C-band Wavelength Plan for 10G EPON downstream

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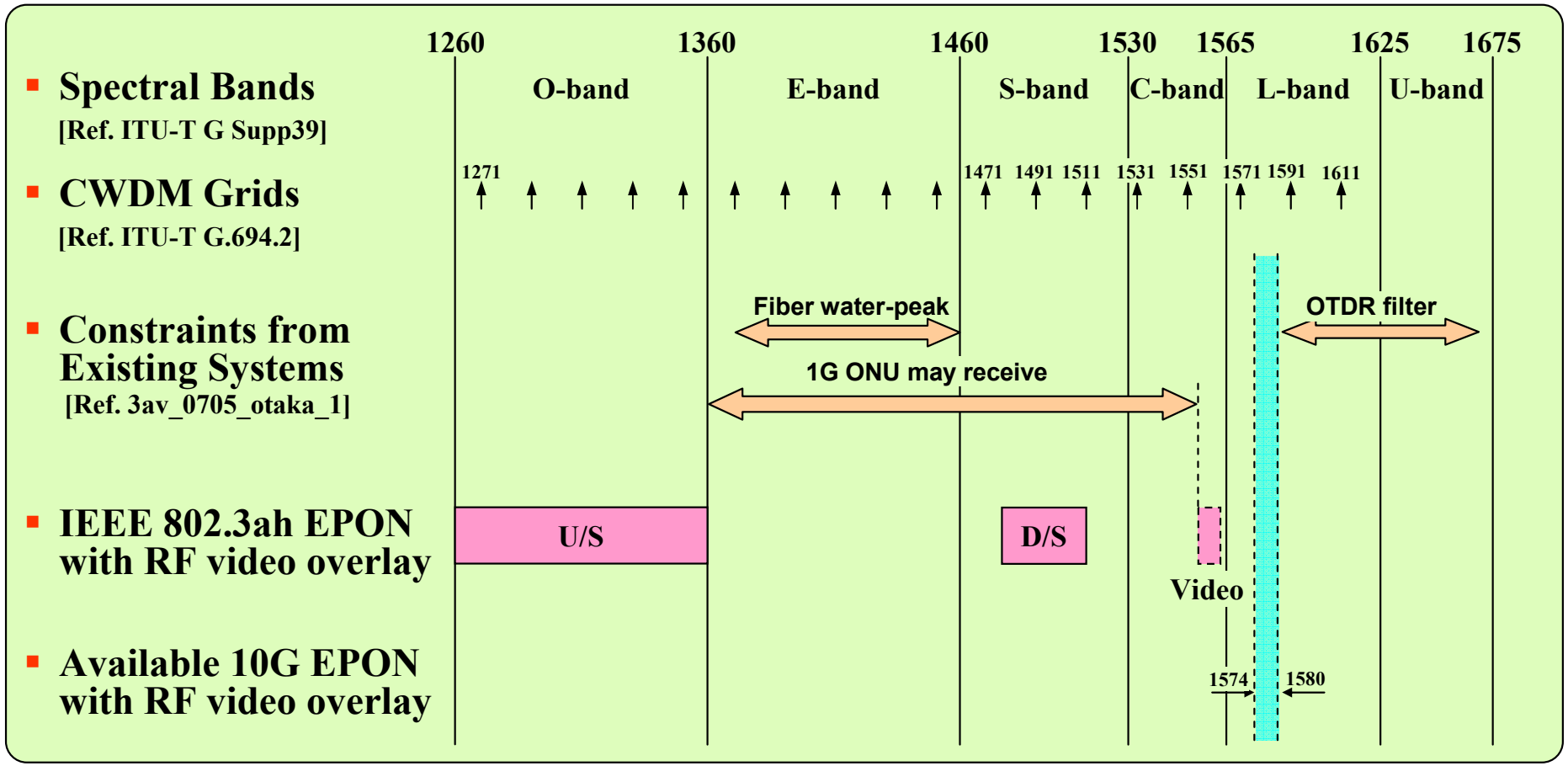
Current Version of Wavelength Plan

- Available wavelength for downstream seems only narrow part of L-band (1574 nm ~ 1580 nm) due to coexistence with RF video overlay and use of OTDR
  - 6 nm narrow band plan requires strictly stable laser source



C-band for 10G downstream

- C-band is widely available
  - Most 10G applications use C-band (1530 nm ~ 1565 nm)
    - IEEE 802.3ae, G.691, G.693, G.959.1, GR-253-CORE
  - Many vendors provide C-band 10G EML
    - Easy to use, low cost, reliable performance, etc

- Restriction of adopting C-band is caused only by existing RF video overlay
  - Strong requirement of coexistence with RF video overlay still exists
  - ***However,*** in GREENFIELD deployment, RF video overlay would be indifferent "option" for video delivery
  - In addition, 10G downstream can provide enough capacity to accommodate all the RF video channels

How to Use C-band

- If it is possible, proposal for C-band wavelength plan would be as follows;
  - 1545 nm ~ 1565 nm for Greenfield
  - 1574 nm ~ 1580 nm for coexistence with RF video overlay
- However, we need to follow IEEE rule “one solution for one problem”. And the “problem” is each PMD.
- Thus the proposal is different wavelength for different PMD;
  - 1545 nm ~ 1565 nm for PR10-D and PR20-D
  - 1574 nm ~ 1580 nm for PR30-D
  - And this requires a note: 1545 nm ~ 1565 nm band could be used for Greenfield deployment where RF video overlay is not required.
- Although this plan requires two kinds of laser sources, it is not much problem because C-band laser source is already matured