LREQ's During Reset, Tree-ID, Self-ID?

P1394a Meeting, Maui

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Is There a Problem?

- P1394a Draft 1.1 does not restrict when the link can issue LREQ's based on the primary PHY states of Reset, Tree-ID, Self-ID, or Normal Arbitration.
- No currently identified problems for RdReg, WrReg, or AccCtrl LREQ's.

Potential BREQ Problem #1

- Precise timing of Bus_Reset status (clause 5) relative to breq = NO_REQ (clause 7) is not specified.
  - Link and PHY may be out of sync temporarily, but it should be resolved by the time the first Self-ID packet is received into the PHY. Maybe some weird behavior if node is isolated?

Potential BREQ Problem #2

- PHY doesn’t currently cancel pending bus request on transmission of Self-ID
  - Link will consider a bus request which comes coincidental with or before the PHY’s transmission of it’s own Self_ID as canceled and may attempt to issue a new, possibly different bus request.
  - The PHY does not cancel the first request and may subsequently grant that request.

Proposed Solution

(AKA choice “a”)

- PHY should cancel fair/priority request when transmitting the self-ID sequence. (Consistent disposition against P1394a table.)
  - Required for old ping response transmission anyway.
- Link is free to make LREQ’s (bus, register, or acceleration) without regard to the PHY state. (Still obey current LREQ tables.)
- Potential Problems avoided since self-ID packet sequence (at least one will always be seen by the link) will resynchronize link and PHY by clearing any pending fair/priority request.
- By the way, a compliant link according to the current P1394a rules won’t issue an IsoReq or ImmReq before the first subaction gap after a bus reset.