802.3dm PHY Nomenclature/Definitions Proposal

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Problem and Motivation

- When drafting the standard, the asymmetric nature cause confusion as to what part of the PHY is being referred to.
- The chosen nomenclature is very unwieldy to use.
  - i.e. 100M+10GBASE-T1/V1
- A lot of the confusion is distinguishing between device vs datapath vs preconceived notion on what existing words mean
- Proposing a common set of definition in clause 200.1.1 Nomenclature

Confusion between device, speed, direction

- A device can have a high speed transmit path and a low speed receive path, or vice versa.
- A high speed transmitter works with a high speed receiver.
- A low speed transmitter works with a low speed receiver.
- A device does not have transmitter and receiver of the same speed.

Proposed definitions for clause 200.1.1

- HS_TX High speed Transmitter
- HS_RX High speed Receiver
- LS_TX Low speed Transmitter
- LS_RX Low speed Receiver

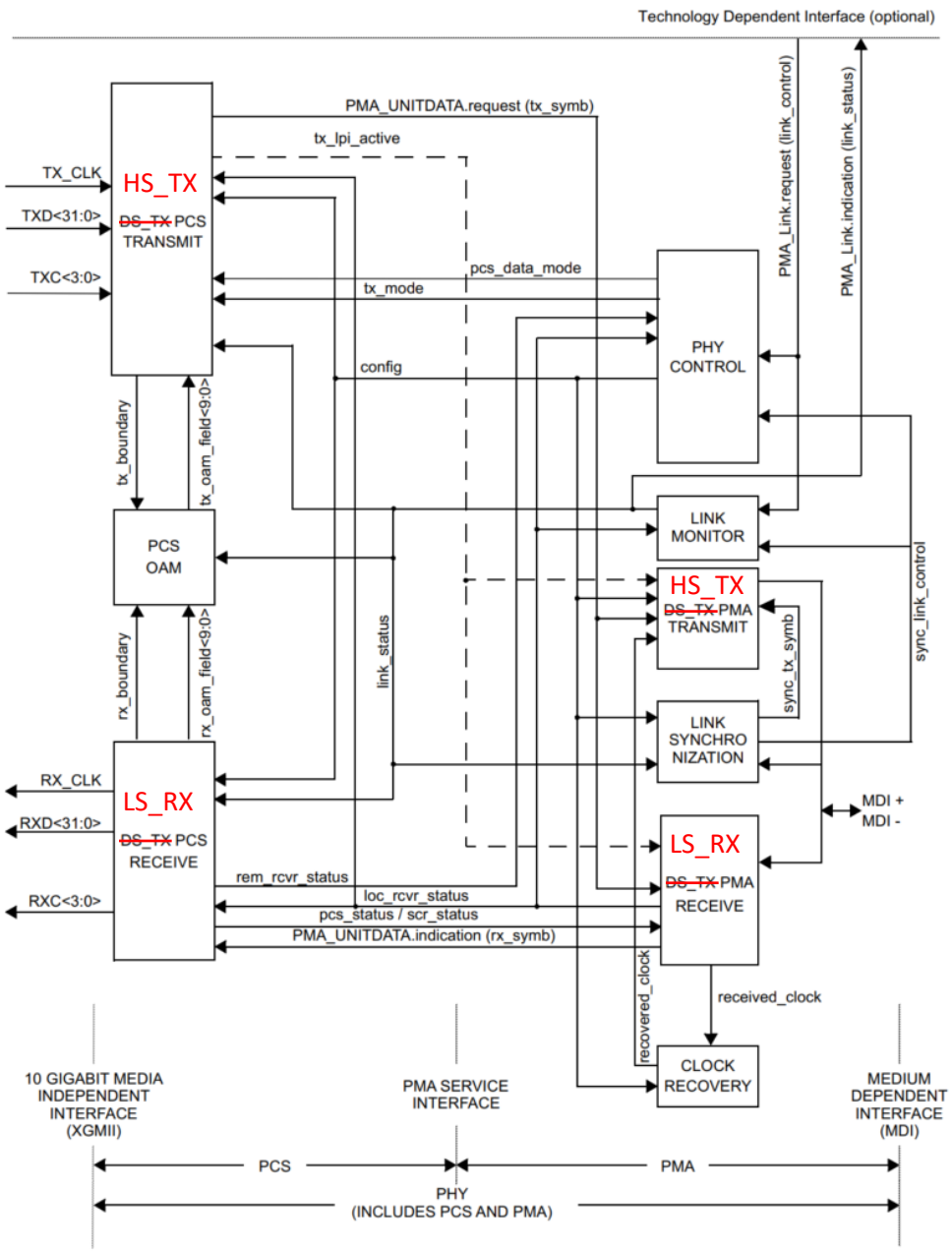
- PHY_S Device containing HS_TX, LS_RX (MultiG+100MBASE-T1/V1)
- PHY_D Device containing LS_TX, HS_RX (100M+ MultiGBASE-T1/V1)

- HS_PATH PHY_S HS_TX to PHY_D HS_RX (replaces DS_TX in 201.1.1)
- LS_PATH PHY_D LS_TX to PHY_S LS_RX (replaces US_TX in 201.1.1)

Additional Caveats

- HS_TX, HS_RX, HS_PATH is agnostic to whether it is 2.5G, 5G, 10G.
- PHY_S, PHY_D does not imply which is leader or follower.
- All terms are agnostic to media type (i.e. T1 / V1)
- Avoid upstream/downstream vocabulary

Fig 201-1

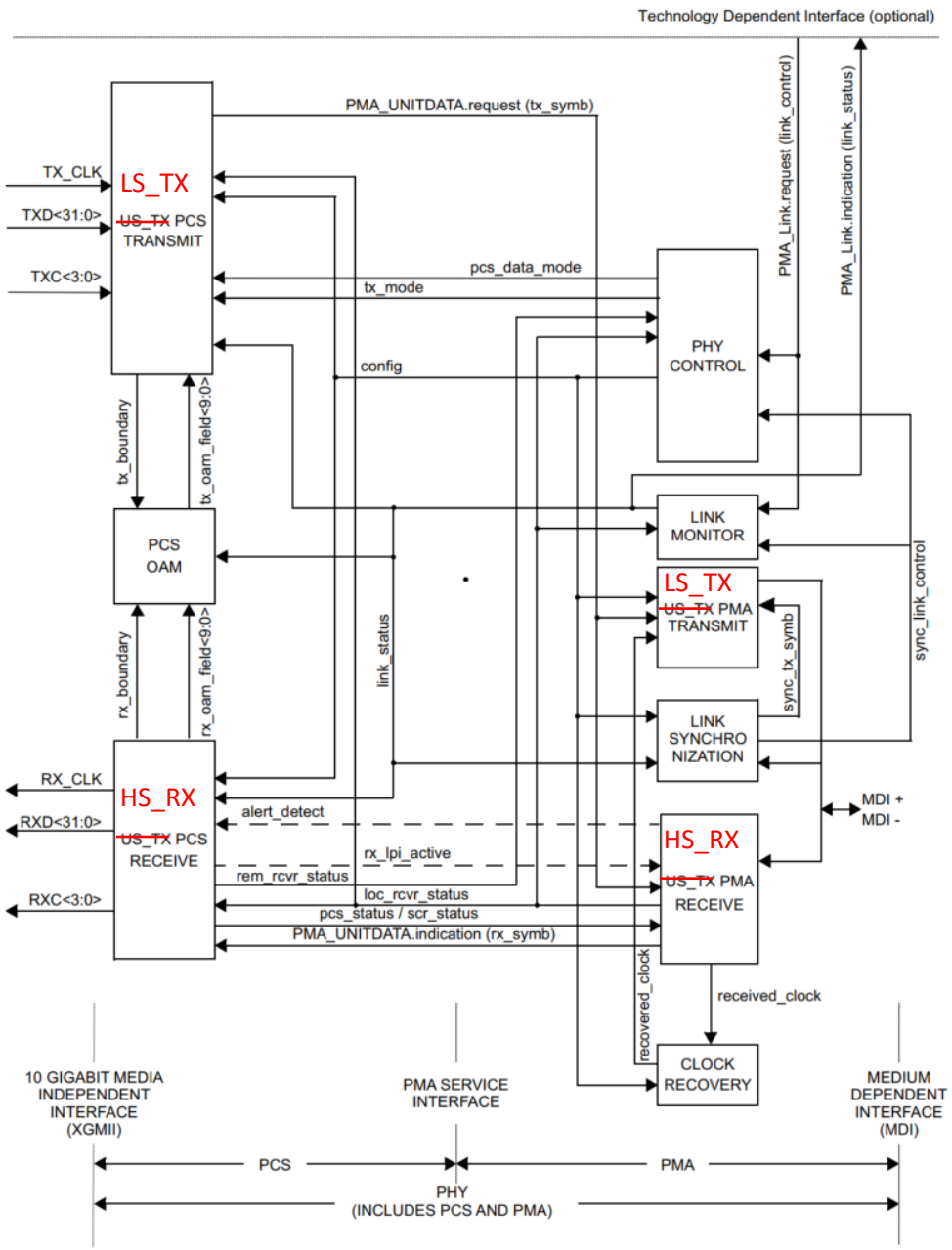


NOTE 1—The recovered_clock arc is shown to indicate delivery of the received clock signal back the PMA TRANSMIT for loop timing.

NOTE 2—Signals and functions shown with dashed lines are optional.

Figure 201–1—~~DS_TX~~ PHY_S functional block diagram

Fig 201-2

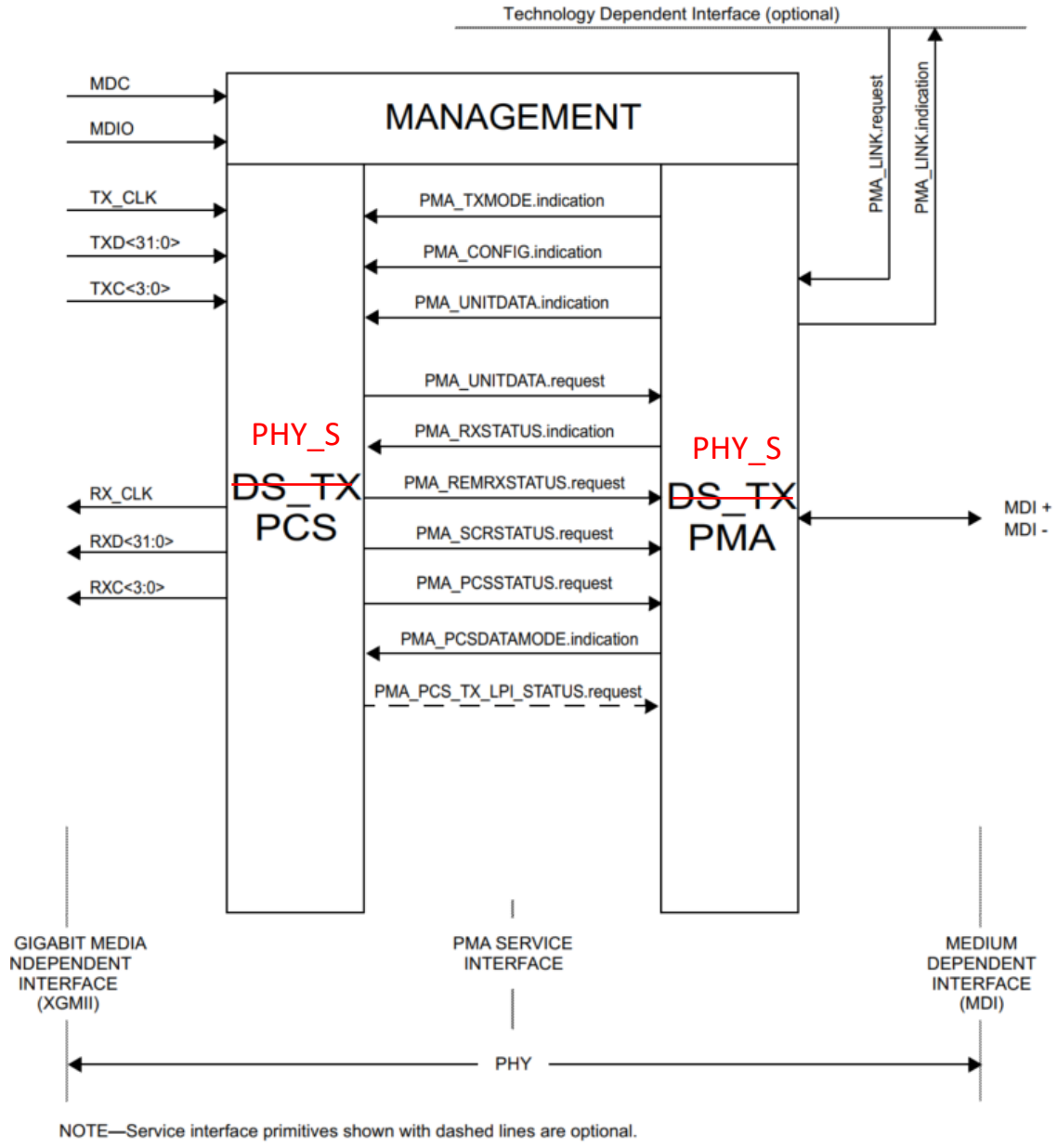


NOTE 1—The recovered_clock arc is shown to indicate delivery of the received clock signal back the PMA TRANSMIT for loop timing.

NOTE 2—Signals and functions shown with dashed lines are optional.

Figure 201–2—~~US_TX~~ functional block diagram

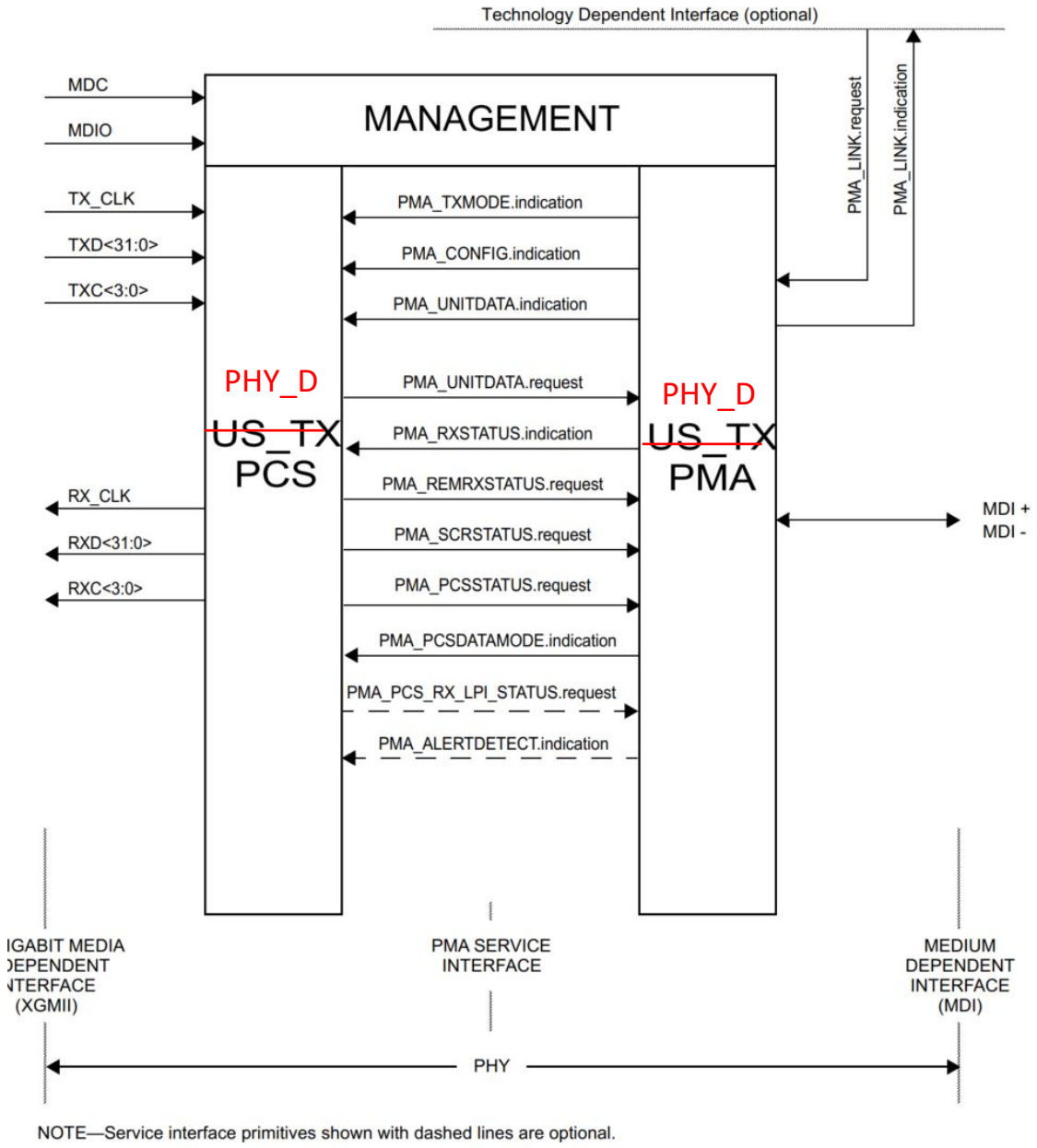
Fig 201-3



PHY_S

Figure 201–3—~~DS_TX~~ service interfaces

Fig 201-4



PHY_D

Figure 201–4—~~US_TX~~ service interfaces

Fixes in other sections

- For the most places can replace DS_TX with HS_PATH and US_TX with LS_PATH
- There may be exceptions where HS_TX, HS_RX, LS_TX, LS_RX, PHY_S, PHY_S may be more appropriate.
  - i.e. 201.8.2.1.1 where phy_role enum DS_TX should be PHY_S and US_TX should be PHY_D
- Titles in 201.2 and 201.3 should be tied to PHY_S and PHY_D and not HS_PATH and LS_PATH.

Section Alignment with Nomenclature

- Clause 201.2 PHY_S Service Primitives/Interfaces
- Clause 201.3 PHY_D Service Primitives/Interfaces
- Clause 201.4 HS_PATH PCS
- Clause 201.5 LS_PATH PCS
- Clause 201.6 HS_PATH PMA
- Clause 201.7 LS_PATH PMA
- Clause 201.8 Common PMA
  - Coordinating HS_PATH and LS_PATH

Other Recommendations

- The *G+100MBASE-T1/V1 and 100M+*GBASE-T1/V1 while precise is very unwieldy.

> **200. Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer, and baseband medium, type 100M+2.5GMBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, 10G+100MBASE-T1, 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GMBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, 10G+100MBASE-V1**

- Recommend Task Force re-examine alternative proposals to streamlined the names of the capabilities.

THANK YOU