

Updated proposal for resolution of comments #13, #14

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Key points from initial discussion

- Straw polls show general support for the direction of the comments.
 - **#2: I support adding a squelch feature to the PMA output:** Y: 17, N: 10, NMI: 5, A: 12
 - **#3: I support adding text explaining how local faults are used to signal upstream faults:** Y: 26, N: 4, NMI: 6, A: 8
 - **#4: I support allowing modules that include a PHY XS to squelch the output in addition to sending local faults:** Y: 19, N: 5, NMI: 9, A: 11
- Concerns about adding a minimum time specification.
 - **Removed from this updated proposal!**
- Changes to 200G and 400G AUIs are out of scope.
 - **Removed from this updated proposal!**
- Concern about whether signal indication is reliable.
 - To clarify: this proposal is not about signal detection (which is specified in the PMD clauses) but about conveying the information over the AUI.
 - Any issues should be dealt with by future comments on PMDs.

Proposal for comment #14

(addressing modules without a PHY 800GXS)

Add a squelch feature to the 8:8 PMA output

To be implemented with editorial license

- Change 173.4.8.3 as follows:

173.4.8.3 8:8 PMA signal status

The 8:8 PMA contains a signal indication logic (SIL) functions that continuously monitors the quality of the signal from the sublayer below and above the PMA and generate the PMA:IS_SIGNAL.indication and inst:IS_SIGNAL.request primitives (see 173.3 and Figure 173-5).

~~The SIL function reports the signal status as OK when all of the following conditions are met:~~

- ~~—data is being received on all 8 input lanes (*inst:IS_UNITDATA_0:7.indication*)~~
- ~~—data is being sent on all 8 output lanes (*PMA:IS_UNITDATA_0:7.indication*)~~
- ~~—the SIGNAL_OK parameter of the *PMD:IS_SIGNAL.indication* primitive is set to OK, if there is a PMD immediately below the PMA~~

~~Otherwise the SIL reports the signal status as FAIL.~~

In the receive direction, the *PMA:IS_SIGNAL.indication* parameter SIGNAL_OK is set to OK when data is being received on all 8 input lanes (*inst:IS_UNITDATA_0:7.indication*) and the SIGNAL_OK parameter of the *inst:IS_SIGNAL.indication* primitive is OK. Otherwise, it is set to FAIL.

In the transmit direction, the *inst:IS_SIGNAL.request* parameter SIGNAL_OK is set to OK when data is being sent on all 8 input lanes (*PMA:IS_UNITDATA_0:7.request*) and the SIGNAL_OK parameter of the *PMA:IS_SIGNAL.request* primitive is OK. Otherwise, it is set to FAIL.

If the PMA service interface or the interface below it is physically instantiated (800GAUI-8 C2C or C2M), the PMA may indicate SIGNAL_OK=FAIL to that interface by disabling some or all output lanes.

Add a squelch feature to the AUI-C2C output

- Add 120G.3.2 to the draft, and change its first paragraph as follows:

120G.3.2 Module output characteristics

~~The module output~~ When the module output is enabled, it shall meet the specifications given in Table 120G-3. When the module output is disabled, the differential peak-to-peak output voltage shall be less than 35 mV.

The low-frequency 3 dB cutoff of the output AC-coupling within the module should be less than 100 kHz. A test system with a fourth-order Bessel-Thomson low-pass response with 40 GHz 3 dB bandwidth is to be used for all output signal measurements, unless otherwise specified.

- Change the title of Table 120G-3 to "Module output characteristics at TP4 in enabled state".

To be implemented with editorial license

Proposal for comment #13

(addressing modules with a PHY 800GXS)

Explain how local faults are used to signal upstream faults + Allow squelch

- Insert a new subclause after 171.4, as follows (renumbering subsequent subclauses as necessary):

171.5 Link fault signaling

Link fault signaling generated by the PHY (see 170.3 and 81.3.4) is transmitted toward the RS as Local Fault ordered sets through the 800GMII Extender.

A link fault condition may be communicated to the PMA through the optional service interface primitive PHY_XS:IS_SIGNAL.indication with SIGNAL_OK=FAIL (see 173.4.8.2).

To be implemented with editorial license

Add a squelch feature to the 8:32 PMA output

To be implemented with editorial license

- Change 173.4.8.2 as follows:

173.4.8.2 8:32 PMA signal status

In the transmit direction, The 8:32 PMA provides signal status information to the PHY 800GXS using the PHY_XS:IS_SIGNAL.request(SIGNAL_OK) service interface primitive (see 173.3 and Figure 173–4).

The SIGNAL_OK parameter is set to OK when data is being received on all 8 input lanes (PMA:IS_UNITDATA_0:7.request). ~~all of the following conditions are met:~~

~~———— data is being received on all 8 input lanes (PMA:IS_UNITDATA_0:7.request)~~

~~———— data is being sent on all 32 output lanes (PHY_XS:IS_UNITDATA_0:31.request)~~

~~Otherwise SIGNAL_OK is set to FAIL.~~

In the receive direction, the 8:32 PMA forwards the SIGNAL_OK parameter of the PHY_XS:IS_SIGNAL.indication service interface primitive (see 173.3 and Figure 173–4) to the SIGNAL_OK parameter of the PMA:IS_SIGNAL.indication service interface primitive. If the PMA service interface is physically instantiated (800GAUI-8 C2C or C2M), the PMA may indicate SIGNAL_OK=FAIL by disabling the output of some or all lanes of that interface.

Service interface changes

Consequence of the changes in previous slides.

Suggested figure updates may not be comprehensive. Implementation by the editors may be different (full editorial license).

Service interface descriptions

- Change 171.3.2 as follows:

171.3.2 PHY 800GXS service interface

The PHY 800GXS service interface primitives are summarized as follows:

PHY_XS:IS_UNITDATA_ *i*.request(tx_symbol)

PHY_XS:IS_UNITDATA_ *i*.indication(rx_symbol)

PHY_XS:IS_SIGNAL.request(SIGNAL_OK)

PHY_XS:IS_SIGNAL.indication(SIGNAL_OK) (optional)



The PHY XS may generate this indication

- Change 173.3 as follows:

173.3 Service interface below PMA

There are several different sublayers that may appear below a PMA, including the PMD, an extender sublayer, or another PMA. The variable *inst* represents whichever sublayer appears below the PMA (e.g., another PMA or a PMD).

The sublayer below the PMA utilizes the inter-sublayer service interface defined in 169.3.1. The service interface primitives provided to the PMA (when applicable) are summarized as follows:

inst:IS_UNITDATA_ *i*.request(tx_symbol)

inst:IS_UNITDATA_ *i*.indication(rx_symbol)

~~PMD:~~*inst*:IS_SIGNAL.indication(SIGNAL_OK)

PHY_XS:IS_SIGNAL.request(SIGNAL_OK)



Several sublayers may generate this indication

PHY 800GXS diagram

- In Figure 171–2, add an arrow for the PHY_XS:IS_SIGNAL.indication primitive towards the PMA
- The PHY 800GXS may generate this indication.

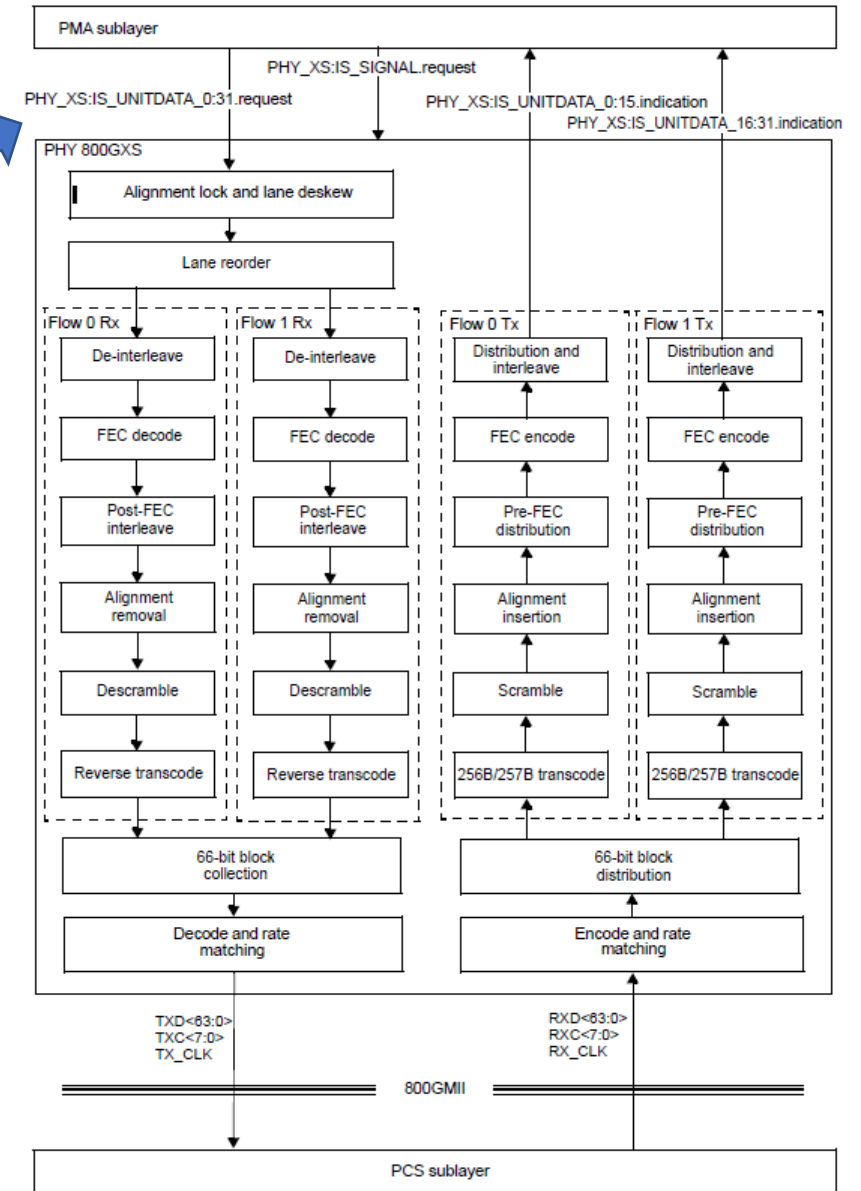


Figure 171–2—Functional block diagram for the PHY 800GXS

8:32 PMA diagram

- In Figure 173–4, add IS_SIGNAL.indication interfaces and arrow.
 - No SIL required for this case.

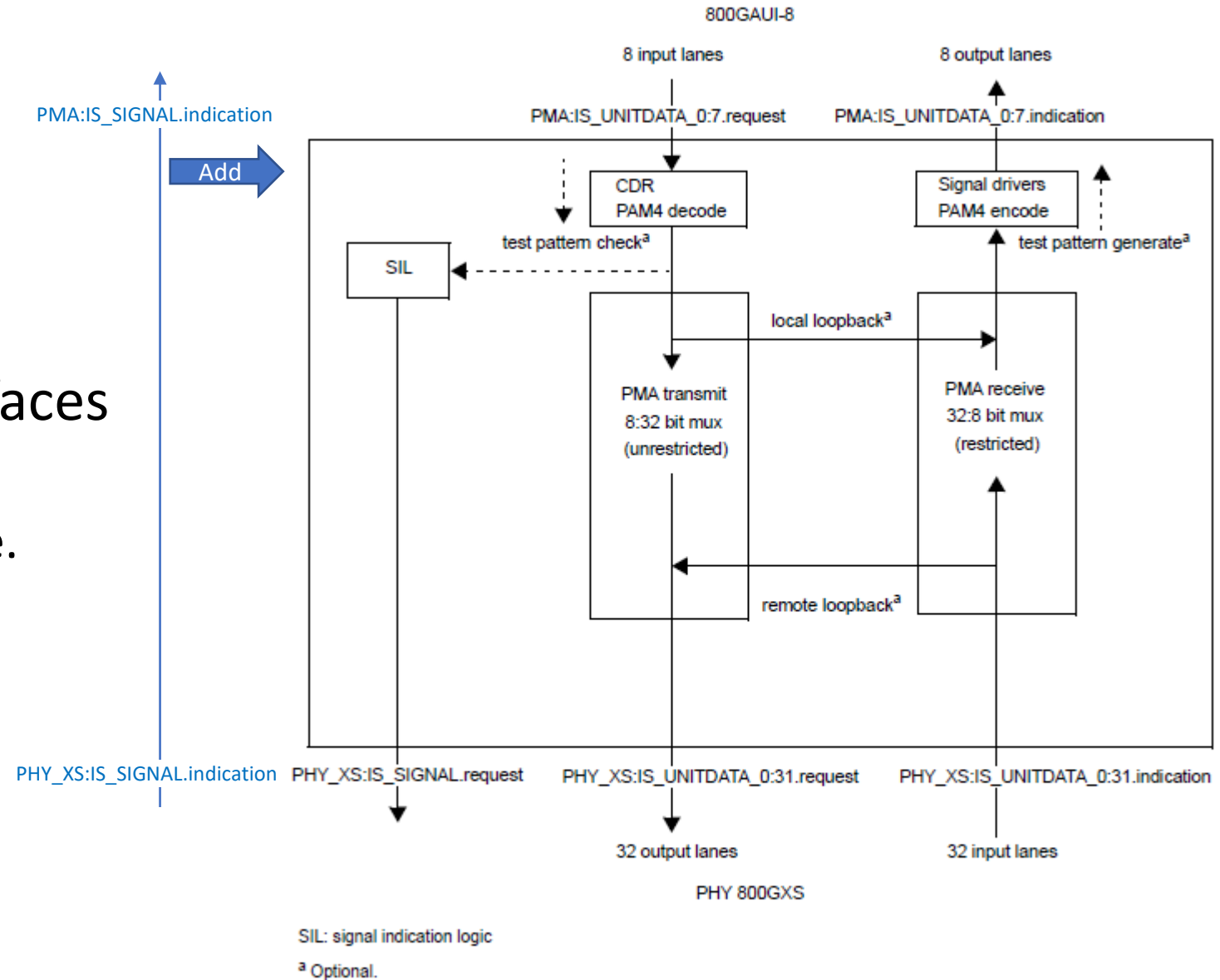
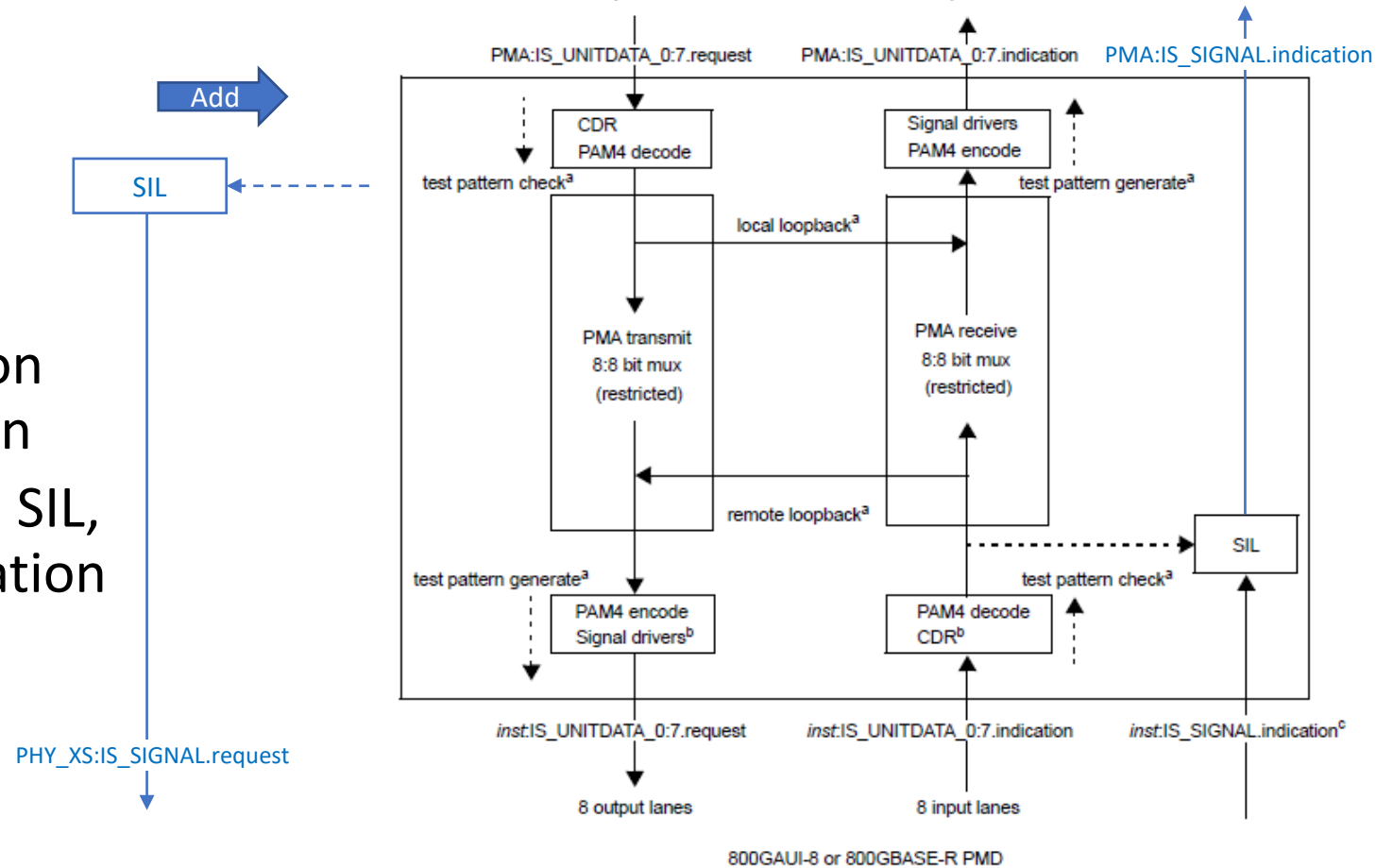


Figure 173–4—8:32 PMA functional block diagram

8:8 PMA diagram

- In Figure 173–5
 - Add PMA:IS_SIGNAL.indication output in the receive direction
 - Add PMA:IS_SIGNAL.request, SIL, and PHY_XS:IS_SIGNAL.indication in the transmit direction



inst: PMA^b or PMD^c
 SIL: signal indication logic

^a Optional.

^b If an 800GAUI-8 is below the PMA.

^c If the sublayer below the PMA is a PMD.

Figure 173–5—8:8 PMA functional block diagram