Link Management Protocol Extensions for Grid Property Negotiation

draft-li-ccamp-grid-property-lmp-03.txt

Yao Li, Nanjing University

Guoying Zhang, CATR

Xihua Fu, ZTE

Ramon Casellas, CTTC

Yu Wang, CATR

IETF 89, London

Introduction

- This draft gives the extensions to LMP to negotiate link grid property between the adjacent DWDM nodes before the link is brought up.

- 01-version first presented in IETF83.

- 03 version updated the terminology and protocol extension to align with the framework and other flexgrid document.
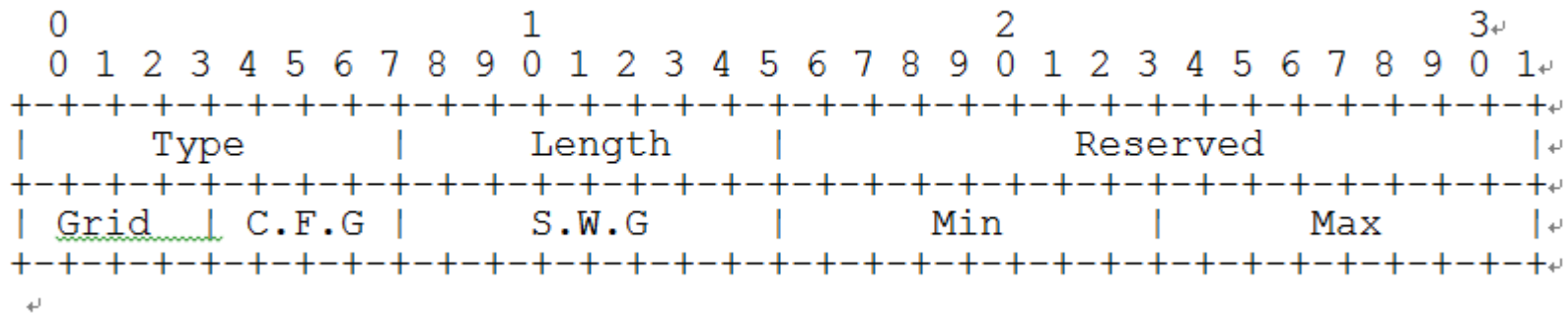
Requirements

- Interworking between fixed-grid DWDM and flexible-grid DWDM nodes.
- Two flexible-grid optical nodes may have different grid properties based on the filtering component characteristics, need to negotiate on the specific parameters .

LMP Negotiation Parameters	
Grid capability	flexible grid or fixed grid DWDM.
Central frequency granularity	a multiplier of 6.25 GHz.
Slot width granularity	indicates the slot width granularity , a multiplier of 12.5 GHz.
Slot width tuning range	two multipliers of 12.5GHz, each indicate the minimal and maximal slot width supported by a port respectively.

LMP Extensions

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|      Type         |       Length      |           Reserved          |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| Grid  | C.F.G |        S.W.G      |       Min       |       Max     |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Grid	
Reserved	0
DWDM	1
CWDM	2
Flexgrid	3
Future Use	4-15

C.F.G	
Reserved	0
100	1
50	2
25	3
12.5	4
6.25	5
Future Use	6-15

- C.W.G: positive integer value, which is the multiple number of 12.5 GHz.
- Min & Max: positive integer value, 0 for fixed grid. Will change to 16 bits based on Gabriele's comment and the label draft.

LinkSummary message exchange procedure is the same as described in RFC 4204.

Next Steps

- Solicit comments and feedbacks from the group.
- Request to be adopted as a WG draft.