

Redundant NNI Connectivity

Thoughts on a protocol design

Mick Seaman
mick_seaman@ieee.org

Some goals

- Multiple links (not just pairs) between multiple nodes (not just two each side)
- Dynamic add. links and nodes, not just failure
- Nodes/links can fail, reappear, don't remember current protocol state only initial config.
- Inter-nodes communication on arbitrary paths
- Arbitrary delay on communication paths
- VID (ISID?) allocation of traffic to links

Choosing the link

- Pecking order (per allocatable unit - au)
 - Node pecking order
 - Link pecking order (from pecking order of connected nodes)
- State for each link at each node (per au):
 - Released (not providing connectivity for this au)
 - Bid (want to provide connectivity)
 - Connected
- Liveness/acknowledgment:
 - follow the security protocol (MKA) design

State transitions

⇒ Released

- if link down
- if better link Bid or Connected

⇒ Bid

- if all better links Released

⇒ Connected

- if all other links have seen Bid, and are Released

Node at either end of link can report link State