Attribute	Classification	Full-Blown Devices Example Selection "Common"	Constraint Devices Example Selection "Common"	Full-Blown Devices Example Selection "SI"	Constraint Devices Example Selection "SI"	Full-Blown Devices Example Selection "RA"	Constrained Devices Example Selection "RA"	Full-Blown Devices Example Selection "MI"	Constraint Devices Example Selection "MI"	Full-Blown Devices Example Selection "YO"	Constraint Devices Example Selection "YO"	Full-Blown Devices Example Selection "AB"	Constraint Devices Example Selection "AB"	Full-Blown Devices Example Selection "TT"	Constraint Devices Example Selection "TT"	Infrastructure Bridge
Queues 802.1Q 8.6.6	Quantity	Eight	Eight	Eight	Eight	Eight	At least four	Eight	At least four	Eight	At least four	Eight	Eight	Eight	Ω	Eight
Preassigned PCPs	Information	---	---	Example: PCP:7 for network mgmt., PCP:6 for High streams, PCP:5 for Low stream, PCP:4-2 for in domain, and PCP:1-0 for inter domain	Example: PCP:7 for network mgmt., PCP:6 for High streams, PCP:5 for Low stream, PCP:4-2 for in domain, and PCP:1-0 for inter domain	Example: PCP:7 for isochronous/network management (PTP, DLR, STP), PCP: 6 for cyclic/network management (LLDP, YANG, SNMP) PCP: 5:0 for application dependent	Example: PCP:7 for isochronous/network management (PTP, DLR, STP), PCP: 6 for cyclic/network management (LLDP, YANG, SNMP) PCP: 5:0 for application dependent	Example: PCP:7 for Isochronous PCP:6 for cyclic PCP:5 for network control PCP:4 for config., diagnostics PCP:3-0 for other application	Example: PCP:7 for Isochronous PCP:6 for cyclic PCP:5 for network control PCP:4 for config., diagnostics PCP:0 for other application	Example: PCP:7 network management, PCP:6 C2D, PCP:5 C2C / C2Comp, PCP:4 alarm / event, PCP:3-0 for application dependent	Example: PCP:7 network management, PCP:6 C2D, PCP:5 C2C / C2Comp, PCP:4 alarm / event, PCP:3-0 for application dependent	Preassigned traffic classes for the following traffic types (values to be discussed): - Network Control 7 - Cyclic Control – Deadline 6 - Control – Latency 5 - Reserved 4 - Event-based Control 3 - Configuration and Diagnostics 2 - User-defined 1 - Best Effort 0	Preassigned traffic classes for the following traffic types (values to be discussed): - Network Control 7 - Cyclic Control – Deadline 6 - Control – Latency 5 - Reserved 4 - Event-based Control 3 - Configuration and Diagnostics 2 - User-defined 1 - Best Effort 0	Example: PCP:7-2 for Isochronous streams, and PCP:1-0 for inter domain	Ω	Example provided in 60802 clause 4
VLAN Identification	Quantity	At least 8 VIDs Four for streams, rest for non-stream	At least 8 VIDs Four for streams, rest for non-stream	At least 8 VIDs Four for streams, rest for non-stream	At least 8 VIDs Four for streams, rest for non-stream	At least 8 VIDs Four for streams, rest for non-stream	At least 8 VIDs Four for streams, rest for non-stream	At least 8 VIDs	At least 8 VIDs	At least 8 VIDs	At least 8 VIDs	At least 16 VIDs, to be able to support existing used VIDs	At least 16 VIDs, to be able to support existing used VIDs	Up to 8 VIDs	Ω	Support at least 8 VLAN Identifiers The reasoning is: 2 VID for TSN stream traffic, 2 VID for TSN stream redundancy, and 4 VID for non-TSN traffic
VLANs used for streams (FDB configuration) Learning disable Individual VLAN learning (IVL) Default forwarding rule	Feature Feature Feature	Mandatory Mandatory Drop	Mandatory Mandatory Drop	Supported Supported Drop	Supported Supported Drop	Supported Supported Drop	Supported Supported Drop	Supported Supported Drop	Supported Not used Flooding	Supported Supported Drop	Supported Supported Drop	Supported Supported Drop	Supported Supported Drop	Supported Supported Drop	Ω Ω Ω	
VLANs used for non-stream (FDB configuration) Learning enabled Shared VLAN learning (SVL) Default forwarding rule	Feature Feature Feature	Mandatory Mandatory Flooding	Mandatory Mandatory Flooding	Supported Supported Flooding	Supported Supported Flooding	Supported Supported Flooding	Supported Supported Flooding	Supported Supported Flooding	Not used Not used Flooding	Supported Supported Flooding	Supported Supported Flooding	Supported Supported Flooding	Supported Supported Flooding	Ω Ω Ω	Ω Ω Ω	Mandatory Mandatory Flooding
FDB size 802.1Q 8.8 Streams static MC entries used for streams (e.g. 2048 MAC addresses used together with 4 VIDs)	Quantity Quantity	8192[1]	At least 4096	8192[1]	8192[1]	8192	4096	4096	16	16384[2]	1024[16]	8192	512	512	Ω	Reported in PCS Proforma
Non-stream static/dynamic entries for remaining VLAN(s) - 802.1Q 8.8.3?	Quantity	2048	2048	2048	2048	2048	1024	2048	16	16384[3]	1024[16]	2048	2048	128	Ω	Reported in PCS Proforma
Spanning tree 802.1Q 13																

Attribute	Classification	Full-Blown Devices Example Selection "Common"	Constraint Devices Example Selection "Common"	Full-Blown Devices Example Selection "SI"	Constraint Devices Example Selection "SI"	Full-Blown Devices Example Selection "RA"	Constrained Devices Example Selection "RA"	Full-Blown Devices Example Selection "MI"	Constraint Devices Example Selection "MI"	Full-Blown Devices Example Selection "YO"	Constraint Devices Example Selection "YO"	Full-Blown Devices Example Selection "AB"	Constraint Devices Example Selection "AB"	Full-Blown Devices Example Selection "TT"	Constraint Devices Example Selection "TT"	Infrastructure Bridge
For stream VLANs	Feature															
RSTP NOTE Does not work with VLANs	Feature	Optional	Optional	Not used	Not used	Not used	Not used	Not used	Not Used	Supported but optional	Supported but optional	Not used	Not used	Ω	Ω	Mandatory Support the FID to MSTID allocation table per 12.12.2 of IEEE Std optional
MSTP	Feature	Optional	Optional	Not used	Not used	Not used	Not used	Not used	Not Used	Supported but optional	Supported but optional	Not used	Not used	Ω	Ω	optional
For non-stream VLANs	Feature															
RSTP NOTE Does not work with VLANs	Feature	Optional	Optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Not Used	Supported but optional	Supported but optional	Supported	Supported	Ω	Ω	Mandatory Support the FID to MSTID allocation table per 12.12.2 of IEEE Std optional
MSTP	Feature	Optional	Optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Not Used	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Ω	Ω	
Transmission selection control 802.1Q 8.6.8																
Strict priority	Feature	Mandatory	Mandatory	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Ω	Mandatory
Credit based shaper	Feature	Optional	Optional	Not used	Not used	Supported, but Optional	Supported, but Optional	Not used	Not Used	Supported, but Optional	Supported, but Optional	Supported	Supported	Supported	Ω	Optional
Scheduled traffic 802.1Q 8.6.9, 8.6.8.4 Time aware shaper	Feature													Feature		
10Mbps	Feature	Optional	Optional	Not Used	Not Used	Supported but optional	Supported but optional	Supported but optional	Not Used	Supported but optional	Supported but optional	Supported	Supported but optional	Supported	Ω	Mandatory
100Mbps	Feature	Optional[17]	Optional[17]	Supported but optional	Supported but optional	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported but optional	Supported	Ω	Mandatory
1Gbps	Feature	Optional[17]	Optional[17]	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Supported	Supported	Supported	Supported but optional	Supported	Supported but optional	Supported	Ω	Mandatory
2,5Gbps	Feature	Optional[17]	Optional[17]	Not used	Not used	Not used	Not used	Supported but optional	Not Used	Supported but optional	Not used	Supported	Not used	Ω	Ω	Mandatory
5Gbps	Feature	Optional[17]	Optional[17]	Not used	Not used	Not used	Not used	Supported but optional	Not Used	Supported but optional	Not used	Supported	Not used	Ω	Ω	Mandatory
10Gbps	Feature	Optional[17]	Optional[17]	Not used	Not used	Not used	Not used	Supported but optional	Not Used	Supported but optional	Not used	Supported	Not used	Ω	Ω	Mandatory
Cyclic queuing and forwarding	Feature	Optional[17]	Optional[17]	Not used	Not used	Not used	Not used	Not used	Not Used	Not used	Not used	Not used	Not used	Not used	Ω	Mandatory
Gate Control List entries 802.1Q 8.6.8.4	Quantity	At least 3	At least 3	At least 3	At least 3	At least 3	At least 3	At least 3	At least 3	At least 3	At least 3	At least 256	At least 256	At least 256	Ω	These values will be included in the PCS Proforma and therefore used for conformance testing. Specific guidance regarding values for these parameters will be provided in an informative annex.
Tick granularity 802.1Q 8.6.8.4	Quantity	=< 10ns	=< 10ns	=< 10ns	=< 10ns	10ns	10ns	=< 10ns	=< 10ns	=< 100ns	=< 100ns	10ns	10 ns	100ns	Ω	=< 10ns
Number of Hold & Release events 802.1Q 12.30.1	Quantity	1 & 1	1 & 1	1 & 1	1 & 1	1 & 1	1 & 1	1 & 1	—	—	—	1 & 1 [7]	1 & 1 [7]	256	Ω	1 & 1
Admin Cycle Time range 802.1Q 8.6.8.4																
Application Cycle time (is a multiple of Admin Cycle Time / Network Cycle)	Information	---	---	250 μs / 31,25 μs to 1s	250 μs / 31,25 μs to 1s	Ω	Ω	31.25/250 μs to 1s	31.25/250 μs to 1s	10 ms to 1 s	10 ms to 1 s	20 us to 1 s	20 us to 1 s			
100Mbps	Quantity	250 μs to 1 ms	250 μs to 1 ms	250 μs to 1 ms	250 μs to 1 ms	250 μs to 1 ms	250 μs to 1 ms	250 μs to 10 ms	250 μs to 10 ms	500 μs to 10 ms	=< 10ms	100 μs to 20 ms	100 us to 20 ms	62,5 μs to 10 ms	Ω	250 μs to 1 ms

Attribute	Classification	Full-Blown Devices Example Selection "Common"	Constraint Devices Example Selection "Common"	Full-Blown Devices Example Selection "SI"	Constraint Devices Example Selection "SI"	Full-Blown Devices Example Selection "RA"	Constrained Devices Example Selection "RA"	Full-Blown Devices Example Selection "MI"	Constraint Devices Example Selection "MI"	Full-Blown Devices Example Selection "YO"	Constraint Devices Example Selection "YO"	Full-Blown Devices Example Selection "AB"	Constraint Devices Example Selection "AB"	Full-Blown Devices Example Selection "TT"	Constraint Devices Example Selection "TT"	Infrastructure Bridge
>=1Gbps	Quantity	31,25 µs to 1 ms	31,25 µs to 1 ms	31,25 µs to 1 ms	31,25 µs to 1 ms	31,25 µs to 1 ms	31,25 µs to 1 ms	31,25 µs to 10 ms	31,25 µs to 10 ms	500 µs to 1 ms	=< 1ms	20 µs to 20 ms	20 us to 20 ms	62,5 µs to 10 ms	Ω	31,25 µs to 1 ms
Timing points for scheduled traffic 802.1Q 12.29.2[4]	Quantity	=< 10ns	=< 10ns	=< 10ns	=< 10ns	10ns	10ns	=< 10ns	=< 10ns	=< 100ns	=< 100ns	10 ns	10 ns	10ns	Ω	=< 10ns
Maximum gap for transmission of consecutive frames[5]	Quantity	IPG	IPG	IPG	IPG	IPG	IPG	IPG	IPG	IPG	IPG	IPG	IPG	IPG	Ω	IPG
Ingress rate limiter / Flow classification and metering 802.1Q 8.6.5 (MEF 10.3)																
Unicast (implemented as flow meters)	Feature	Mandatory	Mandatory	Supported	Supported	Supported	Supported	Supported	Not used	Supported but optional	Supported but optional	Supported	Supported	Not used	Ω	Mandatory
Multicast / Broadcast (implemented as flow meters)	Feature	Mandatory	Mandatory	Supported	Supported	Supported	Supported	Supported	Not used	Supported but optional	Supported but optional	Supported	Supported	Not used	Ω	Mandatory
Ingress filtering and policing (Qci) 802.1Q 8.6.5.1																
Number of streams	Quantity	—	—	—	—	4096	4096	256	—	8192	4096	8192	8192	Ω	Ω	—
Stream Gates 802.1Q 8.6.5.1.2	Feature	Optional	Optional	Not used	Not used	Supported but optional	Supported but optional	Not used	Not used	Not used	Not used	Supported	Supported	Supported but optional	Ω	Optional
Number of stream gates	Quantity	—	—	—	—	8	8	—	—	—	---	8	8	Ω	Ω	—
Flow Meters 802.1Q 8.6.5.1.3	Feature	Supported	Supported	Supported	Supported	Supported but optional	Supported but optional	Supported	Not used	Supported but optional	Supported but optional	Supported	Supported	Supported but optional	Ω	Supported
Number of flow meters (e.g. one for Unicast and one for Multicast/Broadcast)	Quantity	2 × number of ports[6]	2 × number of ports[6]	2 × number of ports[6]	2 × number of ports[6]	2 × number of ports[6]	2 × number of ports[6]	8	—	8	4	8 x number of ports	8 x number of ports	Ω	Ω	2 × number of ports[6]
Stream Filter 802.1Q 8.6.5.1.1	Feature	Optional	Optional	Not used	Not used	Supported but optional	Supported but optional	Supported	Not used	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Ω	Optional
Ingress and egress frame modification																
Priority regeneration (PCP) 802.1Q 6.9.4	Feature	Mandatory	Mandatory	Supported	Supported	Supported	Supported	Supported	Not used	Supported	Supported	Supported	Supported	Supported	Ω	Mandatory
VLAN stripping and adding 802.1Q 6.9 and 8.8.2	Feature	Mandatory	Mandatory	Supported	Supported	Supported	Supported	Supported	Not used	Supported	Supported	Supported	Supported	Supported	Ω	Mandatory
Preemption 802.1Q 6.7.2																
First or non-final fragment size	Quantity	64	64	64	64	64	64	64	—	—	---	64	64	64	Ω	64
10Mbps	Feature	Mandatory	Optional	Supported	Supported	Supported	Supported but optional	Supported	Not used	Not used	Not used	Supported	Supported	Supported	Ω	Mandatory
100Mbps	Feature	Mandatory	Optional	Supported	Supported	Supported	Supported but optional	Supported	Not used	Not used	Not used	Supported	Supported	Supported	Ω	Mandatory
1Gbps	Feature	Mandatory	Optional	Supported	Supported	Supported	Supported but optional	Supported	Not used	Not used	Not used	Supported	Supported	Supported	Ω	Mandatory
2,5Gbps	Feature	Optional	Optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Supported but optional	Not used	Not used	Not used	Supported but optional	Not used	Ω	Ω	Optional
5Gbps	Feature	Optional	Optional	Not used	Not used	Not used	Not used	Supported but optional	Not used	Not used	Not used	Not used	Not used	Ω	Ω	Optional
10Gbps	Feature	Optional	Optional	Not used	Not used	Not used	Not used	Supported but optional	Not used	Not used	Not used	Not used	Not used	Ω	Ω	Optional
Synchronized network access																
Start of gate cycle trigger[8] (Created out of Working Clock) Used for TAS in the Bridge	Feature	Mandatory[18]	Mandatory[18]	Supported but optional	Supported but optional	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Ω	NA
Bridge / Forwarding resources[10] Specify attributes for the resource management. Ensure buffering of stream and non-stream traffic during stream transmission																
Real-Time traffic[11] Stream High in-class interference >= 1Gbps	Quantity	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 300µs for an egress port	At least 16µs for an egress port	Up to 500µs for an egress port	Up to 200µs for an egress port	At least 400 us for an egress port	At least 400 us for an egress port	Ω	Ω	Reported in PCS Proforma
<= 100Mbps	Quantity	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 3ms for an egress port	At least 160µs for an egress port	Up to 500µs for an egress port	Up to 200µs for an egress port	At least 1 ms for an egress port	At least 1 ms for an egress port	Ω	Ω	Reported in PCS Proforma
Stream Low intra- and in-class interference																Reported in PCS Proforma

Attribute	Classification	Full-Blown Devices Example Selection "Common"	Constraint Devices Example Selection "Common"	Full-Blown Devices Example Selection "SI"	Constraint Devices Example Selection "SI"	Full-Blown Devices Example Selection "RA"	Constrained Devices Example Selection "RA"	Full-Blown Devices Example Selection "MI"	Constraint Devices Example Selection "MI"	Full-Blown Devices Example Selection "YO"	Constraint Devices Example Selection "YO"	Full-Blown Devices Example Selection "AB"	Constraint Devices Example Selection "AB"	Full-Blown Devices Example Selection "TT"	Constraint Devices Example Selection "TT"	Infrastructure Bridge
>= 1Gbps	Quantity	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 300µs for an egress port	At least 16µs for an egress port	Up to 500µs for an egress port	Up to 200µs for an egress port	At least 400 us for an egress port[17]	At least 400 us for an egress port[17]	Ω	Ω	Reported in PCS Proforma
<= 100Mbps	Quantity	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 3ms for an egress port	At least 160µs for an egress port	Up to 500µs for an egress port	Up to 200µs for an egress port	At least 1 ms for an egress port	At least 1 ms for an egress port	Ω	Ω	Reported in PCS Proforma
Non-real-Time traffic[12][13]																
>= 1Gbps[14]	Quantity	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 200µs for an egress port	At least 300µs for an egress port	At least 100µs for an egress port	Up to 500µs for an egress port	Up to 200µs for an egress port	At least 400 us for an egress port[17]	At least 400 us for an egress port[17]	Minimum of 16k per port	Ω	Reported in PCS Proforma
<= 100Mbps[15]	Quantity	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 500µs for an egress port	At least 3ms for an egress port	At least 1ms for an egress port	Up to 500µs for an egress port	Up to 200µs for an egress port	At least 1 ms for an egress port	At least 1 ms for an egress port	Minimum of 16k per port	Ω	Reported in PCS Proforma

[1] A minimum 2048 per VLAN
See "60802-Steindl-DA-MAC-Constraints-0718-v01.pdf"
[2] Only in sum 16384 entries – useable for streams and default VLAN(s)
[3] Only in sum 16384 entries – useable for streams and default VLAN(s)
[4] Minimum and maximum for the delay before the first frame is transmitted after gate open
[5] Getting the value for calculating window sizes
[6] If useable for ingress rate limiting fitting to the domain boundary requirements
[7] maxframesize/minframesize of a TSN domain. Is this value seen for the whole queue or just one frame? Given that there are holdAdvance and releaseAdvance events, then 2 x maxframesize/minframesize.
[8] Specified as a special case of the per stream trigger by using "time aware offset = 0" for all streams
[9] Getting the value for network calculus and calculating window sizes
[10] Model for resource calculation needed due to implementation dependency. What needs to be achieved? What is the goal?
[11] Both stream classes share the time limit; e.g. if only stream high is used, then 200µs are available for high. If only low is used, then 200µs are available for low. If both are used, then they need to share the 200µs.
[12] Stream and non-stream forwarding resources needs to be guaranteed.
[13] Having a time triggered network usage model requires to buffer non-stream traffic during the stream time period to avoid the deletion of the packet being synchronized with the application period.
[14] Length of the period of stream transmission at egress ports need to be protected against congestion lost. „Minimum of 25 Kbytes per port" is an equivalent of 200µs transmission period for 1Gbps.
[15] Length of the period of stream transmission at egress ports need to be protected against congestion lost. „Minimum of 6,25 Kbytes per port" is an equivalent of 500µs transmission period for 100Mbps.
[16] Used for both, streams and non-stream entries
[17] Mandatory for infrastructure bridges, optional for bridged end-stations
[18] Mandatory if TAS is supported