**3GPP TSG-CT WG1 Meeting #133-eC1-216797**

**E-meeting, 11-19 November 2021**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.539** | **CR** | **0010** | **rev** | **-** | **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:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Intel | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IIoT | | | | |  | ***Date:*** | | | 03-NOV-2021 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | SA2 has agreed in CR 3312 to TS 23.501 (see S2-2108137) to:   1. add a new parameter structure “PTP instance specification” in UMIC and include the PTP instance parameters common for all TT ports. 2. remove the common PTP instance parameters from the PMIC parameter structure “PTP instance specification” in case of NW-TT. 3. remove the common PTP instance parameters from the UMIC parameter structure “Time synchronization information for each DS-TT ports”   Accordingly, it is proposed to update the related information elements. | | | | | | | | |
| ***;*** | |  | | | | | | | | |
| ***Summary of change:*** | | The following changes are proposed:   1. Add a new user plane node parameter “PTP instance specification” and specify the PTP instance parameters not applicable as part of PTP instance list IE. 2. Specify the PTP instance parameters not applicable in case of port parameter PTP instance list for the NW-TT and DS-TT as part of PTP instance list IE. 3. Specify the PTP instance parameters not applicable in case of the user plane node parameter “DS-TT port time synchronization information list” as part of PTP instance list IE.   In addition it is proposed to clarify that “readonly” PTP instance parameters are not applicable in case of the set parameter operation. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Stage2 Time Synchronization Information not aligned with stage3 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 9.5B, 9.15 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 23.501 CR 3312 | | |
| ***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 \*\*\*

## 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"

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 |
| 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 PTP instance specification  - 007DH  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 User plane node parameter name indicates PTP instance specification, the User plane node parameter value field contains a PTP instance specification as defined in 3GPP TS 23.501 [2] table 5.28.3.1-2, encoded as the value part of the PTP instance list information element as specified in clause 9.15.  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 | | | | | | | | 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 X: When the TSN AF sends a port management list to the NW-TT or the NW-TT sends a port management list to the TSN AF and the port parameter PTP instance list is included, then the following PTP instance parameter names are not applicable: - 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 - 001DH timePropertiesDS.currentUtcOffset - 001EH timePropertiesDS.timeSource - 001FH externalPortConfigurationPortDS.desiredState - 0020H defaultDS.timeSource  NOTE X+1: When the TSN AF sends a port management list to the DS-TT or the DS-TT sends a port management list to the TSN AF and the port parameter PTP instance list is included, then the following PTP instance parameter names are not applicable: - 0004H Grandmaster on behalf of DS-TT enabled - 0005H Grandmaster candidate enabled - 000FH defaultDS.externalPortConfigurationEnabled - 0015H portDS.announceReceiptTimeout - 001FH externalPortConfigurationPortDS.desiredState - 002FH portDS.syncReceiptTimeout - 0030H portDS.syncReceiptTimeoutTimeInterval  NOTE X+2: When the TSN AF sends a user plane node management list to the NW-TT or the NW-TT sends a user plane node management list to the TSN AF and the user plane node parameter PTP instance specification is included, then the following PTP instance parameter names are not applicable:  - 0003H Grandmaster enabled - 0004H Grandmaster on behalf of DS-TT enabled - 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 - 001FH externalPortConfigurationPortDS.desiredState - 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  NOTE X+3: When the TSN AF sends a user plane node management list to the NW-TT or the NW-TT sends a user plane node management list to the TSN AF and the user plane node parameter DS-TT port time synchronization information list is included, then the following PTP instance parameter names are not applicable: - 0001H PTP profile - 0002H Transport type - 0003H Grandmaster 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 - 001DH timePropertiesDS.currentUtcOffset - 001EH timePropertiesDS.timeSource - 0020H defaultDS.timeSource  NOTE X+4: The "Set parameter" operation shall not be applicable for the following PTP instance parameter names:  - 0012H portDS.portState - 0022H portDS.isMeasuringDelay - 0023H portDS.asCapable - 0024H portDS.meanLinkDelay - 0026H portDS.neighborRateRatio - 0028H portDS.currentLogAnnounceInterval - 002CH portDS.currentLogSyncInterval - 0032H portDS.currentLogPdelayReqInterval - 0036H portDS.currentLogGptpCapableMessageInterval - 003AH portDS.currentComputeNeighborRateRatio - 003EH portDS.currentComputeMeanLinkDelay - 0046H portDS.oneStepTxOper - 0047H portDS.oneStepReceive - 0048H portDS.oneStepTransmit - 004DH portDS.syncLocked |

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