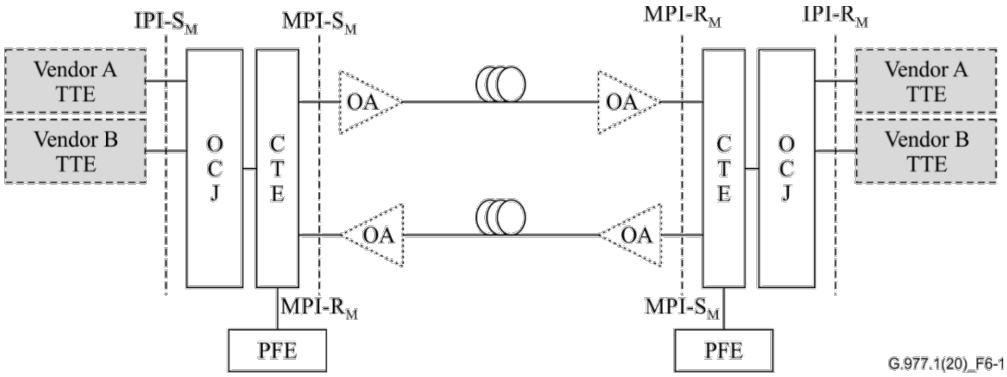
G.977.1 Transverse compatible dense wavelength division multiplexing applications for repeatered optical fibre submarine cable systems

- Physical layer specifications for dense wavelength division multiplexing (DWDM) applications on dispersion-unmanaged submarine cable systems.
- Enables multiple vendors to design DWDM transmission equipment for submarine fibre links



Reference configuration for a DWDM submarine cable system

Table A.3 – Interoperable cable budget

		SNR_{ASE} dB	GSNR dB
1	Design (submarine portion)		
2.1	Guided acousto-optic wave Brillouin scattering (GAWBS)		
2.2	Impairment due to ROADM (submarine portion)		
2.3	Impairment due to terrestrial extension or unrepeatered branch		
2.4	Generalized droop		
3	**Nominal (system)**		
4	Manufacturing margin		
5	**Flat launch average system**		
6	Pre-emphasis margin		
7	**BOL average system** (under agreed equalization conditions)		
8	BOL worst case		
9	Aging and repairs		
10	**EOL average system** (under agreed equalization conditions)		
11	EOL worst case		

Interoperable submarine cable budget for operators and transmission equipment vendors

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This Recommendation specifies submarine cable systems architecture, operational functions, and wet-plant specification guidelines for operators and transmission technology vendors.

Architectural references describe the various wet-plant and dry-plant interfaces of a submarine cable system. Operational functions of each sub-system and their characteristics are described such as Optical Coupling Junctions (OCJ), which describes the interface for multiple terminal technology equipment (TTE) vendors to couple into and out of.

Wet-plant specifications are defined with both simulation and/or measurement methodologies. These specifications build the guidelines for the cable system's performance through an interoperable cable budget.

The cable budget details the additions of lumped and distributed noise impairments within the system to ultimately provide an estimated beginning of life (BOL) value for SNR that takes into account both linear and nonlinear contributions.

The calculated SNRs are crucial elements for TTE vendors to estimate transmission capacity on dispersion-unmanaged submarine cable systems.