

IEEE 802.3 HSSG

Objectives Proposal
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HSSG Objectives Proposal (1st of 3)

- ❑ Preserve the 802.3/Ethernet frame format at the MAC Client service interface
- ❑ Meet 802 Functional Requirements, with the possible exception of Hamming Distance
- ❑ Preserve minimum and maximum FrameSize of current 802.3 Std.
- ❑ Do not preclude non-standard jumbo frame implementations
- ❑ Support full-duplex operation only
- ❑ Support star-wired local area networks using point-to-point links and structured cabling topologies
- ❑ Specify a new CGMII compatibility interface
- ❑ Support the IEEE 802.3ad Link Aggregation standard
- ❑ Support a speed of 100.00Gb/s at the MAC/PLS service interface
- ❑ Support a BER of 10^{**}-15 allowing for testing at 10^{**}-12

HSSG Objectives Proposal (2nd of 3)

- Provide Physical Layer specifications which support link distances of:
 - Priority 1: at least 10Km over SMF on two fibers (one Tx, one Rx)
 - Priority 2: at least 300m over installed MMF on two fibers (one Tx, one Rx)
- Specify the maximum allowed latency for the hardware below the CGMII interface. Number will depend on factors such as:
 - Inter-lane differential delay on the supported distance
 - Forward Error Correction (FEC) below the CGMII, if any
- Support fiber media selected from the second edition of ISO/IEC 11801 (if needed, 802.3 to work with SC25/WG3 to develop new fiber specification)
- Make low cost, simplicity and use of mature technologies the key drivers in developing the new 100Gb/s standard
- Do not burden the new 100Gb/s standard with capabilities required in the Long Haul transport environment (hundreds to thousands of kilometers)
- Assume that future Long Haul transport systems, just like today in the 1Gb/s and 10Gb/s space, will have client interfaces compatible with the new HSSG IEEE 802.3 standard but proprietary line interfaces on the long haul side

HSSG Objectives Proposal (3rd of 3)

- For the functions below the CGMII compatibility interface, leverage IEEE 802.3 10Gb/s standards and technology as building blocks of the first generation 100Gb/s standard
- For the functions below the CGMII compatibility interface, develop future generations of the standard as higher speed technologies become available and mature in the market
- If first generation of the 100Gb/s standard is based on Aggregation at Physical Layer (APL) of 10 x IEEE 802.3ae, include support of the WAN PHY, operating at a data rate compatible with the payload rate of OC-192c/SDH VC-4-64c
 - Define a mechanism to adapt the MAC/PLS data rate to the data rate of the 10 x 10G WAN PHY
- Reliability (when APL is used): in case of partial failure of hardware attached to the CGMII interface, define a mechanism to adapt the MAC/PLS data rate to lower than 100Gb/s, and support operation over a subset of the lanes

Thank you!