

LMP

G.698.2 parameters

draft-dharinigert-ccamp-g-698-2-imp-09.txt

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About LMP

- RFC4204 (LMP) and RFC4209 (LMP-WDM)

“For scalability purposes, multiple data links can be combined to form a single traffic engineering (TE) link. Furthermore, the management of TE links is not restricted to in-band messaging, but instead can be done using out-of-band techniques. This document specifies a link management protocol (LMP) that runs between a pair of nodes and is used to manage TE links.”

NON-GOAL:

LMP is neither used for signaling nor for routing Wavelength

Motivation & Problem statement

- ITU-T G.698.2 defines the Application Codes and their optical parameters to operate a DWDM system in a Black Link approach
- ITU-T G.694.1 providing the Lambda definition
- ITU-T G.872 and G.874.1 are considered as additional reference

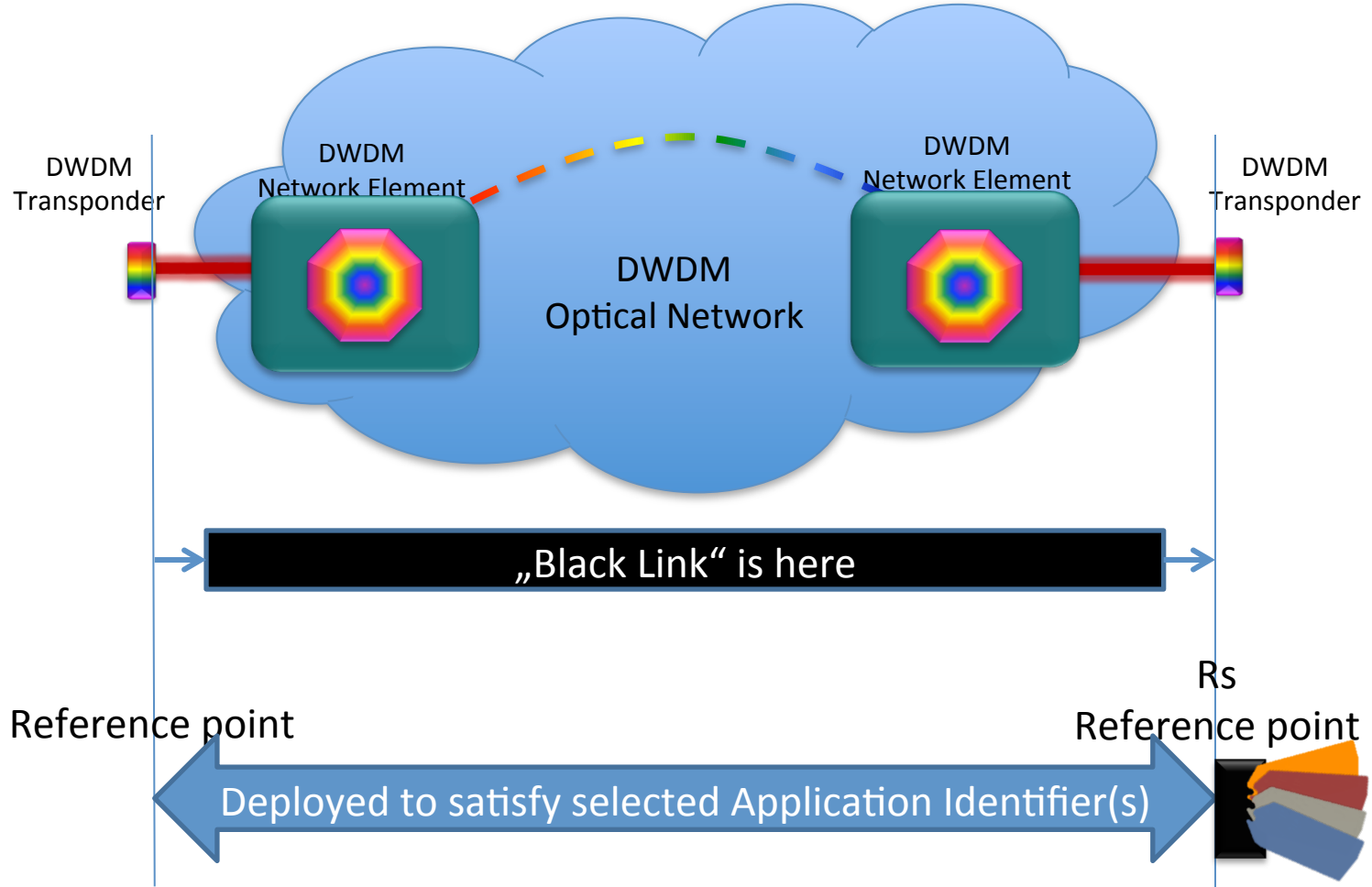
GOALS of the draft:

- Provide a standard way to retrieve/set the ITU-T application code, the power and the frequency.
- Provide standard way to retrieve/set the optical parameters not included in the application code.
- Support EMS/NMS/SDN controllers to access the optical parameters
- Enable a common and simple way to share information on optical parameters across vendors and operators
- Allow Client and DWDM equipment to exchange information on DWDM i/f parameters

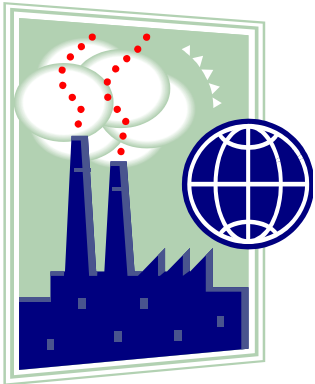
G.698.2-LMP

1. Goal: LMP correlates the link properties east and west of G.698.2 reference points (Rs / Ss):
 - Ensure that both ends match **before** wavelength is lit-up
2. How it works for standard application codes:
 - When connected, Router and Optical Line System perform discovery procedures and exchange Application codes

Motivation (1)



Motivation (2)



(1) Produce modules



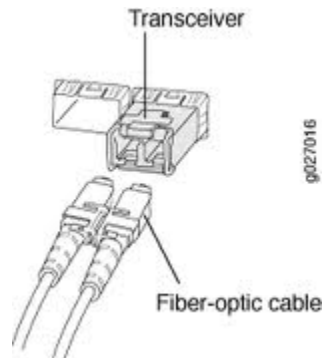
(2) Add standard application codes

(3) Add proprietary application Identifiers



(4) Deliver

(5) connect



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Which identifiers will work ???

(6) And now?



Input and Output power

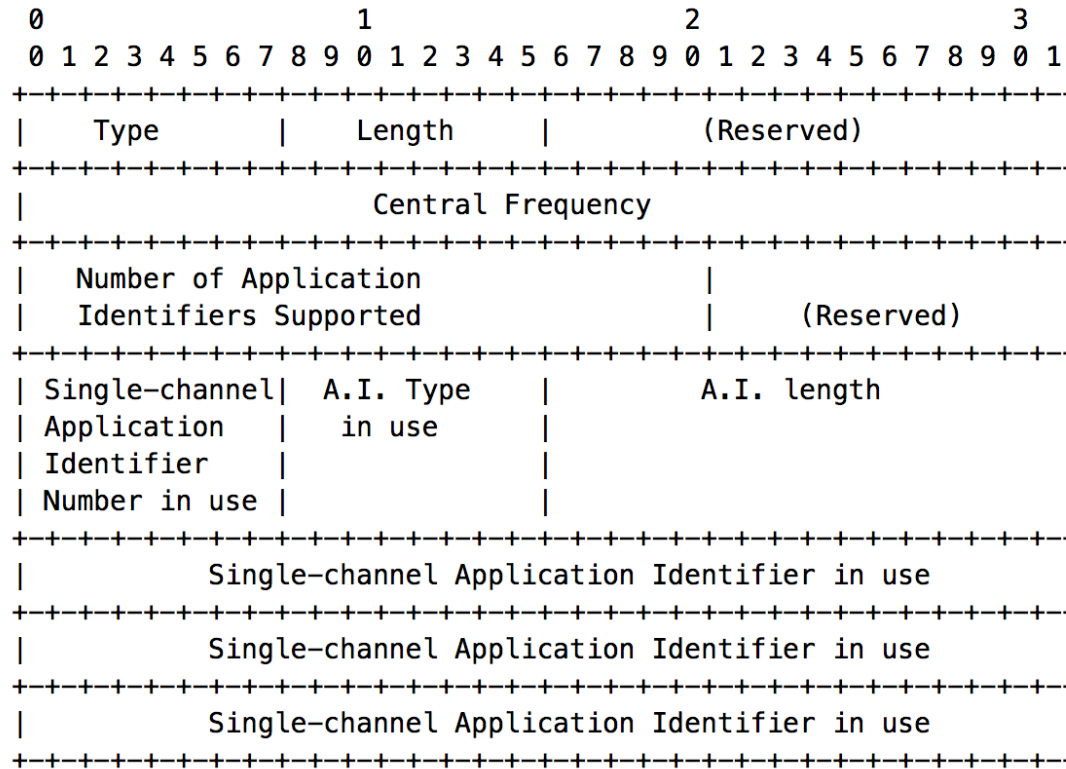
- Application Identifiers allow for a wide range of input/output power values
- Most DWDM Network Elements can monitor power
- Some can adjust power levels to a desired range
- Correlation of power levels across Ss and Rs interfaces required for Fault detection

Contents of the drafts

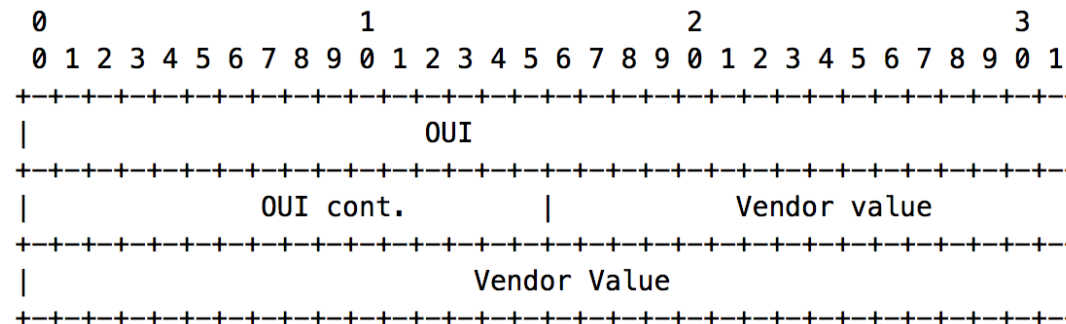
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- ITU-T G.698.2 and
- ITU-T G.694.1
- Central frequency (see G.694.1 Table 1)
- Single-channel application identifiers (see G.698.2)
- Number of Single-channel application identifiers Supported
- Current Laser Output power
- Current Laser Input power
- Vendor Specific Application Code

LMP TLV structure



A.I. Type
Vendor specific



Changes from last meeting

- **Modified:**

- draft-dharinigert-ccamp-g-698-2-Imp

- Comments from Honolulu

- Added the Vendor Specific application Code

- Added text to describe LMP usage

Next Steps

- Realign the Parameters to new ITU-T Rec.
- Keep the interactions to ITU-T alive to realign the draft to new Recommendation editions
- Add Flex Spectrum parameters / MIB
- Promote the draft to WG documents