Wavelength Plan Z

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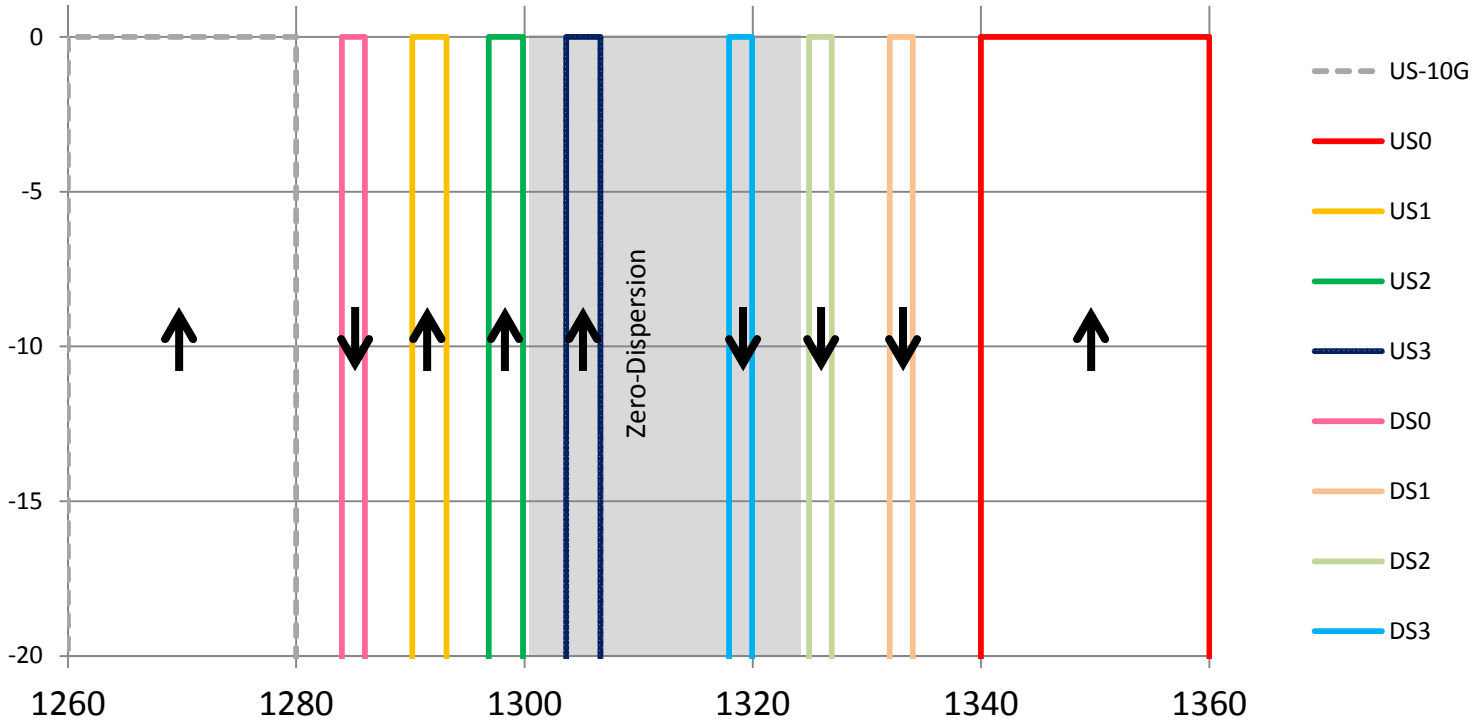
Motivations

- Plan A's attraction is its coexistence with 10GE-PON systems via WDM coexistence
  - But all the upstream channels are narrow
- Plan B's attraction is providing a 20nm wide band for the first upstream 25G channel
  - But coexistence with 10GE-PON is TDM style
- Neither plan gives us everything we want
- In the interest of overturning every stone, we ask the question: Is there a plan that has a wide first channel and permits WDM coexistence?

Plan Z – the last plan you'll ever need



	Center freq	Center WL	PB width
US0	222.07	1350.00	20
US1	232.10	1291.65	3
US2	230.90	1298.36	3
US3	229.70	1305.15	3

	Center freq	Center WL	PB width
DS0	233.30	1285.01	2
DS1	224.90	1333.00	2
DS2	226.10	1325.93	2
DS3	227.30	1318.93	2

Discussion

- Plan Z does achieve the stated goal
  - WDM coexistence with 10GE-PON (and DFB-based GE-PON and G-PON also)
  - A wide first 25G channel
- Alas, that first channel is at 1350nm
  - Ordinary directly modulated lasers will suffer high dispersion penalty
  - DML's with lower chirp, and operated at low ER, might be able to work in this regime
  - Or, high power uncooled EMLs might be possible
  - Or, reduced bandwidth transmission (EDB) could be used
- These alternatives should be studied