Datasheet Parameters

60802 Contribution

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Content

This presentation contains a list of parameters that need to be considered in the ‘Datasheet Parameters’ for 60802

- To have a structured way of defining the data sheet parameters
- Have a starting point – preliminary list
- The goal is to reduce the list to the absolute necessary parameters

The parameters shall be grouped for

- compliant bridges (also for bridged part of the bridged endstation)
- compliant endstations

Step 1 – Define the parameters, NOT the values

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We should define which ‘Datasheet Parameters’, are needed, before discussing the parameters values.

Example: How long does it take for a frame to pass a bridge in worst case.

Vendor 1 provides:	**Vendor 2 provides:**	**Vendor 3 provides:**
- Latency of Rx-Phy - Latency of bridge logic - Latency of Tx-Phy	- Wire to core latency - Core to wire latency	- Wire to Wire latency

Tools should not be confronted with different sets of input parameters for the same thing !

Example from IEEE/IEC 60802 D.04, Page 18

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Table 12 – Required Ethernet Bridge delays

Data rate	Value	Comment
10 Mb/s	< 30 µs	Bridge delay measure from MII to MII [1)]
100 Mb/s	< 3 µs	Bridge delay measure from MII to MII [1)]
1 Gb/s	< 1 µs	Bridge delay measure from RGMII to RGMII [1)]
2,5 Gb/s	< 1 µs	Bridge delay measure from XGMII to XGMII [1)]
5 Gb/s	< 1 µs	Bridge delay measure from XGMII to XGMII [1)]
10 Gb/s	< 1 µs	Bridge delay measure from XGMII to XGMII [1)]
25 Gb/s – 1 Tb/s:	< 1 µs	Bridge delay measure from XGMII to XGMII [1)]

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- The values are not aligned with the bridge delay parameters description in 802.1Qcc
- Does not contain the delay parameters for ports with different communication speed (e.g., input port is 100Mbit/s and output port is 1Gbit/s port)

Different “level” of capabilities/parameters

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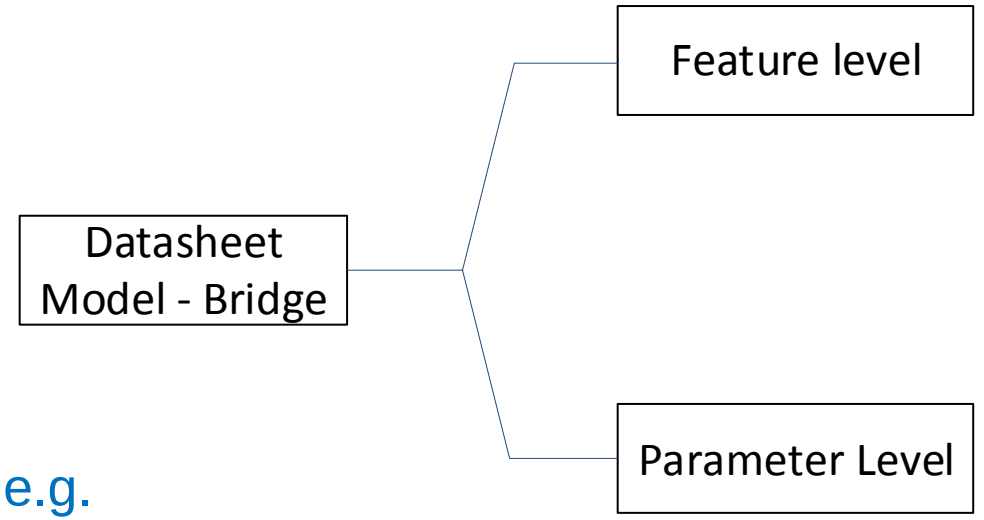

- **Feature level**:
  - Protocols, e.g., NETCONF,…
  - Mechanisms, e.g., Qbv,…

- **Parameter (Detailed) level**: contains parameters like, e.g.
  - switch delay parameters (e.g., dependentDelayMin/Max,…), …
  - number of gates in the gate control list,…

- Parameters at the “**Parameter (Detailed) level”** shall comply with the existing managed objects and/or YANG models
  - exception are possible for parameters for which no managed objects exists, like: frame buffer size

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Feature level – Protocols

- Management Protocols:
  - NETCONF
  - RESTCONF
  - SNMP V1,…
  - SRP, MSRP, RAP,…
- Clock Synchronization:
  - IEEE 1588 v1,…
  - IEEE 1588 power profile
  - IEEE 802.1AS(Rev)
  - Roles (master, slave)
- Others
  - LLDP
  - STP, RSTP,…
- Security
  - 802.1X

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Feature level – Mechanisms

- Qbv
- Qbu
- **1CB**
  - Sequencing
  - Splitting
  - Recovery
- Qav
- **Qci**
  - Time Policing
  - Rate policing
  - Burst policing
  - Length policing
- Qch
- Qcr
- …

- Number of Queues
- Cut-through (future)

- Security
  - MACsec

Bridges: Parameter (Detailed) Level - Device Parameters

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Device parameters

- Max Nr of VLANs
- VLAN, retagging, removing, adding
- Number of queues
- Max number of queue entries
- dependentDelayMin/Max (per port combination and per speed)
  - Incl PHY delays
- independentDelayMin/Max (per port combination and per speed)
- Frame buffer
- Frame chunk granularity
- Max No of Streams
- Number of per-stream filtering and policing entries
- Supported number of dest. MAC entries in the FDB
- Supported Stream Identification functions
  - NULL stream
  - Source MAC and VLAN
  - Active Destination MAC and VLAN
  - IP Stream identification
  - P802.1CBdb
- Qbu - Minimum fragment size

Bridges: Parameter (Detailed) Level - Port Parameters

Per Port Parameters

- Qbv
  - Max No of Gate Events
  - Min/Max AdminCycleTime
  - Tick granularity
- 1CB
  - Sequencing
  - Splitting
  - Recovery

Endstation: Feature Level - Datasheet Parameters

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Feature level – per device

- Management Protocols:
  - SNMP V1,…
  - SRP, MSRP, RAP,…
  - CUC support (PTCC)
- Clock Synchronization:
  - IEEE 1588 v1,…
  - IEEE 1588 power profile
  - IEEE 802.1AS(Rev)
  - Roles (master, slave)
- Qbv
- Qbr
- 1CB
- Qav
- …

Endstation: Parameters (Detailed) Level - Datasheet Parameters

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Device parameters

- VLAN capable (VID insertion capability)
- Number of queues
- Max number of queue entries
- Tx/Rx delay, Incl PHY delays
- Tx/Rx jitter, Incl PHY jitter
- Frame buffer
- Frame chunk granularity
- Tick granularity

Per Port Parameters

- Qbv
  - Max Gate Events
  - Min/Max AdminCycleTime
- Supported Stream Identification functions
  - NULL stream
  - Source MAC and VLAN
  - Active Destination MAC and
  - IP Stream identification
  - P802.1CBdb
- Qbu
  - Minimum supported fragment size

Overview

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