40 Gb/s Ethernet optimized for client applications in the carrier environment: DISTINCT IDENTITY

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40Gb/s Ethernet SMF PMD SG, New Orleans, January 2010

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10 Gbit/s multi-protocol devices

XFP is a well established MSA operating at up to 11 Gb/s which allows interfaces for:

- 10 Gb Ethernet
- OTU2
- STM-64
- OC-192

to be provided by a single device.

In a Carrier environment there is a need to be able to develop a similar device at 40 Gb/s that supports 40GbE together with existing Carrier 40Gb/s client interfaces for:

- OTU3
- STM-256
- OC-768

which have all been implemented as serial optical interfaces.

Existing carrier 40Gb/s client interfaces

	VSR2000-3R2*	VSR2000-3R1	P1I1-3D1
Wavelength (nm)	1530 to 1565	1290 to 1330	1307 to 1317
Format	Serial	Serial	Serial
Pout (dBm)	+3 to 0	+3 to 0	+4 to 0
ER (dB)	8.2	8.2	8.2
Distance (km)	2	2	10
Attenuation (dB)	4	4	6
Penalty (dB)	2	1	1
Psens (dBm)	-6	-5	-7
Document	G.693	G.693	G.959.1

* VSR2000-3R2 is the only interface known to be deployed

Proposed Distinct Identity response

a) **Substantially different from other IEEE 802 standards.**
b) **One unique solution per problem (not two solutions to a problem).**
c) **Easy for the document reader to select the relevant specification.**
d) **Substantially different from other IEEE 802.3 specifications/solutions.**

The proposed amendment is an upgrade path for IEEE 802.3 users, based on the IEEE 802.3 MAC.

There are IEEE 802.3 users who currently use a single device to provide 10GbE/OTU2/STM-64/OC-192 optical interfaces. This proposed amendment would be the only 40Gb/s Ethernet standard that provides optical specifications that are compatible with existing carrier 40Gb/s client interfaces (e.g., OTU3/STM-256/OC-768/40G POS) and would provide an upgrade path for these users to 40Gb/s.

The proposed amendment to the existing IEEE 802.3 standard will be formatted as a new clause, making it easy for the reader to select the relevant specification.

Reference DI responses

LRM distinct identity response

The proposed standard is a 10Gb/s upgrade for 802.3 users based on the 802.3 CSMA/CD MAC.

Currently the industry is moving towards smaller form factor serial solutions, and it is expected that with time these will become dominant. This multimode PHY will be the only one that supports a link distance of at least 220m over installed FDDI-grade multimode fiber and pluggability at the 10GBASE-R PMA interface.

The proposed standard will be formatted as a new clause to the 802.3 standard.

P802.3ba distinct identity response

- The proposed amendment is an upgrade path for IEEE 802.3 users, based on the IEEE 802.3 MAC.
- The established benefits of the IEEE 802.3 MAC include:
  - Deterministic, highly efficient full-duplex operation mode
  - Well-characterized and understood operating behavior
  - Broad base of expertise in suppliers and customers
  - Straightforward bridging between networks at different data rates
- The Management Information Base (MIB) for IEEE 802.3 will be extended in a manner consistent with the IEEE 802.3 MIB for 10 / 100 / 1000 / 10000 Mb/s operation.
- The proposed amendment to the existing IEEE 802.3 standard will be formatted as a collection of new clauses, making it easy for the reader to select the relevant specification.
- Bandwidth requirements for computing and networking applications are growing at different rates. These applications have different cost / performance requirements, which necessitates two distinct data rates, 40 Gb/s and 100 Gb/s.