encoded as "00000001". The length of port parameter value field indicates a value of 1.  When the port parameter name indicates gPTP grandmaster capable, the port parameter value field indicates whether the DS-TT supports acting as a gPTP grandmaster, with a Boolean value of FALSE encoded as "00000000" and a Boolean value of TRUE encoded as "00000001". The length of port parameter value field indicates a value of 1.  When the port parameter name indicates Supported PTP profiles, the port parameter value field contains an enumeration of supported PTP profiles' profileNames as defined in IEEE Std 1588-2019 [11] clause 20.3.3, with the "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications" as defined in ST 2059-2:2015 [13] encoded as "00000000", the "IEEE 802.1AS PTP profile for transport of timing" profile as defined in IEEE Std 802.1AS [12] encoded as "00000001", the "Default delay request-response profile" as defined in IEEE Std 1588-2019 [11] clause I.3 encoded as "00000010", the "Default delay peer-to-peer delay profile" as defined in IEEE Std 1588-2019 [11] clause I.4 encoded as "00000011" and the "High Accuracy Delay Request-Response Default PTP profile" as defined in IEEE Std 1588-2019 [11] clause I.5 encoded as "00000100". The length of port parameter value field is set to the number of supported PTP profiles.  When the port parameter name indicates Number of supported PTP instances, the port parameter value field contains the binary encoding of the number of supported PTP instances. The length of port parameter value field indicates a value of 2.  When the port parameter name indicates PTP instance list, the port parameter value field contains a PTP instance list as defined in 3GPP TS 23.501 [2] table 5.28.3.1-1, encoded as the value part of the PTP instance list information element as specified in clause 9.15.  When the hexadecimal encoding of the port parameter name is in the "8000H" to "FFFFH" range, the encoding of the port parameter value field and the value of the length of port parameter value field are deployment-specific. |
|  |
| NOTE 1: The "Set parameter" operation shall not be applicable for the following port parameter names: - 0001H txPropagationDelay; - 0008H Tick granularity; - 00A0H lldpV2RemChassisIdSubtype; - 00A1H lldpV2RemChassisId; - 00A2H lldpV2RemPortIdSubtype; - 00A3H lldpV2RemPortId; - 00A4H lldpTTL; - 00D0H PSFPMaxStreamFilterInstances; - 00D1H PSFPMaxStreamGateInstances; - 00D2H PSFPMaxFlowMeterInstances; and - 00D3H PSFPSupportedListMax.  NOTE 2: The DS-TT signals support for PTP instance type "PTP relay instance" by indicating support for PTP profile "IEEE 802.1AS PTP profile for transport of timing" in the Supported PTP profiles port parameter. |

\*\*\* Next change \*\*\*

## 9.5B User plane node management list

The purpose of the User plane node management list information element is to transfer from the TSN AF to the NW-TT a list of operations related to User plane node management of the NW-TT to be performed at the NW-TT.

The User plane node management list information element is coded as shown in figure 9.5B.1, figure 9.5B.2, figure 9.5B.3, figure 9.5B.4, figure 9.5B.5, and table 9.5B.1.

The User plane node management list information element has a minimum length of 4 octets and a maximum length of 65530 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| User plane node management list IEI | | | | | | | | octet 1 |
| Length of User plane node management list contents | | | | | | | | octet 2  octet 3 |
| User plane node management list contents | | | | | | | | octet 4  octet z |

Figure 9.5B.1: User plane node management list information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation 1 | | | | | | | | octet 4  octet a |
| Operation 2 | | | | | | | | octet a+1\*  octet b\* |
| … | | | | | | | | octet b+1\*  …  octet c\* |
| Operation N | | | | | | | | octet c+1\*  octet z\* |

Figure 9.5B.2: User plane node management list contents

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation code | | | | | | | | octet d |

Figure 9.5B.3: Operation for operation code set to "00000001"

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation code | | | | | | | | octet d |
| User plane node parameter name | | | | | | | | octet d+1  octet d+2 |

Figure 9.5B.4: Operation for operation code set to "00000010", "00000100", or "00000101"

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Operation code | | | | | | | | octet d |
| User plane node parameter name | | | | | | | | octet d+1  octet d+2 |
| Length of User plane node parameter value | | | | | | | | octet d+3 octet d+4 |
| User plane node parameter value | | | | | | | | octet d+5  octet e |

Figure 9.5B.5: Operation for operation code set to "00000011", "00000110", "00000111" and "00001000"

Table 9.5B.1: User plane node management list information element

|  |
| --- |
| Value part of the User plane node management list information element (octets 4 to z) |
|  |
| The value part of the User plane node management list information element consists of one or several operations. |
|  |
| Operation |
|  |
| Operation code (octet d) |
| Bits  **8 7 6 5 4 3 2 1**  0 0 0 0 0 0 0 0 Reserved  0 0 0 0 0 0 0 1 Get capabilities  0 0 0 0 0 0 1 0 Read parameter  0 0 0 0 0 0 1 1 Set parameter (NOTE 1)  0 0 0 0 0 1 0 0 Subscribe-notify for parameter |
| 0 0 0 0 0 1 0 1 Unsubscribe for parameter  0 0 0 0 0 1 1 0 Selective read parameter  0 0 0 0 0 1 1 1 Selective subscribe-notify for parameter  0 0 0 0 1 0 0 0 Selective unsubscribe for parameter |
| All other values are spare. |
|  |
| User plane node parameter name (octets d+1 to d+2) |
|  |
| This field contains the name of the User plane node parameter to which the operation applies, encoded as follows:  - 0000H Reserved;  - 0001H User plane node Address;  - 0002H Spare (NOTE 2)  - 0003H User plane node ID;  - 0004H NW-TT port numbers;  - 0005H  to Spare  - 0009H  - 0010H Spare (NOTE 3)  - 0010H Spare (NOTE 4)  - 0012H Static filtering entries;  - 0013H  to Spare  - 0019H  - 0020H lldpV2PortConfigAdminStatusV2;  - 0021H lldpV2LocChassisIdSubtype;  - 0022H lldpV2LocChassisId;  - 0023H lldpV2MessageTxInterval;  - 0024H lldpV2MessageTxHoldMultiplier;  - 0025H  to Spare  - 004FH  - 0050H DS-TT port neighbor discovery configuration for DS-TT ports  - 0051H Discovered neighbor information for DS-TT ports  - 0052H  to Spare  - 006FH  - 0070H PSFPMaxStreamFilterInstances;  - 0071H PSFPMaxStreamGateInstances;  - 0072H PSFPMaxFlowMeterInstances;  - 0073H PSFPSupportedListMax;  - 0074H Supported PTP instance types  - 0075H Supported transport types  - 0076H Supported delay mechanisms  - 0077H PTP grandmaster capable  - 0078H gPTP grandmaster capable  - 0079H Supported PTP profiles  - 007AH Number of supported PTP instances  - 007BH DS-TT port time synchronization information list  - 007CH  to Spare  - 7FFFH  - 8000H  to Reserved for deployment specific parameters  - FFFFH |
| Length of User plane node parameter value (octets d+3 to d+4) |
|  |
| This field contains the binary encoding of the length of the User plane node parameter value |
|  |
| User plane node parameter value (octet d+5 to e) |
|  |
| This field contains the value to be set for the User plane node parameter.  When the User plane node parameter name indicates User plane node Address, the User plane node parameter value field contains the values of User plane node Address as defined in IEEE Std 802.1Q [7] clause 8.13.8. The length of User plane node parameter value field indicates a value of 6.  When the User plane node parameter name indicates User plane node ID, the User plane node parameter value field contains the values of User plane node Identifier as defined in IEEE Std 802.1Q [7] clause 14.2.5. The length of User plane node parameter value field indicates a value of 8.  When the User plane node parameter name indicates NW-TT port numbers, the User plane node parameter value field contains NW-TT port numbers as defined in 3GPP TS 23.501 [2] table 5.28.3.1-2, encoded as the value part of the NW-TT port numbers information element as specified in clause 9.14.  When the User plane node parameter name indicates Static filtering entries, the User plane node parameter value field contains Static filtering entries as defined in 3GPP TS 23.501 [2] table 5.28.3.1-2, encoded as the value part of the Static filtering entries information element as specified in clause 9.6.  When the User plane node parameter name indicates lldpV2PortConfigAdminStatusV2, the User plane node parameter value field contains values of lldpV2PortConfigAdminStatusV2 as specified in IEEE Std 802.1AB [6] clause 9.2.5.1 with value of txOnly encoded as 01H, rxOnly encoded as 02H, txAndRx encoded as 03H, and disabled encoded as 04H. The length of User plane node parameter value field indicates a value of 1.  When the User plane node parameter name indicates lldpV2LocChassisIdSubtype, the User plane node parameter value field contains values of lldpV2LocChassisIdSubtype as specified in IEEE Std 802.1AB [6] clause 8.5.2.2. The length of User plane node parameter value field indicates a value of 1.  When the User plane node parameter name indicates lldpV2LocChassisId, the User plane node parameter value field contains values of lldpV2LocChassisId in the form of an octet string as specified in IEEE Std 802.1AB [6] clause 8.5.2.3. The length of User plane node parameter value field indicates the length of the octet string with a maximum value of 255.  When the User plane node parameter name indicates lldpV2MessageTxInterval, the User plane node parameter value field contains the value of lldpV2MessageTxInterval as specified in IEEE Std 802.1AB [6] table 11-2. The length of User plane node parameter value field indicates a value of 2.  When the User plane node parameter name indicates lldpV2MessageTxHoldMultiplier, the User plane node parameter value field contains the value of lldpV2MessageTxHoldMultiplier as specified in IEEE Std 802.1AB [6] table 11-2. The length of User plane node parameter value field indicates a value of 1.  When the User plane node parameter name indicates DS-TT port neighbor discovery configuration for DS-TT ports, the User plane node parameter value field contains DS-TT port neighbor discovery configuration for DS-TT ports as defined in 3GPP TS 23.501 [2] table 5.28.3.1-2, encoded as the value part of the DS-TT port neighbor discovery configuration for DS-TT ports information element as specified in clause 9.10.  When the User plane node parameter name indicates Discovered neighbor information for DS-TT ports, the User plane node parameter value field contains Discovered neighbor information for DS-TT ports as defined in 3GPP TS 23.501 [2] table 5.28.3.1-2, encoded as the value part of the Discovered neighbor information for DS-TT ports information element as specified in clause 9.11.  When the User plane node parameter name indicates MaxStreamFilterInstances, the User plane node parameter value field contains the value of PSFPMaxStreamFilterInstances as specified in IEEE Std 802.1Q [7] clause 12.31.1.1. The length of User plane node parameter value field indicates a value of 4.  When the User plane node parameter name indicates PSFPMaxStreamGateInstances, the User plane node parameter value field contains the value of MaxStreamGateInstances as specified in IEEE Std 802.1Q [7] clause 12.31.1.1. The length of User plane node parameter value field indicates a value of 4.  When the User plane node parameter name indicates PSFPMaxFlowMeterInstances, the User plane node parameter value field contains the value of MaxFlowMeterInstances as specified in IEEE Std 802.1Q [7] Table 12-31. The length of User plane node parameter value field indicates a value of 4.  When the User plane node parameter name indicates PSFPSupportedListMax, the User plane node parameter value field contains the value of SupportedListMax as specified in IEEE Std 802.1Q [7] clause 12. 31.1.4. The length of User plane node parameter value field indicates a value of 4.  When the User plane node parameter name indicates Supported PTP instance types, the User plane node parameter value field contains an enumeration of supported PTP instance types as defined in IEEE Std 1588-2019 [11] clause 8.2.1.5.5 (see NOTE 5). The length of User plane node parameter value field is set to the number of supported PTP instance types.  When the User plane node parameter name indicates Supported transport types, the User plane node parameter value field contains an enumeration of supported transport types as defined in IEEE Std 1588-2019 [11] Annexes C, D and E, with transport type "IPv4" encoded as "00000000", transport type "IPv6" encoded as "00000001" and transport type "Ethernet" encoded as "00000010". The length of User plane node parameter value field is set to the number of supported transport types.  When the User plane node parameter name indicates Supported PTP delay mechanisms, the User plane node parameter value field contains an enumeration of supported delay mechanisms as defined in IEEE Std 1588-2019 [11] clause 8.2.15.4.4. The length of User plane node parameter value field is set to the number of supported delay mechanisms.  When the User plane node parameter name indicates PTP grandmaster capable, the User plane node parameter value field indicates whether the NW-TT supports acting as a PTP grandmaster, with a Boolean value of FALSE encoded as "00000000" and a Boolean value of TRUE encoded as "00000001". The length of User plane node parameter value field indicates a value of 1.  When the User plane node parameter name indicates gPTP grandmaster capable, the User plane node parameter value field indicates whether the NW-TT supports acting as a gPTP grandmaster, with a Boolean value of FALSE encoded as "00000000" and a Boolean value of TRUE encoded as "00000001". The length of User plane node parameter value field indicates a value of 1.  When the User plane node parameter name indicates Supported PTP profiles, the User plane node parameter value field contains an enumeration of supported PTP profiles' profileNames as defined in IEEE Std 1588-2019 [11] clause 20.3.3, with the "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications" as defined in ST 2059-2:2015 [13] encoded as "00000000", the "IEEE 802.1AS PTP profile for transport of timing" profile as defined in IEEE Std 802.1AS [12] encoded as "00000001", the "Default delay request-response profile" as defined in IEEE Std 1588-2019 [11] clause I.3 encoded as "00000010", the "Default delay peer-to-peer delay profile" as defined in IEEE Std 1588-2019 [11] clause I.4 encoded as "00000011" and the "High Accuracy Delay Request-Response Default PTP profile" as defined in IEEE Std 1588-2019 [11] clause I.5 encoded as "00000100". The length of User plane node parameter value field is set to the number of supported PTP profiles.  When the User plane node parameter name indicates Number of supported PTP instances, the User plane node parameter value field contains the binary encoding of the number of supported PTP instances. The length of User plane node parameter value field indicates a value of 2.  When the User plane node parameter name indicates DS-TT port time synchronization information list, the User plane node parameter value field contains a DS-TT port time synchronization information list as defined in 3GPP TS 23.501 [2] table 5.28.3.1-2, encoded as the value part of the DS-TT port time synchronization information list information element as specified in clause 9.16.  When the hexadecimal encoding of the User plane node parameter name is in the "8000H" to "FFFFH" range, the encoding of the User plane node parameter value field and the value of the length of User plane node parameter value field are deployment-specific. |
|  |
| NOTE 1: The "Set parameter" operation shall not be applicable for the following bridge parameter names: - 0001H User plane node Address; - 0003H User plane node ID; - 0004H NW-TT port numbers; - 0051H Discovered neighbor information for DS-TT ports; - 0070H PSFPMaxStreamFilterInstances; - 0071H PSFPMaxStreamGateInstances; - 0072H PSFPMaxFlowMeterInstances; and - 0073H PSFPSupportedListMax.  NOTE 2: Implementations compliant with earlier versions of this release of the specification can interpret these values as signalling the User plane node Name.  NOTE 3: Implementations compliant with earlier versions of this release of the specification can interpret these values as signalling the Chassis ID subtype.  NOTE 4: Implementations compliant with earlier versions of this release of the specification can interpret these values as signalling the Chassis ID.  NOTE 5: The NW-TT signals support for PTP instance type "PTP relay instance" by indicating support for PTP profile "IEEE 802.1AS PTP profile for transport of timing" in the Supported PTP profiles User plane node parameter. |

\*\*\* Next change \*\*\*

## 9.15 PTP instance list

The purpose of the PTP instance list information element is to convey a list of PTP instances as defined 3GPP TS 23.501 [2] table 5.28.3.1-1 and table 5.28.3.1-2.

The PTP instance list information element is coded as shown in figure 9.15.1, figure 9.15.2, figure 9.15.3, figure 9.15.4, and table 9.15.1.

The PTP instance list is a type 6 information element with a minimum length of 3 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| PTP instance list IEI | | | | | | | | octet 1 |
| Length of PTP instance list contents | | | | | | | | octet 2  octet 3 |
| PTP instance 1 | | | | | | | | octet 4\*  octet m\* |
| … | | | | | | | |  |
| PTP instance n | | | | | | | | octet n\*  octet o\* |

Figure 9.15.1: PTP instance list information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of PTP instance contents | | | | | | | | octet 4  octet 5 |
| PTP instance ID | | | | | | | | octet 6  octet 7 |
| PTP instance parameters list | | | | | | | | octet 8\*  octet m |

Figure 9.15.2: PTP instance

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| PTP instance parameter 1 | | | | | | | | octet 8  octet p |
| PTP instance parameter 2 | | | | | | | | octet p+1  octet q |
| … | | | | | | | |  |
| PTP instance parameter n | | | | | | | | octet r  octet s |

Figure 9.15.3: PTP instance parameters list

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| PTP instance parameter name | | | | | | | | octet 8  octet 9 |
| Length of PTP instance parameter | | | | | | | | octet 10 |
| PTP instance parameter value (NOTE 1, NOTE 2) | | | | | | | | octet 11  octet t |

Figure 9.15.4: PTP instance parameter

Table 9.15.1: PTP instance list

|  |
| --- |
| Value part of the PTP instance list information element (octets 4 to o) |
|  |
| PTP instance list contents (octets 4 to o)  This field consists of zero or more PTP instances. |
|  |
| PTP instance (octets 4 to m) |
|  |
| Length of PTP instance contents (octets 4 to 5)  Length of PTP instance contents contains the length of the value part of PTP instance in octets. |
|  |
| PTP instance ID value (octets 6 to 7)  PTP instance ID value contains the binary encoding of the value of the identifier for the PTP instance. |
|  |
| PTP instance parameter name (octets 8 to 9)  This field contains the name of the PTP instance parameter, encoded as follows:  - 0000H Reserved;  - 0001H PTP profile  - 0002H Transport type  - 0003H Grandmaster enabled  - 0004H Grandmaster on behalf of DS-TT enabled  - 0005H Grandmaster candidate enabled  - 0006H defaultDS.clockIdentity  - 0007H defaultDS.clockQuality.clockClass  - 0008H defaultDS.clockQuality.clockAccuracy  - 0009H defaultDS.clockQuality.offsetScaledLogVariance  - 000AH defaultDS.priority1  - 000BH defaultDS.priority2  - 000CH defaultDS.domainNumber  - 000DH defaultDS.sdoId  - 000EH defaultDS.instanceEnable  - 000FH defaultDS.externalPortConfigurationEnabled  - 0010H defaultDS.instanceType  - 0011H portDS.portIdentity  - 0012H portDS.portState  - 0013H portDS.logMinDelayReqInterval  - 0014H portDS.logAnnounceInterval  - 0015H portDS.announceReceiptTimeout  - 0016H portDS.logSyncInterval  - 0017H portDS.delayMechanism  - 0018H portDS.logMinPdelayReqInterval  - 0019H portDS.versionNumber  - 001AH portDS.minorVersionNumber  - 001BH portDS.delayAssymetry  - 001CH portDS.portEnable  - 001DH timePropertiesDS.currentUtcOffset  - 001EH timePropertiesDS.timeSource  - 001FH externalPortConfigurationPortDS.desiredState  - 0020H defaultDS.timeSource  - 0021H portDS.ptpPortEnabled  - 0022H portDS.isMeasuringDelay  - 0023H portDS.asCapable  - 0024H portDS.meanLinkDelay  - 0025H portDS.meanLinkDelayThresh  - 0026H portDS.neighborRateRatio  - 0027H portDS.initialLogAnnounceInterval  - 0028H portDS.currentLogAnnounceInterval  - 0029H portDS.useMgtSettableLogAnnounceInterval  - 002AH portDS.mgtSettableLogAnnounceInterval  - 002BH portDS.initialLogSyncInterval  - 002CH portDS.currentLogSyncInterval  - 002DH portDS.useMgtSettableLogSyncInterval  - 002EH portDS.mgtSettableLogSyncInterval  - 002FH portDS.syncReceiptTimeout  - 0030H portDS.syncReceiptTimeoutTimeInterval  - 0031H portDS.initialLogPdelayReqInterval  - 0032H portDS.currentLogPdelayReqInterval  - 0033H portDS.useMgtSettableLogPdelayReqInterval  - 0034H portDS.mgtSettableLogPdelayReqInterval  - 0035H portDS.initialLogGptpCapableMessageInterval  - 0036H portDS.currentLogGptpCapableMessageInterval  - 0037H portDS.useMgtSettableLogGptpCapableMessageInterval  - 0038H portDS.mgtSettableLogGptpCapableMessageInterval  - 0039H portDS.initialComputeNeighborRateRatio  - 003AH portDS.currentComputeNeighborRateRatio  - 003BH portDS.useMgtSettableComputeNeighborRateRatio  - 003CH portDS.mgtSettableComputeNeighborRateRatio  - 003DH portDS.initialComputeMeanLinkDelay  - 003EH portDS.currentComputeMeanLinkDelay  - 003FH portDS.useMgtSettableComputeMeanLinkDelay  - 0040H portDS.mgtSettableComputeMeanLinkDelay  - 0041H portDS.allowedLostResponses  - 0042H portDS.allowedFaults  - 0043H portDS.gPtpCapableReceiptTimeout  - 0044H portDS.nup  - 0045H portDS.ndown  - 0046H portDS.oneStepTxOper  - 0047H portDS.oneStepReceive  - 0048H portDS.oneStepTransmit  - 0049H portDS.initialOneStepTxOper  - 004AH portDS.currentOneStepTxOper  - 004BH portDS.useMgtSettableOneStepTxOper  - 004CH portDS.mgtSettableOneStepTxOper  - 004DH portDS.syncLocked  - 004EH portDS.pdelayTruncatedTimestampsArray  - 004FH  to Spare  - FFFFH  When the PTP instance parameter name indicates PTP profile, the PTP instance parameter value field indicates the PTP profile's profileName, with the "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications" as defined in ST 2059-2:2015 [13] encoded as "00000000", the "IEEE 802.1AS PTP profile for transport of timing" profile as defined in IEEE Std 802.1AS [yy] encoded as "00000001", the "Default delay request-response profile" as defined in IEEE Std 1588-2019 [11] clause I.3 encoded as "00000010", the "Default delay peer-to-peer delay profile" as defined in IEEE Std 1588-2019 [11] clause I.4 encoded as "00000011" and the "High Accuracy Delay Request-Response Default PTP profile" as defined in IEEE Std 1588-2019 [11] clause I.5 encoded as "00000100". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates Transport type, the PTP instance parameter value field indicates the transport type to use as defined in 3GPP TS 23.501 [2] clause 5.28.3.1, with transport type "IPv4" encoded as "00000000", transport type "IPv6" encoded as "00000001" and transport type "Ethernet" encoded as "00000010". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates Grandmaster enabled as defined in 3GPP TS 23.501 [2] clause 5.28.3.1, the PTP instance parameter value field indicates whether to act as a PTP grandmaster, with "Do not act as grandmaster" encoded as "00000000" and "Act as grandmaster" encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates Grandmaster on behalf of DS-TT enabled as defined in 3GPP TS 23.501 [2] clause 5.28.3.1, the PTP instance parameter value field indicates whether to act as grandmaster on behalf of a DS-TT port or not if 5GS is determined to be the grandmaster clock, with "Do not act as grandmaster" encoded as "00000000" and "Act as grandmaster" encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates Grandmaster candidate enabled as defined in 3GPP TS 23.501 [2] clause 5.28.3.1, the PTP instance parameter value field indicates whether a PTP instance of a NW-TT is a grandmaster candidate, with a Boolean value of FALSE encoded as "00000000" and a Boolean value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates defaultDS.clockIdentity, the PTP instance parameter value field contains the defaultDS.clockIdentity as specified in IEEE Std 1588-2019 [11] clause 8.2.1.2.2 and in IEEE Std 802.1AS [yy] clause 14.2.2. The length of PTP instance parameter value field indicates a value of 8.  When the PTP instance parameter name indicates defaultDS.clockQuality.clockClass, the PTP instance parameter value field contains the defaultDS.clockQuality.clockClass as specified in IEEE Std 1588-2019 [11] clause 8.2.1.3.1.2 and in IEEE Std 802.1AS [12] clause 14.2.4.2. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates defaultDS.clockQuality.clockAccuracy, the PTP instance parameter value field contains the defaultDS.clockQuality.clockAccuracy as specified in IEEE Std 1588-2019 [11] clause 8.2.1.3.1.3 and in IEEE Std 802.1AS [12] clause 14.2.4.3. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates defaultDS.clockQuality.offsetScaledLogVariance, the PTP instance parameter value field contains the defaultDS.clockQuality.offsetScaledLogVariance as specified in IEEE Std 1588-2019 [11] clause 8.2.1.3.1.4 and in IEEE Std 802.1AS [12] clause 14.2.4.4. The length of PTP instance parameter value field indicates a value of 4.  When the PTP instance parameter name indicates defaultDS.priority1, the PTP instance parameter value field contains the defaultDS.priority1 as specified in IEEE Std 1588-2019 [11] clause 8.2.1.4.1 and in IEEE Std 802.1AS [12] clause 14.2.5. The length of PTP instance parameter value field indicates a value of 4.  When the PTP instance parameter name indicates defaultDS.priority2, the PTP instance parameter value field contains the defaultDS.priority2 as specified in IEEE Std 1588-2019 [11] clause 8.2.1.4.2 and in IEEE Std 802.1AS [12] clause 14.2.6. The length of PTP instance parameter value field indicates a value of 4.  When the PTP instance parameter name indicates defaultDS.domainNumber, the PTP instance parameter value field contains the defaultDS.domainNumber as specified in IEEE Std 1588-2019 [11] clause 8.2.1.4.3 and in IEEE Std 802.1AS [12] clause 14.2.16. The length of PTP instance parameter value field indicates a value of 4.  When the PTP instance parameter name indicates defaultDS.sdoId, the PTP instance parameter value field contains the defaultDS.sdoId as specified in IEEE Std 1588-2019 [11] clause 8.2.1.4.5 and in IEEE Std 802.1AS [12] clause 14.2.4.3. The length of PTP instance parameter value field indicates a value of 4.  When the PTP instance parameter name indicates defaultDS.instanceEnable, the PTP instance parameter value field contains the defaultDS.instanceEnable as specified in IEEE Std 1588-2019 [11] clause 8.2.1.5.2 and in IEEE Std 802.1AS [12] clause 14.2.19, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates defaultDS.externalPortConfigurationEnabled, the PTP instance parameter value field contains the defaultDS.externalPortConfigurationEnabled as specified in IEEE Std 1588-2019 [11] clause 8.2.1.5.3 and in IEEE Std 802.1AS [12] clause 14.2.18, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates defaultDS.instanceType, the PTP instance parameter value field contains the defaultDS.instanceType as specified in IEEE Std 1588-2019 [11] clause 8.2.1.5.5. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.portIdentity, the PTP instance parameter value field contains the portDS.portIdentity as specified in IEEE Std 1588-2019 [11] clause 8.2.15.2.1 and in IEEE Std 802.1AS [12] clause 14.8.2. The length of PTP instance parameter value field indicates a value of 10.  When the PTP instance parameter name indicates portDS.portState, the PTP instance parameter value field contains the portDS.portState as specified in IEEE Std 1588-2019 [11] clause 8.2.15.3.1 and in IEEE Std 802.1AS [12] clause 14.8.3. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates portDS.logMinDelayReqInterval, the PTP instance parameter value field contains the portDS.logMinDelayReqInterval as specified in IEEE Std 1588-2019 [11] clause 8.2.15.3.2. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.logAnnounceInterval, the PTP instance parameter value field contains the portDS.logAnnounceInterval as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.1. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.announceReceiptTimeout, the PTP instance parameter value field contains the portDS.announceReceiptTimeout as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.2 and in IEEE Std 802.1AS [12] clause 14.8.16. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates portDS.logSyncInterval, the PTP instance parameter value field contains the portDS.logSyncInterval as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.3. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.delayMechanism, the PTP instance parameter value field contains the portDS.delayMechanism as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.4 and in IEEE Std 802.1AS [12] clause 14.8.5. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates portDS.logMinPdelayReqInterval, the PTP instance parameter value field contains the portDS.logMinPdelayReqInterval as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.5. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.versionNumber, the PTP instance parameter value field contains the portDS.versionNumber as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.6 and in IEEE Std 802.1AS [12] clause 14.8.42. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates portDS.minorVersionNumber, the PTP instance parameter value field contains the portDS.minorVersionNumber as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.7 and in IEEE Std 802.1AS [12] clause 14.8.54. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates portDS.delayAssymetry, the PTP instance parameter value field contains the portDS.delayAssymetry as specified in IEEE Std 1588-2019 [11] clause 8.2.15.4.8 and in IEEE Std 802.1AS [12] clause 14.8.10. The length of PTP instance parameter value field indicates a value of 8.  When the PTP instance parameter name indicates portDS.portEnable, the PTP instance parameter value field contains the portDS.portEnable as specified in IEEE Std 1588-2019 [11] clause 8.2.15.5.1. with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates timePropertiesDS.currentUtcOffset, the PTP instance parameter value field contains the timePropertiesDS.currentUtcOffset as specified in IEEE Std 1588-2019 [11] clause 8.2.4.2 and in IEEE Std 802.1AS [12] clause 14.5.2. The length of PTP instance parameter value field indicates a value of 2.  When the PTP instance parameter name indicates timePropertiesDS.timeSource, the PTP instance parameter value field contains the timePropertiesDS.timeSource as specified in IEEE Std 1588-2019 [11] clause 8.2.4.9. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "IEEE 802.1AS PTP profile for transport of timing", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates externalPortConfigurationPortDS.desiredState, the PTP instance parameter value field contains the externalPortConfigurationPortDS.desiredState as specified in IEEE Std 1588-2019 [11] clause 15.5.3.7.15.1 and in IEEE Std 802.1AS [12] clause 14.12.2. The length of PTP instance parameter value field indicates a value of 1.  When the PTP instance parameter name indicates defaultDS.timeSource, the PTP instance parameter value field contains the defaultDS.timeSource as specified in IEEE Std 802.1AS [12] clause 14.2.14. The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.ptpPortEnabled, the PTP instance parameter value field contains the portDS.ptpPortEnabled as specified in IEEE Std 802.1AS [12] clause 14.8.4, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.isMeasuringDelay, the PTP instance parameter value field contains the portDS.isMeasuringDelay as specified in IEEE Std 802.1AS [12] clause 14.8.6, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.asCapable, the PTP instance parameter value field contains the portDS.asCapable as specified in IEEE Std 802.1AS [12] clause 14.8.7, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.meanLinkDelay, the PTP instance parameter value field contains the portDS.meanLinkDelay as specified in IEEE Std 802.1AS [12] clause 14.8.8. The length of PTP instance parameter value field indicates a value of 12. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.meanLinkDelayThresh, the PTP instance parameter value field contains the portDS.meanLinkDelayThresh as specified in IEEE Std 802.1AS [12] clause 14.8.9. The length of PTP instance parameter value field indicates a value of 12. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.neighborRateRatio, the PTP instance parameter value field contains the portDS.neighborRateRatio as specified in IEEE Std 802.1AS [12] clause 14.8.11. The length of PTP instance parameter value field indicates a value of 8. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialLogAnnounceInterval, the PTP instance parameter value field contains the portDS.initialLogAnnounceInterval as specified in IEEE Std 802.1AS [12] clause 14.8.12. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentLogAnnounceInterval, the PTP instance parameter value field contains the portDS.currentLogAnnounceInterval as specified in IEEE Std 802.1AS [12] clause 14.8.13. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableLogAnnounceInterval, the PTP instance parameter value field contains the portDS.useMgtSettableLogAnnounceInterval as specified in IEEE Std 802.1AS [12] clause 14.8.14, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableLogAnnounceInterval, the PTP instance parameter value field contains the portDS.mgtSettableLogAnnounceInterval as specified in IEEE Std 802.1AS [12] clause 14.8.15. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialLogSyncInterval, the PTP instance parameter value field contains the portDS.initialLogSyncInterval as specified in IEEE Std 802.1AS [12] clause 14.8.17. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentLogSyncInterval, the PTP instance parameter value field contains the portDS.currentLogSyncInterval as specified in IEEE Std 802.1AS [12] clause 14.8.18. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableLogSyncInterval, the PTP instance parameter value field contains the x portDS.useMgtSettableLogSyncInterval as specified in IEEE Std 802.1AS [12] clause 14.8.19, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableLogSyncInterval, the PTP instance parameter value field contains the portDS.mgtSettableLogSyncInterval as specified in IEEE Std 802.1AS [12] clause 14.8.20. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.syncReceiptTimeout, the PTP instance parameter value field contains the portDS.syncReceiptTimeout as specified in IEEE Std 802.1AS [12] clause 14.8.21. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.syncReceiptTimeoutTimeInterval, the PTP instance parameter value field contains the portDS.syncReceiptTimeoutTimeInterval as specified in IEEE Std 802.1AS [12] clause 14.8.22. The length of PTP instance parameter value field indicates a value of 12. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialLogPdelayReqInterval, the PTP instance parameter value field contains the portDS.initialLogPdelayReqInterval as specified in IEEE Std 802.1AS [12] clause 14.8.23. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentLogPdelayReqInterval, the PTP instance parameter value field contains the portDS.currentLogPdelayReqInterval as specified in IEEE Std 802.1AS [12] clause 14.8.24. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableLogPdelayReqInterval, the PTP instance parameter value field contains the portDS.useMgtSettableLogPdelayReqInterval x as specified in IEEE Std 802.1AS [12] clause 14.8.25, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableLogPdelayReqInterval, the PTP instance parameter value field contains the portDS.mgtSettableLogPdelayReqInterval as specified in IEEE Std 802.1AS [12] clause 14.8.26. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialLogGptpCapableMessageInterval, the PTP instance parameter value field contains the portDS.initialLogGptpCapableMessageInterval as specified in IEEE Std 802.1AS [12] clause 14.8.27. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentLogGptpCapableMessageInterval, the PTP instance parameter value field contains the portDS.currentLogGptpCapableMessageInterval as specified in IEEE Std 802.1AS [12] clause 14.8.28. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableLogGptpCapableMessageInterval, the PTP instance parameter value field contains the portDS.useMgtSettableLogGptpCapableMessageInterval as specified in IEEE Std 802.1AS [12] clause 14.8.29, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableLogGptpCapableMessageInterval, the PTP instance parameter value field contains the portDS.mgtSettableLogGptpCapableMessageInterval as specified in IEEE Std 802.1AS [12] clause 14.8.30. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialComputeNeighborRateRatio, the PTP instance parameter value field contains the portDS.initialComputeNeighborRateRatio as specified in IEEE Std 802.1AS [12] clause 14.8.31. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentComputeNeighborRateRatio, the PTP instance parameter value field contains the portDS.currentComputeNeighborRateRatio as specified in IEEE Std 802.1AS [12] clause 14.8.32. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableComputeNeighborRateRatio, the PTP instance parameter value field contains the portDS.useMgtSettableComputeNeighborRateRatio as specified in IEEE Std 802.1AS [12] clause 14.8.33, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableComputeNeighborRateRatio, the PTP instance parameter value field contains the portDS.mgtSettableComputeNeighborRateRatio as specified in IEEE Std 802.1AS [12] clause 14.8.34. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialComputeMeanLinkDelay, the PTP instance parameter value field contains the portDS.initialComputeMeanLinkDelay as specified in IEEE Std 802.1AS [12] clause 14.8.35. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentComputeMeanLinkDelay, the PTP instance parameter value field contains the portDS.currentComputeMeanLinkDelay x as specified in IEEE Std 802.1AS [12] clause 14.8.36. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableComputeMeanLinkDelay, the PTP instance parameter value field contains the portDS.useMgtSettableComputeMeanLinkDelay as specified in IEEE Std 802.1AS [12] clause 14.8.37. with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableComputeMeanLinkDelay, the PTP instance parameter value field contains the portDS.mgtSettableComputeMeanLinkDelay as specified in IEEE Std 802.1AS [12] clause 14.8.38. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.allowedLostResponses, the PTP instance parameter value field contains the portDS.allowedLostResponses as specified in IEEE Std 802.1AS [12] clause 14.8.39. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile type set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.allowedFaults, the PTP instance parameter value field contains the portDS.allowedFaults as specified in IEEE Std 802.1AS [12] clause 14.8.40. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.gPtpCapableReceiptTimeout, the PTP instance parameter value field contains the portDS.gPtpCapableReceiptTimeout as specified in IEEE Std 802.1AS [12] clause 14.8.41. The length of PTP instance parameter value field indicates a value of 4. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.nup, the PTP instance parameter value field contains the portDS.nup as specified in IEEE Std 802.1AS [12] clause 14.8.43. The length of PTP instance parameter value field indicates a value of 8. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.ndown, the PTP instance parameter value field contains the portDS.ndown as specified in IEEE Std 802.1AS [12] clause 14.8.44. The length of PTP instance parameter value field indicates a value of 64. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.oneStepTxOper, the PTP instance parameter value field contains the portDS.oneStepTxOper as specified in IEEE Std 802.1AS [12] clause 14.8.45, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.oneStepReceive, the PTP instance parameter value field contains the portDS.oneStepReceive as specified in IEEE Std 802.1AS [12] clause 14.8.46, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.oneStepTransmit, the PTP instance parameter value field contains the portDS.oneStepTransmit as specified in IEEE Std 802.1AS [12] clause 14.8.47, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.initialOneStepTxOper, the PTP instance parameter value field contains the portDS.initialOneStepTxOper as specified in IEEE Std 802.1AS [12] clause 14.8.48, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.currentOneStepTxOper, the PTP instance parameter value field contains the portDS.currentOneStepTxOper as specified in IEEE Std 802.1AS [12] clause 14.8.49, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.useMgtSettableOneStepTxOper, the PTP instance parameter value field contains the portDS.useMgtSettableOneStepTxOper as specified in IEEE Std 802.1AS [12] clause 14.8.50, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.mgtSettableOneStepTxOper, the PTP instance parameter value field contains the portDS.mgtSettableOneStepTxOper as specified in IEEE Std 802.1AS [12] clause 14.8.51, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.syncLocked, the PTP instance parameter value field contains the portDS.syncLocked as specified in IEEE Std 802.1AS [12] clause 14.8.52, with a value of FALSE encoded as "00000000" and a value of TRUE encoded as "00000001". The length of PTP instance parameter value field indicates a value of 1. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter.  When the PTP instance parameter name indicates portDS.pdelayTruncatedTimestampsArray, the PTP instance parameter value field contains the portDS.pdelayTruncatedTimestampsArray as specified in IEEE Std 802.1AS [12] clause 14.8.53. The length of PTP instance parameter value field indicates a value of 24. If this PTP instance parameter is received for a PTP instance with PTP profile set to "SMPTE Profile for Use of IEEE-1588 Precision Time Protocol in Professional Broadcast Applications", the receiver shall ignore the PTP instance parameter. |
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| NOTE 1: When the PTP instance list is received in a port management list and associated with operation code "selective read parameter", "selective subscribe-notify for parameter" or "selective unsubscribe for parameter", the PTP instance parameter value field of each PTP instance parameter is ignored by the receiver. If no PTP instance parameter is included in a specific PTP instance, the entire PTP instance is selected with all PTP instance parameters stored at the DS-TT or NW-TT port.  NOTE 2: When the PTP instance list is included in a DS-TT port time synchronization information list received in a user plane node management list and associated with operation code "selective read parameter", "selective subscribe-notify for parameter" or "selective unsubscribe for parameter", the PTP instance parameter value field of each PTP instance parameter is ignored by the receiver. If no PTP instance is included in a specific DS-TT port time synchronization information instance the entire DS-TT port time synchronization information instance is selected with all PTP instances stored at the NW-TT. If no PTP instance parameter is included in a specific PTP instance, the entire PTP instance is selected with all PTP instance parameters stored at the NW-TT. In case of DS-TT port number set to zero (wildcard value) the selected PTP instance(s) and selected PTP instance parameter(s) are selected in all DS-TT port time synchronization information instance(s) stored at the NW-TT. |

\*\*\* End of changes \*\*\*