RSVP-TE Extensions for LSP Inquiry

draft-ali-ccamp-lsp-inquiry-00.txt

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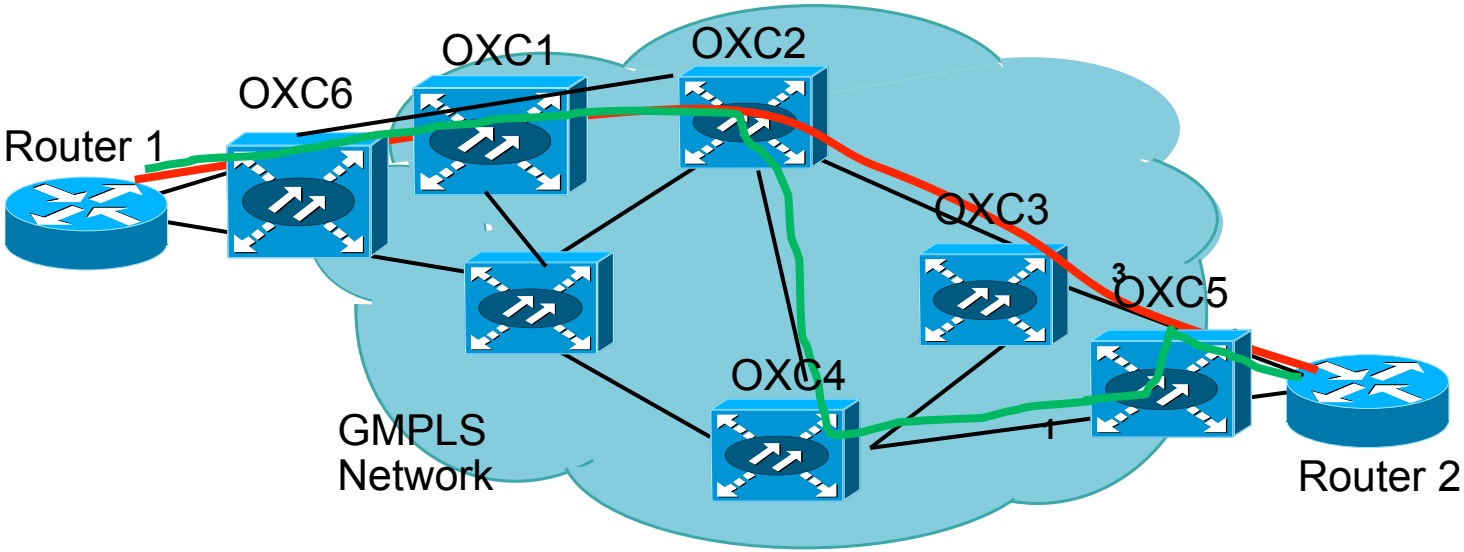
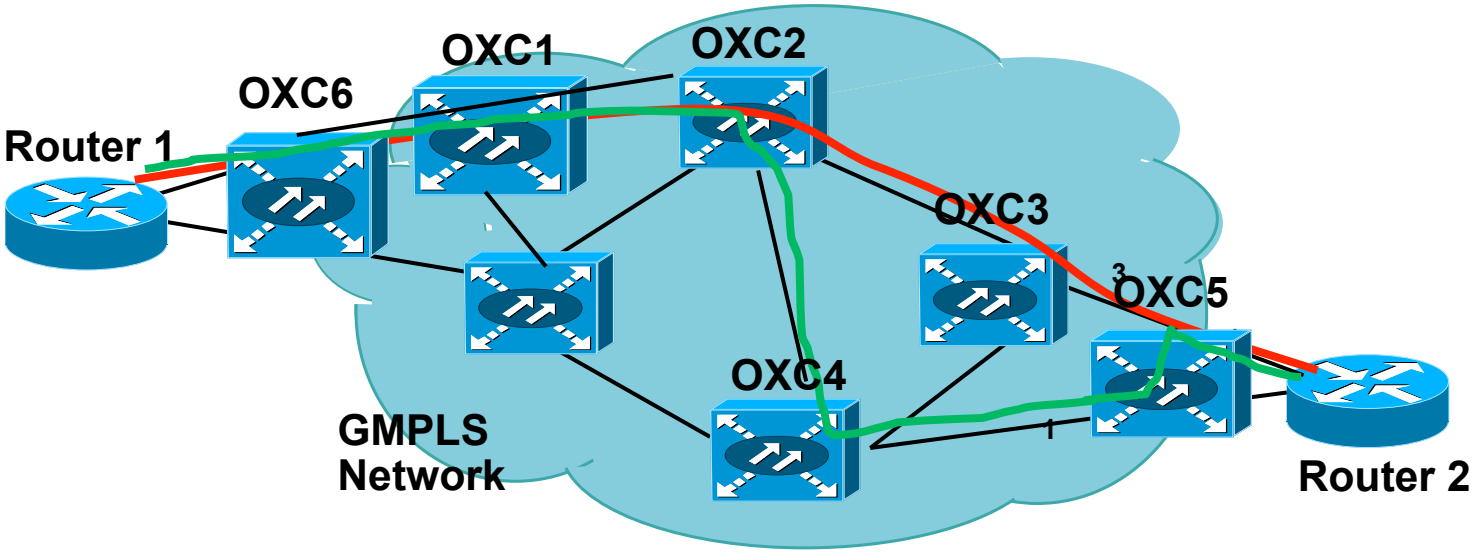
Background



- In typical packet networks, there is no UNI
- The head-end node can directly determine if a more optimal path is available
- Additionally, because bandwidth can be double booked, the head-end node can signal a new LSP and determine whether it can be setup even if the LSP extends beyond the local (visible) domain

Requirements and Scope



- In an Optical network, generally to re-optimize a circuit the circuit must be torn-down and resignaled
- However, across a UNI or NNI, nodes attempting re-optimization have no visibility and therefore cannot know if a more optimal path exists
- Critical in IP networks to minimized link outages
  - Maintenance windows are really ‘times of (hopefully) lower impact’
  - Need to have high confidence that a better path can be established before taking down something that is working

What is Inquiry?

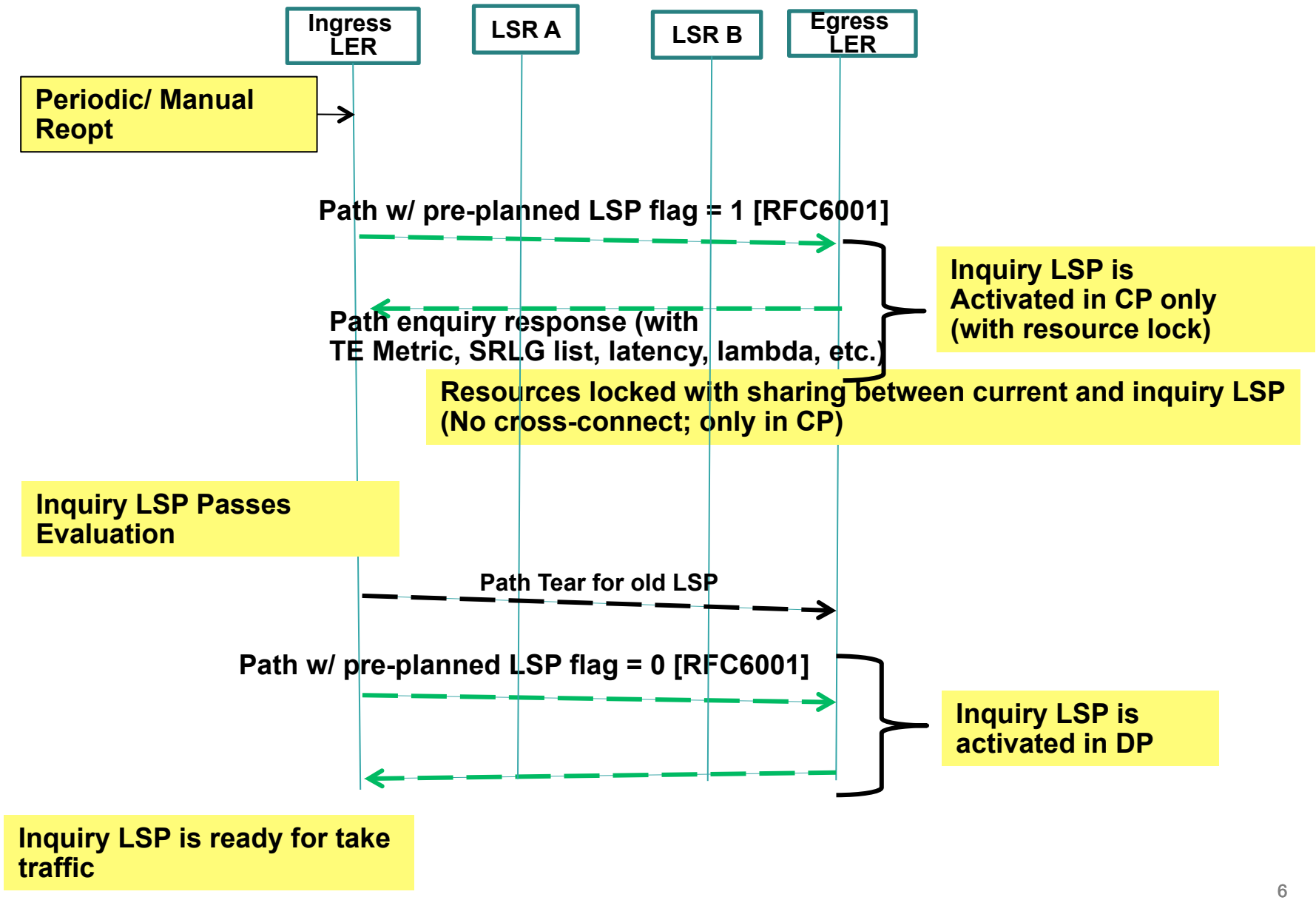
- Two phase commit to re-optimize a path
- A third phase (really a phase 0) is optional to not lock resources until head-end decides it likes the re-opt path

Reoptimization

"Flag" optical network to allow sharing of resources (link, wavelengths) between current and reopt LSPs – without installing cross-connect for reopt LSP (i.e., without affecting traffic on the existing lsp).

- If successful working lsp is torn-down and reopt is signaled as working
- Draft suggest using pre-planned bit (RFC6001) as well as a new attributes flag to indicate locking
- Other mechanisms also have been defined, need wider discussion to determine what's best (e.g. RFC4872)

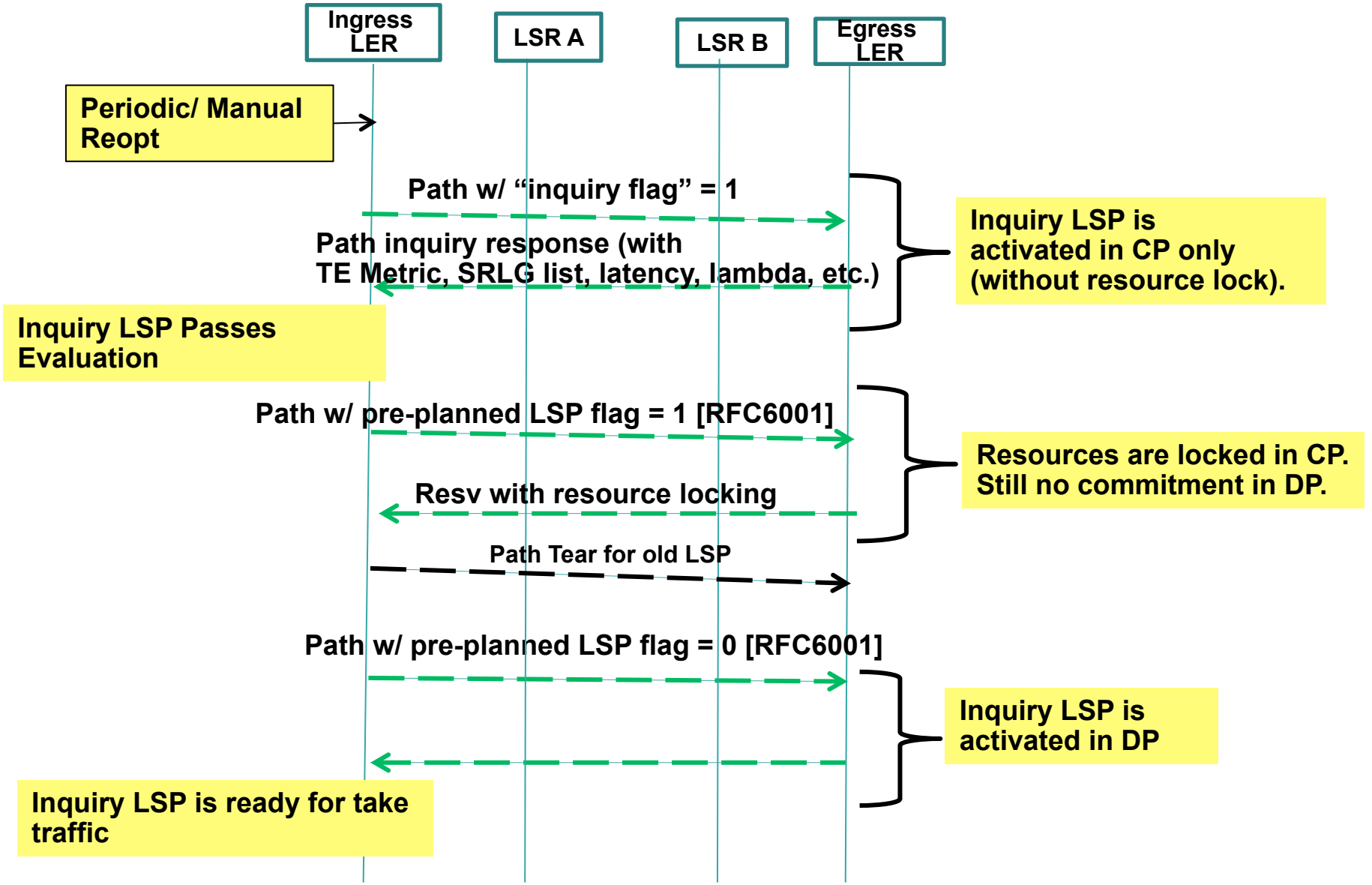
Inquiry Procedure – Inquiry with Resource Lock



Limitation of Inquiry with Resource Lock

- Resources are locked in CP and cannot be shared for multiple inquiry LSPs

Inquiry Procedure – inquiry without Resource Lock



Next Steps

- Initiate discussion
- Update draft with a complete technical solution
- Objective is to reuse existing mechanisms as much as possible