Bport task group

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Tempe

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To join reflector, visit www.zayante.com/p1394b

Bport error reporting

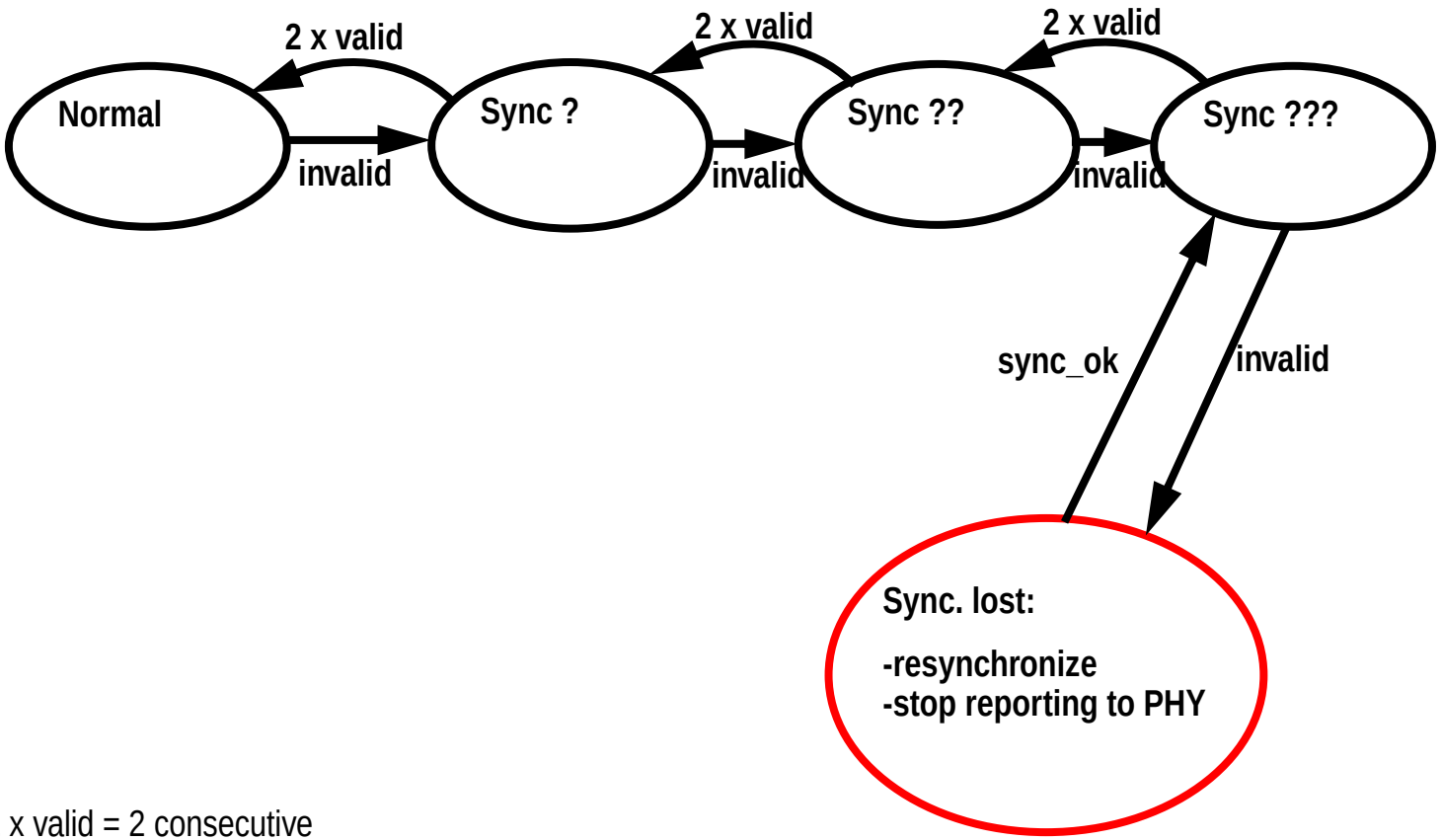
- See http://www.zayante.com/p1394b/bport/ac980304-sync.pdf

- Principles:
  - Port monitors received invalid codeword rate to determine if synchronization has been lost. If lots of errors, then port attempts to resynchronize.
  - Port also *reports* invalid errors in a read only PHY register.
  - Higher layers may use error register info. to disable port, change port max. operating speed etc.
  - Port only disables itself or changes max. operating speed in response to a request from a higher layer.

    i.e. port does not change operating speed or disable itself in response to error rate info. - this is a higher layer function.

Loss of synchronization algorithm

- Based on Fibrechannel



2 x valid = 2 consecutive valid codewords

Error reporting

- Whenever an INVALID codeword is received, port increments an 8 bit port_error register (register wraps to zero).

- INVALID =
  - not a data nor a control codeword.
  - data codeword with incorrect disparity.

- This provides a crude measure of error rate which may be used by higher layers - when and how is beyond scope of port specification.

- port_error register is remote read-only - can be used for remote diagnostics during testing.

Test modes

- Proposal: port provides a mechanism for tx. scrambler to be disabled (one bit R/W register).
  - Allows a tester to generate (“nasty”) packets with predictable patterns of codewords, in order to exercise the receive circuits of a DUT.
  - Content of test packets are beyond scope of port spec.
  - Tester would presumably determine DUT performance by periodically reading the DUT port_error register.
  - Port descrambler cannot be disabled - prevents normal link operation without scrambling.
  - Testing via another node would not be possible.

Service model and interfaces

- 1394a uses shared variables and function calls to interface between port specific functions global PHY functions.
  - portT, portR, portTspeed etc.
- In process of evolving c-code to a model closer to 1394a
  - e.g. bportT, bportR, bportTspeed etc.
- Schedule for new c-code: new draft chapter before April meeting.