A Framework for Management and Control of Optical Interfaces supporting G.698.2

draft-kunze-g-698-2-management-control-framework-00

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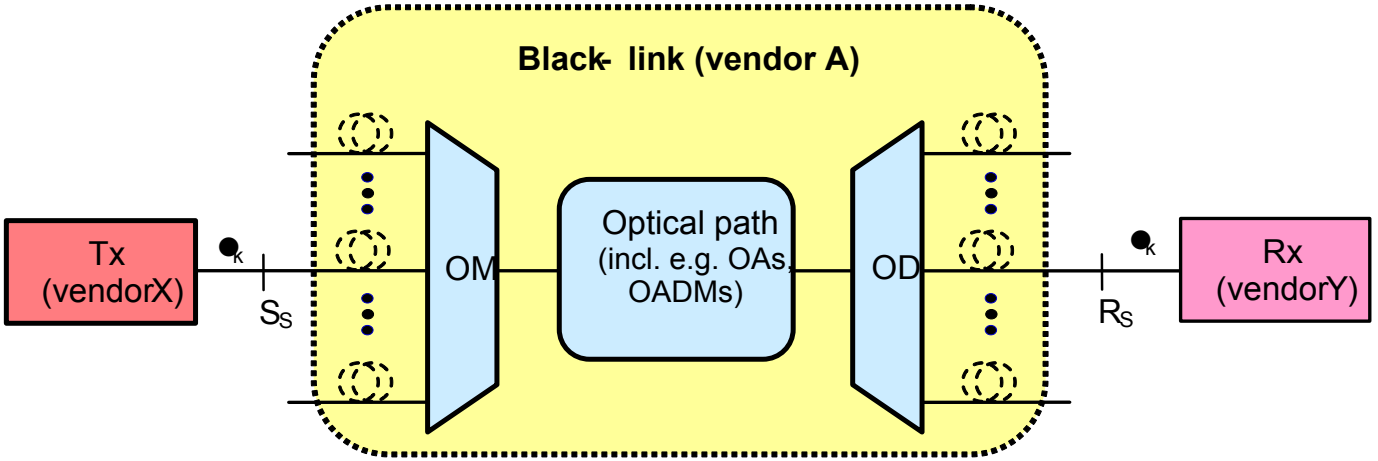
Motivation

- Define a Framework for the Control and Management of Optical Interfaces according to the Black Link approach
  - Develop Enhancements for Control & Management to leverage the Black Link approach in carrier networks in large-scale
  - Use Case: Improved Interworking between third party systems e.g. Router <-> DWDM <-> Router
  - Support Status-Quo as well as future network management and control concepts
- Black Link according to ITU-T G.698.2 provides options to deploy Optical Interfaces in a WDM network
  - currently defined up to 10G
  - being extended by ITU-T for 40G, 100G and beyond
  - primarily intended for metro applications (i.e. up to 600km reach)

Recap: G.698.2 in a colored Nutshell



Black Link: The Black Link approach **[ITU-T G.698.2]** allows supporting an optical transmitter/receiver pair of one or different vendors to inject an Optical Channel (OCh) and transfer it over a DWDM network composed of amplifiers and add-drop multiplexers from a different vendor. Therefore the standard defines the ingress and egress parameters at the reference points Ss and Rs.

G.698.2 provides an optical interface specifications towards the realization of transversely compatible dense wavelength division multiplexing (DWDM) systems primarily intended for metro applications which include optical amplifiers."
=> towards "multivendor DWDM optical transmission networks"

Document Scope and Perspective

- Solutions for Control and Management of Optical Interfaces
  - Operational Scenarios and Uses Cases
  - Requirements for Black Link deployments

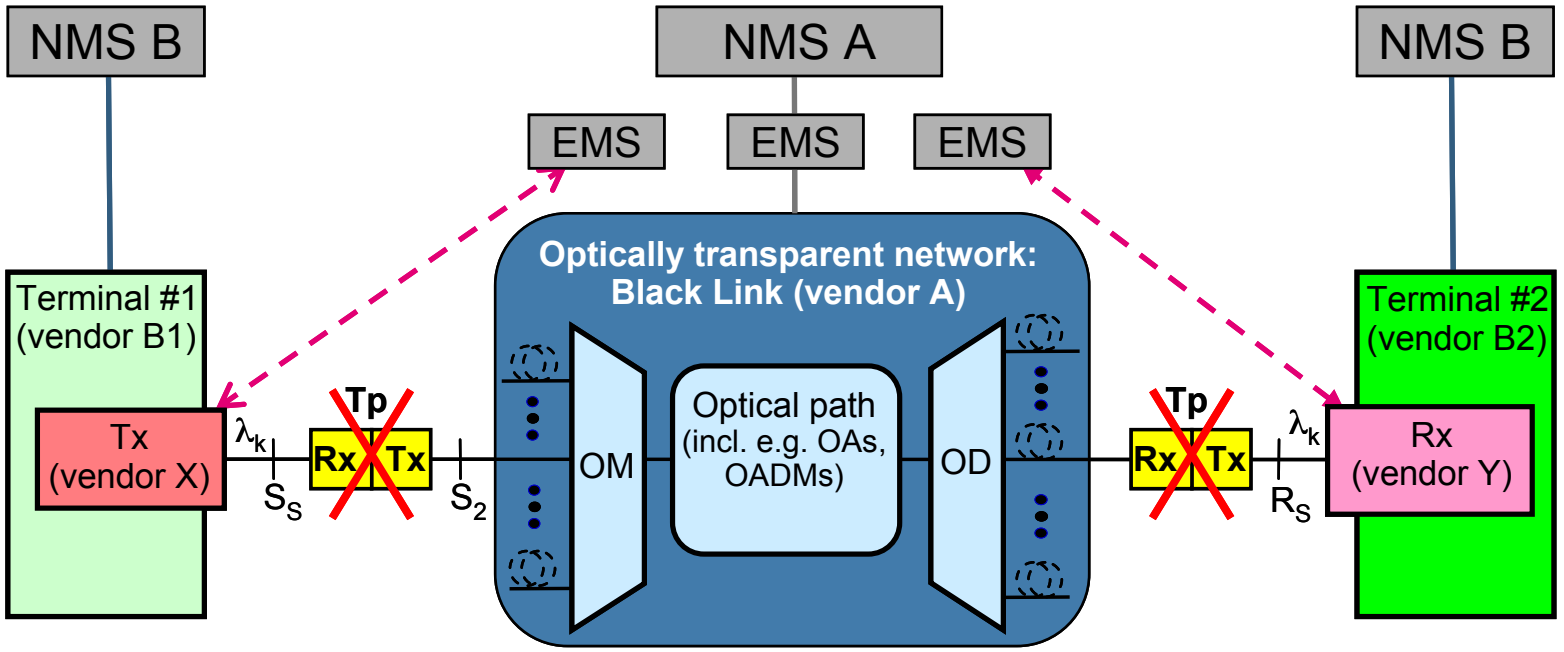
- Interoperable Control and Management Solutions required
  - Supporting multivendor transverse interoperability DWDM networking
  - Considering just one optical network operator (i.e. one administrative domain)
  - Data Plane under consideration is well-defined and standardized (ITU-T G.698.2)
  - IETF work focuses on the control and management aspects for the optical interface / optical system (excluding active optical components)

- WSON work is complementary

- Alignment with work going forward in ITU-T

Solution initially in Focus

- Optimized interconnection of client nodes to the optical transport network, being all in the same administrative domain (intra-domain)



Tp – Transponder (eliminated)
EMS – Element Management System
NMS – Network Management System

Current Status & Modifications

- Presented first time at the last meeting in Prague
- Feedback from the WG chairs
  - Renaming the document
  - Base management and control extensions on existing ITU-T standards
- Work introduced to and discussed with ITU-T

➢ Addressed the feedback from the working group and from ITU-T

ITU-T Discussion Results

- Black Link contributions for the recent ITU-T Chicago interim
  - General proposal to progress BL work in ITU-T Q9, Q12, Q14 of SG15; beyond optical specifications being in the works by Q6
  - Equipment Functions, Architecture & Features of Black Links (Q9, Q12)
  - Protocol neutral Black Link Management models (Q14)
  - ➢ Black Link will be subject of next SG15 Plenary Coordination Meeting

- Clarifications from ITU-T discussions for the IETF activities
  - Documents at IETF will focus on the management and control of optical interfaces based on existing ITU-T standards (ITU-T G.698.2)
  - Management of the WDM network part of Black Links is out of scope

Next Steps

- Proposal to home/base this work in CCAMP, along with related Black Link work at ITU-T
- Feedback from Operators and Vendors invited
  - Requirements
  - Use cases and deployment scenarios
- Progress work on Use Cases and Requirements

- Corresponding MIB document in progress