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## P 1 3 9 4 B   A R B I T R A T I O N   S T A T U S

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# SUMMARY

Detailed state machine not yet ready (again)

- Rev 1 due end of this week (Dec 11)

■ Architecture review

- Structure of PHY for DS-only, Beta-only, and bilingual

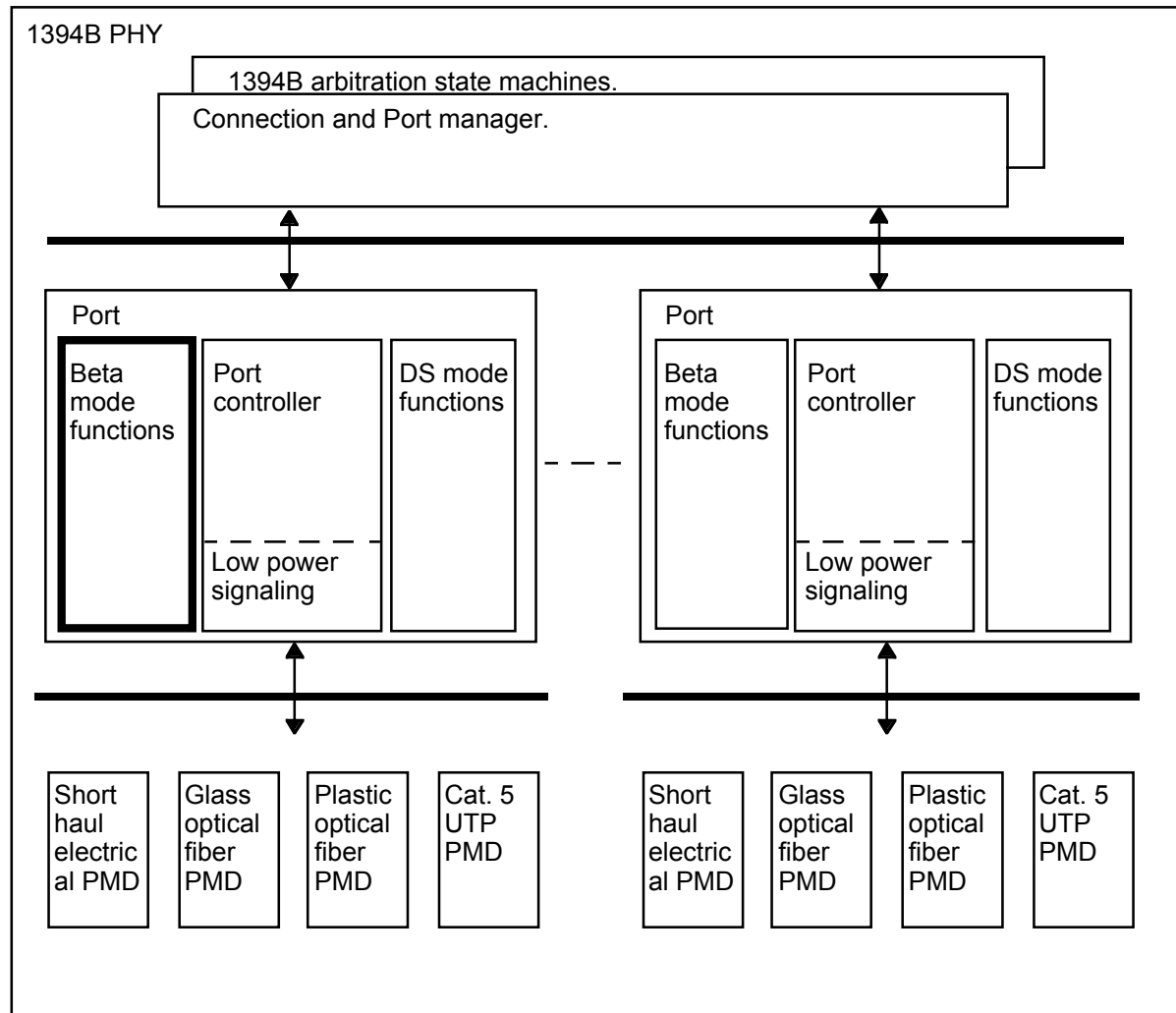
■ Summary of bilingual operation

- (updated from October)

■ Proposed working style

- Code & state machines will be posted on <http://www.zayante.com/p1394b/bport> (watch the bport reflector)
- Post comments/corrections to bport reflector **only**
- If someone wants to setup a basic (even primitive) simulation for testing, send me a note (<mailto:mike@zayante.com>)

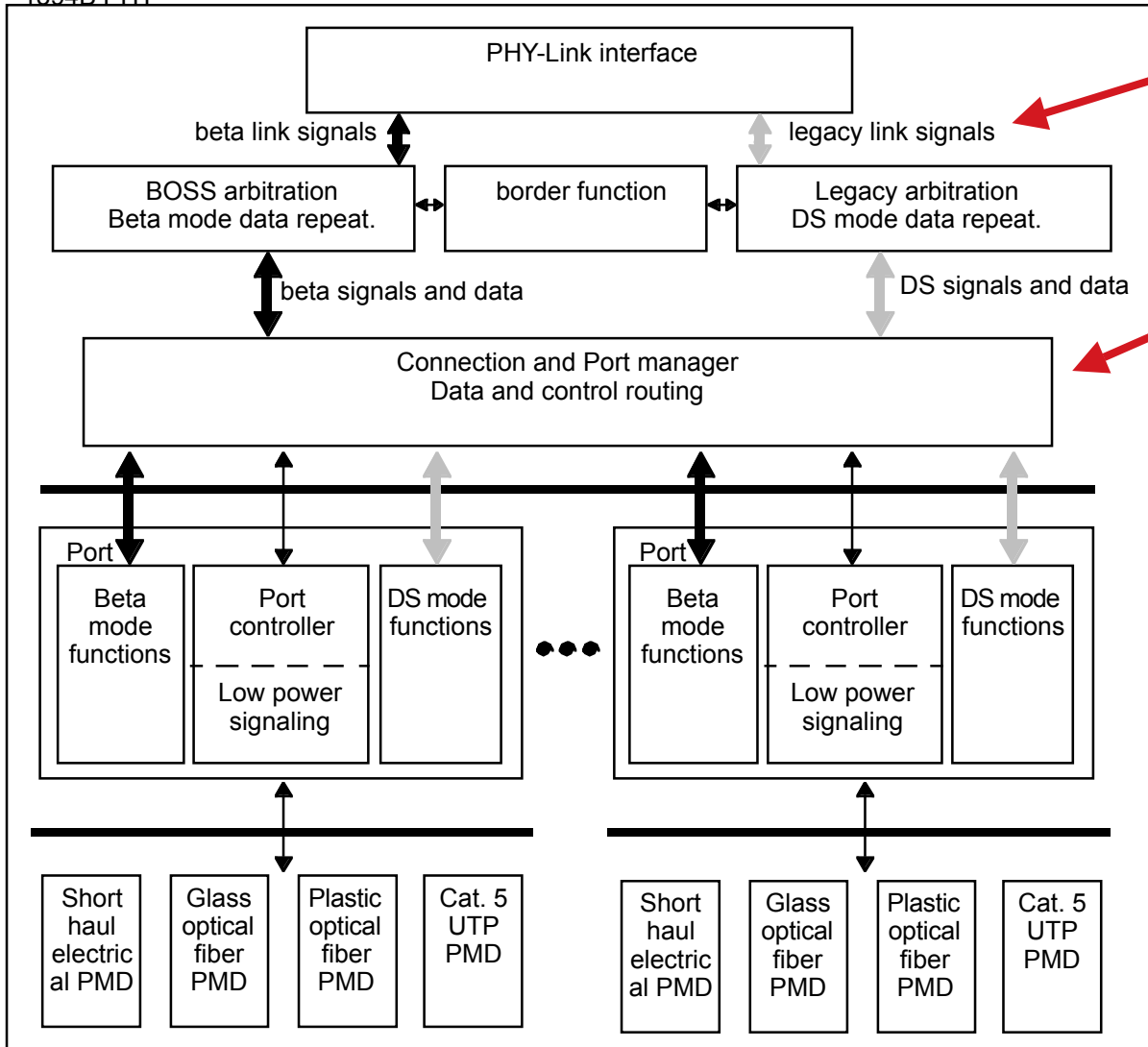
# ARCHITECTURE (CURRENT DRAFT)



Beta mode port interfaces

# ARCHITECTURE (PROPOSED)

1394B PHY



Only for PHYs that support legacy Links

Connects beta and DS signals to appropriate arbitration and repeat data paths



# NOTES ON PROPOSED ARCHITECTURE

As always, this is just a model for specification

- NOT an implementation
- Do anything you want in implementation, just behave the same as the model
- Performance enhancements (less latency, for example) allowed

DS-only and Beta-only PHYs are simpler (sometimes, much simpler)

Bilingual PHY has single point of interaction

- “Border function”

# SUMMARY OF UPDATED BILINGUAL OPERATION

Rename "Low" and "High" priorities to "Border\_Low" and "Border\_High" so the use is more specific.

Removed Phase\_0/1 requests for Asynch requests

- no compelling reason to change from Current/Next)

Requires (rather than suggests) that the cycle start tokens be defined.

Border functionality will be required even in beta-only PHYs if they can connect to 1394-1995 or p1394a Links.

The 10 usec "Firewire request timeout" fix will start when a request is received on a DS port when the root is in the beta cloud, even if the beta cloud is not busy. (see steps 2, 3.3.1 and 4 in case 1 of the operation section)

## SUMMARY (CONT.)

No "Border\_Low" request during attempts to extend the fairness cycle on the DS side.

Some comments about the need to set the DS-cloud nodes to a somewhat larger gap count than a pure DS-network would need

- Bus management “magic”

Adds the requirement for beta-cloud root systems, the DS-side must have its isoch cycle extended until the total network isoch cycle is finished.

Removed optimization note to case 4 (too complicated ... if a vendor wants to make a better border node, it can include some basic minimal link function to handle this case).

# MESSAGES REQUIRED

## Arbitration requests

- Asynch\_current, asynch\_next, cycle\_start, isoch\_phase\_0, isoch\_phase\_1, border\_high, border\_low

## Arbitration tokens

- Cycle\_start\_0, cycle\_start\_1