New-old upstream wavelength plan

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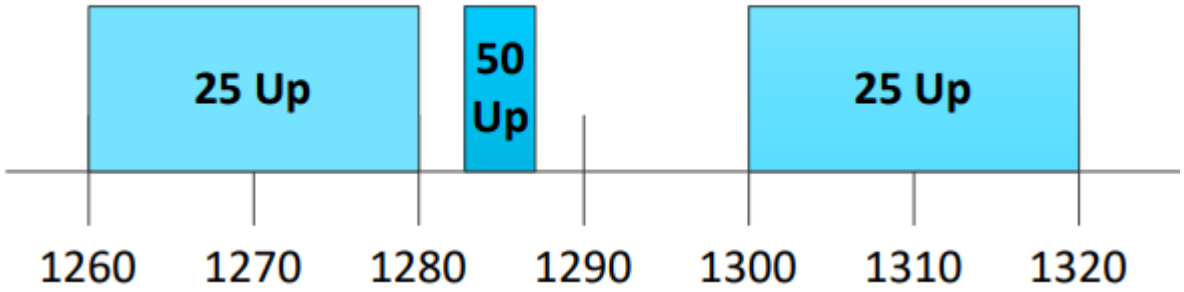
Supporters

Introduction

- The "Peacemaker" wavelength plan was proposed in kramer_3ca_3_0917.pdf (upstream shown):

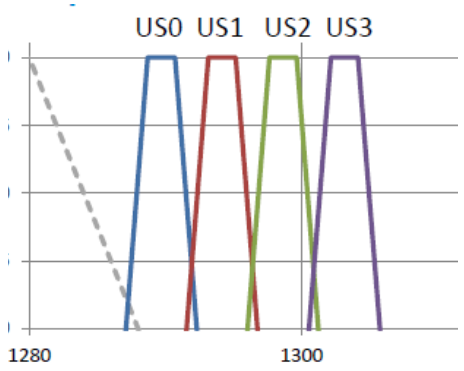


- Observation:
  - 50/50 EPON co-existence with 10G EPON is not supported
- Proposed herein is an upstream wavelength plan for 25G, 2x25G and 1x50G EPON that
  - supports full WDM co-existence with 10G EPON and
  - retains the Peacemaker idea of 100G EPON = 2x25G + 1x50G

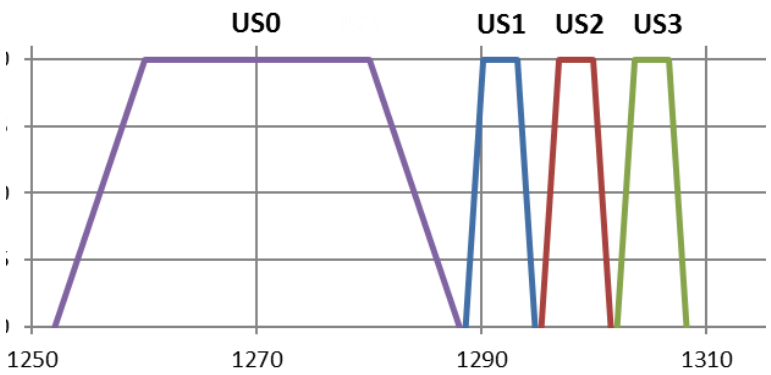
US1 for 2x25G EPON

- It was always the intention that US1 (the 2nd US channel in 2x25G EPON) would be around **1290 nm**:

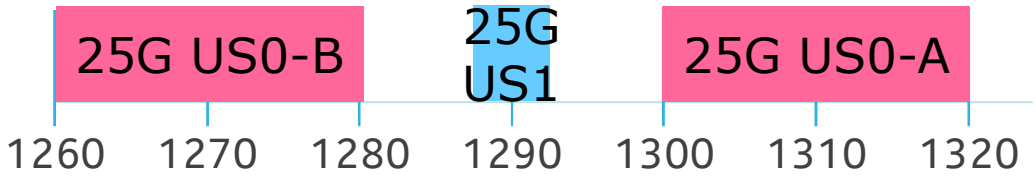
Plan A



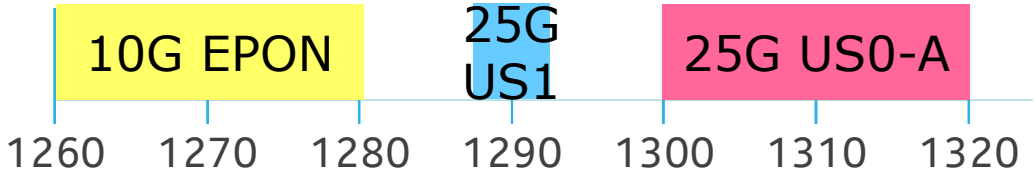
Plan B



- In July we selected a two-option wavelength plan for US0. However that does not need to change the plan for US1:



- And of course 2x25G EPON will still WDM co-exist with 10G EPON:



1x50G wavelength plan, upstream

Summary of harstead_3ca_2_0917, upstream:

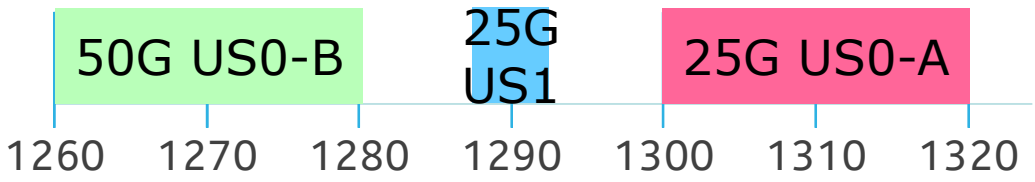
- If 25G option A is deployed, 1x50G option B will WDM co-exist with it

- If 25G option B is deployed, 1x50G option A will WDM co-exist with it

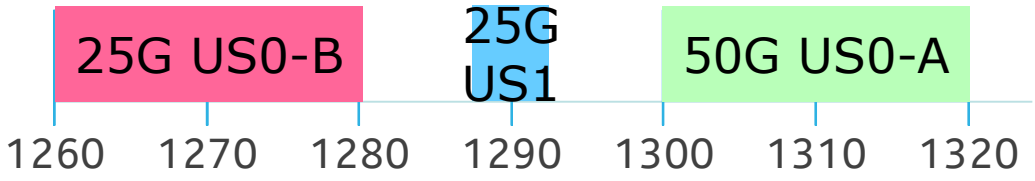
- 1x50G option A supports WDM co-existence with 10G EPON

Putting them together for 100G EPON

- Now we can replace former 4x25G plans with 2x25G + 1x50G
  - When 25G uses US0-A:



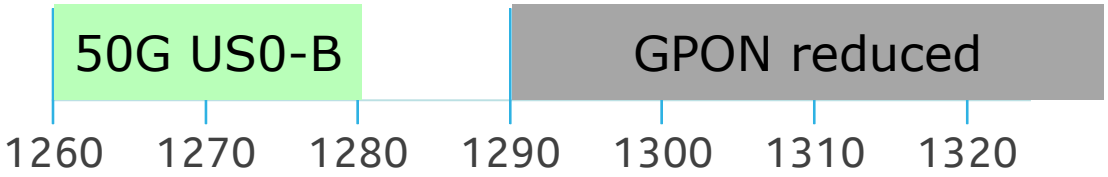
  - When 25G uses US0-B:



- We drop the requirement that 100G symmetrical EPON must co-exist with 10G EPON.

BTW, 1x50G co-existence with GPON

50G US0-B will WDM co-exist with GPON reduced:



Summary of co-existence

WDM co-existence for generations of 25/50/100G symmetrical EPON

	GPON	10G EPON	25G EPON	50G EPON (2x25G)	50G EPON (1x50G)
25G EPON	✓ <XOR>	✓			
50G EPON (2x25G)		✓	✓		
50G EPON (1x50G)	✓ <XOR>	✓	✓	✓	
100G EPON		✘	✓	✓	✓

802.3ca objective

Presumed future objective

Summary

An upstream wavelength plan is proposed that supports:

- the two-option upstream wavelength plan for 25G EPON, supporting WDM co-existence with 10G EPON xor GPON
- all TF objectives and presumed future objectives for WDM co-existence
- with the exception of 100G symmetrical EPON co-existence with 10G EPON.