Downstream Wavelength Range discussion review and Solution Proposal

Supporters*:

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* alphabetic order

Basic ideas

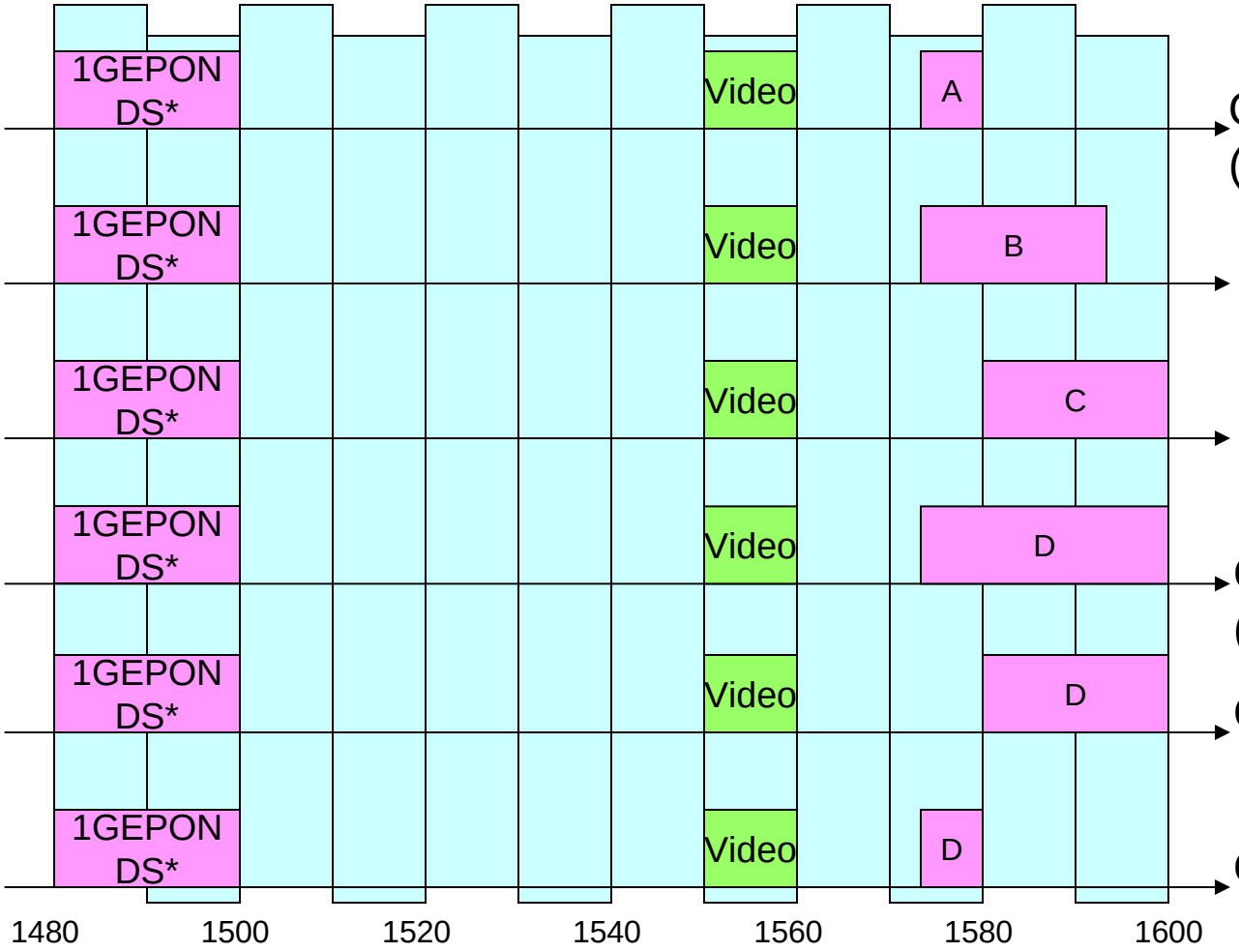
- Japanese public fiber network requirements:
  - downstream transmission wavelength shorter than 1580nm, due to use of OTDR;
  - utilization of class PR30 optics, due to increased Channel Insertion Loss

  PR30 must employ 1574 – 1580nm band
- PR10 and PR20 classes could benefit from 20nm of pass band - uncooled transmitters are technically feasible for these classes
- How to widen the band in the most compatible way?

Other concepts

- It is good if:
  - the selected downstream band coincides with existing optical band plans
    - most importantly, the CWDM wavelength grid
  - the same receiver specification can operate with both transmitter specifications
    - the receover sensitivity band incorporates both transmission bands (for PR30 and PR10/PR20)
    - a ‘universal Rx’ can be thus created

Wavelength Plans



Option A: 1574 to 1580nm (PR30 must use this band)

Option B: 1574 to 1594nm (potential superset)

Option C: 1580 to 1600nm (Alignment with CWDM)

Option D: 1574 to 1600nm (Superset and CWDM!)

Option D: PR10-20 Tx

Option D: PR30 Tx

* - OLT Tx and ONU Rx support the same wavelength band

Proposal

- Specify the downstream 10G EPON wavelength band to be 1574 to 1600 nm.
- PR10 and PR20 Tx: 1580 to 1600nm
- PR30 Tx: 1574 to 1580nm
- ONU receivers for all classes: 1574 to 1600nm

Straw Poll 7

I prefer the downstream wavelength band for PR-30:

_34_ Option A: 1574 – 1580nm
__0_ Option B: 1574 – 1594nm
__0_ Option C: 1580 – 1600nm
__1_ Option D: 1574 – 1600nm
__8_ Option E: 1545 – 1565nm
__2_ No opinion / Don’t care
__0_ Other than options A, B, C, D, E

Total head count: _49_

Straw Poll 8

I prefer the downstream wavelength band for PR-10 and PR-20:

__1_ Option A: 1574 – 1580nm
__0_ Option B: 1574 – 1594nm
__0_ Option C: 1580 – 1600nm
_28_ Option D: 1574 – 1600nm
_11_ Option E: 1545 – 1565nm
__2_ No opinion / Don’t care
__0_ Other than options A, B, C, D, E

Total head count: _49_

Motion 7

The wavelength range for the OLT transmitter and ONU receiver shall span from 1574 to 1600 nm for all power classes (PR10, PR20 and PR30). The wavelength range for the OLT transmitter for PR30 class spans between 1574 and 1580 nm. The wavelength range for the OLT transmitter for PR10/PR20 classes spans between 1580 and 1600 nm (recommended range) and may optionally cover the whole 1574 – 1600 nm band.

Moved by: Marek Hajduczenia
Seconded by: Frank Effenberger

___ Yes
___ No
___ Abstain

Total head count: ___

Motion Passes / Fails

Motion 7a

Split motion 7 into two motions, the first to read:

Motion 7-1: “The wavelength range for the OLT transmitter and ONU receiver shall span from 1574 to 1580 nm for power class PR30.”

Motion 7-2: “The wavelength range for the OLT transmitter and ONU receiver shall span from 1574 to 1600 nm for all power classes (PR10, PR20 and PR30). The wavelength range for the OLT transmitter for PR30 class spans between 1574 and 1580 nm. The wavelength range for the OLT transmitter for PR10/PR20 classes spans between 1580 and 1600 nm (recommended range) and may optionally cover the whole 1574 – 1600 nm band.”

Moved by: Lowell Lamb

Seconded by: Duane Remein

Procedural motion (50%)

_27_ Yes
_10_ No
_09_ Abstain

Total head count: ___

Motion Passes

Motion 9

The wavelength range for the OLT transmitter and ONU receiver shall span from 1574 to 1580 nm for power class PR30.

Moved by: Frank Effenberger
Seconded by: Marek Hajduczenia
Technical Motion (75%)

_40_ Yes
__0_ No
__2_ Abstain

Total head count: ___

Motion Passes

Motion 10

The wavelength range for the OLT transmitter and ONU receiver shall span from 1580 to 1600 nm for power class PR10 and PR20.

Moved by: Frank Effenberger
Seconded by: Marek Hajduczenia

Technical motion (75%)

_17_ Yes
_23_ No
__6_ Abstain

Total head count: ___

Motion Fails

Motion 10a

Table Motion 10.

Moved by:
Seconded by:

Procedural motion (50%)

_20_ Yes
_22_ No
__3_ Abstain

Total head count: ___

Motion Fails

Motion 11

The wavelength range for the OLT transmitter and ONU receiver shall span from 1545 to 1565 nm for power class PR10 and PR20.

Moved by: Duane Remein
Seconded by: DongSoo Lee

Technical motion (75%)

_17_ Yes
_22_ No
__5_ Abstain

Total head count: _48_

Motion Fails