Optical networking

TF-NGN, Tromsø

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Outline

- Specification of darkfiber/lambda services…
- Polish testing...

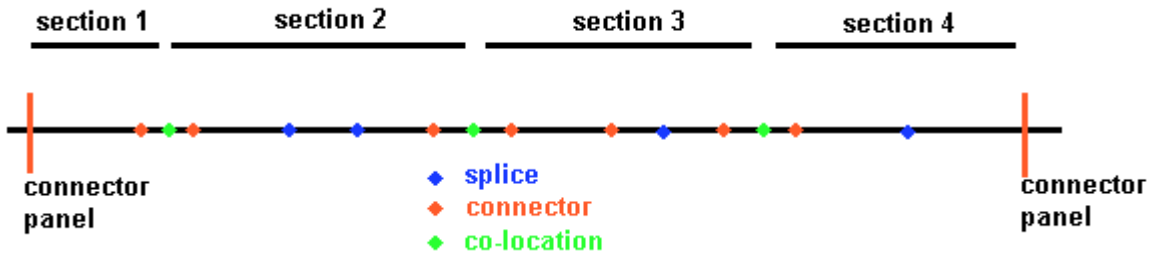
Specification of darkfiber/lambda services

- Darkfiber service…
- Managed fiber/lambda service...

Darkfiber service

- No equipment in the path
- Possibilities for co-location
- Sections of darkfiber…
- Specification of darkfiber...

Sections of darkfiber



Specification of darkfiber

- Define which frequencies (black&white or color?)
- Connector panel

  Minimal SC/PC connectors
- Type of fiber

  G.652/G.655, brand, mode, etc.
- Length of sections
- Optical characteristics per section...

Optical characteristics per section Part I

- Attenuation [dB]
  can be compensated
- Optical Return Loss [dB]
- Chromatic Dispersion [ps/nm]
  can be compensated
- Polarization Mode Dispersion [ps]
  can't be compensated

Optical characteristics per section
Part II

- Expected and actually measured
- Expected deterioration
- Available test tools

  ODTR, LTS, CD, PMD
- Expected MTBF and MTTR
- Routing of fibers

Managed fiber/lambda service

- Define which frequencies (black&white or color/spacing)
- Define bitrate
- Connector panel
  - Minimal SC/PC connectors
- Service specifications...

Service specifications
Part I

- Min. and max. transmitter power [dBm]
- Receiver saturation power [dBm]
- Min. receiver sensitivity power [dBm]
- Optical Return Loss [dB]
- Chromatic [ps/nm] and Polarisation Mode [ps] Dispersion

Service specifications
Part II

- Management interface
- Expected deterioration
- Crosstalk between colors
- BER
- MTBF and MTTR
- Path diversity
- Available test equipment

  ODTR, LTS, CD, PMD

Glosary

APC	Angled Physical Contact
CD	Chromatic Dispersion
BER	Bit Error Rate
LTS	Loss Test Set
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
ODTR	Optical Time-Domain Reflectometer
PC	Physical Contact
PMD	Polarisation Mode Dispersion