New work item proposal: Protection Performance Benchmarking

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Motivation

Background

- Reliability needs for IP networks
- Protection technology to improve reliability
  - Automatic Protection Switching (APS) for SONET/SDH
  - Resilient Packet Ring (RPR) for Ethernet
- Recovery timing in IP-layer is different from that in lower layer (I/F up/down recognizing mechanism, buffering effect, etc. on IP routers)

Carrier needs

- Testing methodology to compare implementations objectively and to verify interoperability for multi-vendor protection systems
- Specified performance measures to quantify reliability on the carrier providing network to users

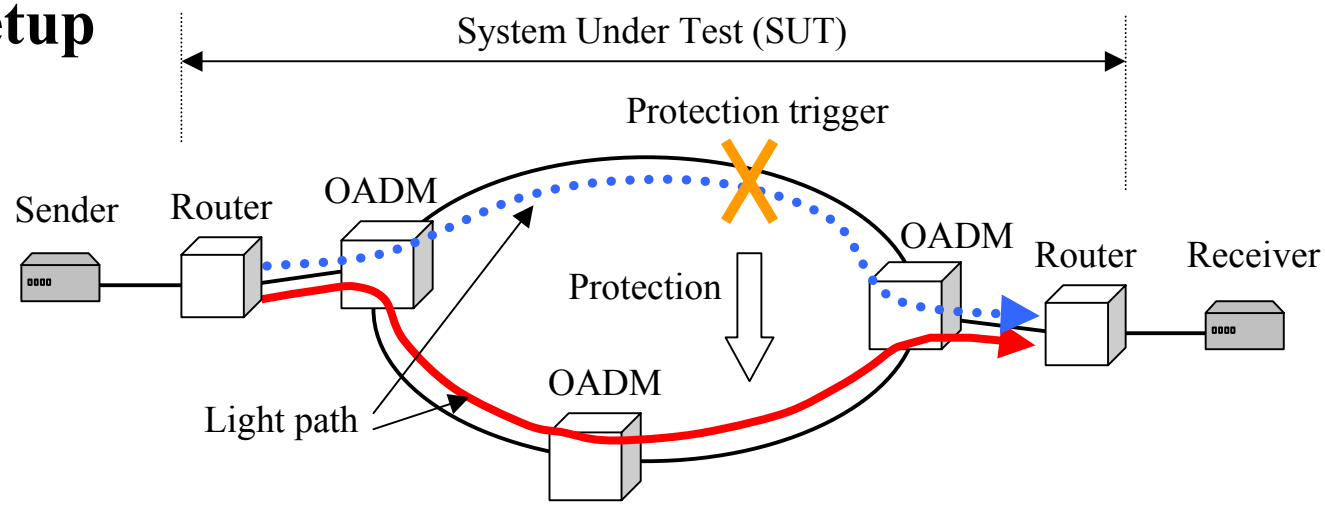
Goals

- Specify testing methodology of protection performance as followings:
  - At first, focus on SONET/SDH APS performance
  - Performance measures considered in IP-layer aspects
  - Flexibility for topology of system under test (SUT)

    Point-to-Point, Ring, Mesh
  - Coverage of different protection types (1+1, 1:n, etc.)
  - Applicability to multi-vendor protection systems

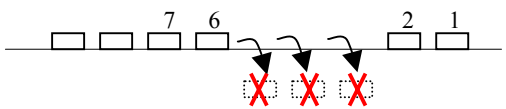
Protection performance measurement examples in IP-layer quality aspects

Test setup

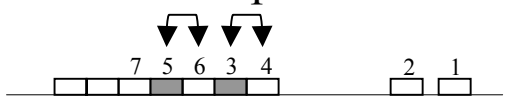


Expected effects on IP-layer quality

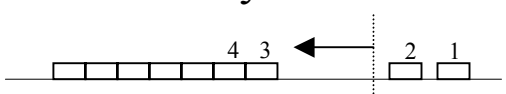
Dropped packets



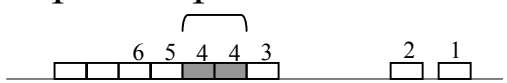
Out-of-order packets



Induced delay



Duplicate packets



Proposal

- Consider this work item in the BMWG
- Draft documents will specify testing terminology and methodology on SONET/SDH APS performance in IP-layer quality aspects
- Any suggestion?