Requirements for MPLS Over a Composite Link
draft-ietf-rtgwg-cl-requirement-02

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Changes since Version 01

- ## Summary of IETF 78 WG Minutes
  - http://tools.ietf.org/wg/rtgwg/minutes?item=minutes78.html
  - ACTIONS
    - Add additional material on convergence times in Appendix A
    - Clarify requirements having to do with aggregation of routing information and ensure that it is stated as a derived requirement
  - Consensus was that draft was relatively mature, near ready for last call

- ## Summary of WG Mailing List Discussion
  - Detailed editorial and content review by Tony Li (Thanks!)
  - Major technical changes summarized in subsequent slides

- ## Easiest to see changes at following:
  - http://tools.ietf.org/wg/rtgwg/draft-ietf-rtgwg-cl-requirement/draft-ietf-rtgwg-cl-requirement-02-from-01.diff.html

Definitional, Terminology Changes

- Added references for applicable MPLS technologies in section 2
- Rewrote composite link and component link definitions in section 3 to make them clearer & self contained
  - i.e., reduce reliance on reading and translating G.800
- Replaced Service Level Agreement (SLA) with Network Performance Objective (NPO) throughout

Major Functional Requirements Changes

- ## FR#2

  - Was: The solution SHALL provide a means for aggregating signaling such that in response to a failure in the worst case cross section of the network that MPLS LSPs are restored within the timeframe needed to meet the SLA objective.

  - Now: The solution SHALL ensure that all possible restoration operations happen within the timeframe needed to meet the NPO. The solution may need to specify a means for aggregating signaling to meet this requirement.

- ## FR#20 - New

  - The solution SHOULD support the use case where a composite link itself is a component link for a higher order composite link. For example, a composite link comprised of MPLS-TP bi-directional tunnels viewed as logical links could then be used as a component link in yet another composite link that connects MPLS routers.

Major Derived Requirements Changes

- -01
  - DR#6 When a worst case failure scenario occurs,the resulting number of links advertised in the IGP causes IGP convergence to occur, causing a period of unavailability as perceived by users. The convergence time of the solution MUST meet the SLA objectivefor the duration of unavailability.
  - DR#7 The Solution SHALL summarize the characteristics of the component links as a composite link IGP advertisement that results in convergence time better than that of advertising the individual component links. This summary SHALL be designed so that it represents the range of capabilities of the individual component links such that functional requirements are met, and also minimizes the frequency of advertisement updates which may cause IGP convergence to occur. Examples of advertisement update tiggering events to be considered include: LSP establishment/ release, changes in component link characteristics (e.g., latency, up/down state), and/or bandwidth utilization.
- -02

  - DR#6 The Solution SHALL support composite link IGP advertisement that results in convergence time better than that of advertising the individual component links. The solution SHALL be designed so that it represents the range of capabilities of the individual component links such that functional requirements are met, and also minimizes the frequency of advertisement updates which may cause IGP convergence to occur.
  - One solution approach is to summarize the characteristics of the component links in IGP advertisements; however, the intent of the above requirement is not to specify the form of a solution. Examples of advertisement update triggering events to be considered include: LSP establishment/release, changes in component link characteristics (e.g., latency, up/down state),and/or bandwidth utilization.

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Recommendations

- Submit -02 draft to rtgwg for last call
- Focus on advancing cl-framework draft
- Respond to Alia's request regarding interest, follow on to this work
  - Review and comment on emerging solution drafts cited in that Email thread