4 Fiber VSR OC-192

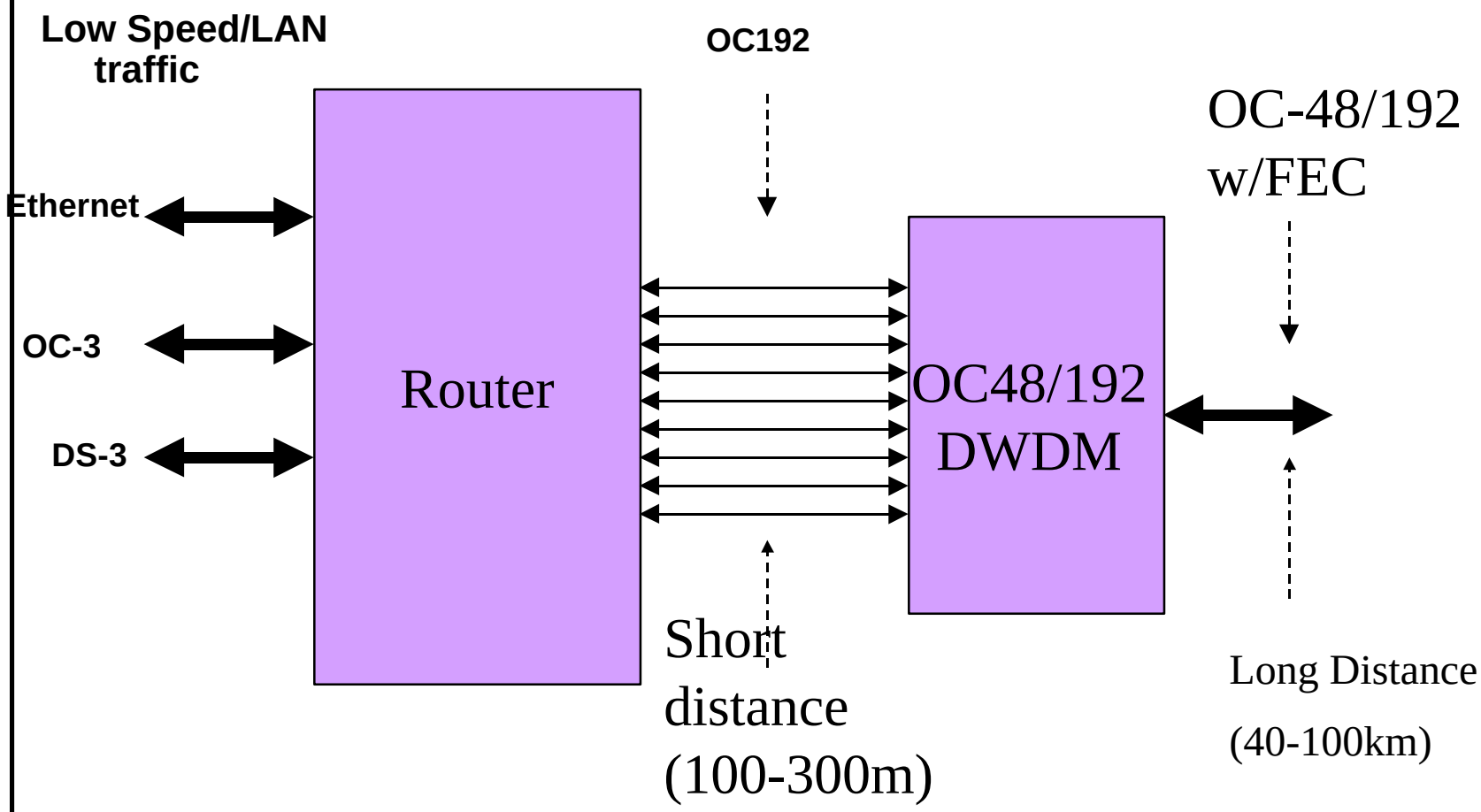
- Contributors:
  - AMCC
  - Nortel
  - Mitel
  - Avici
  - Network Elements
  - Alvesta

AMCC

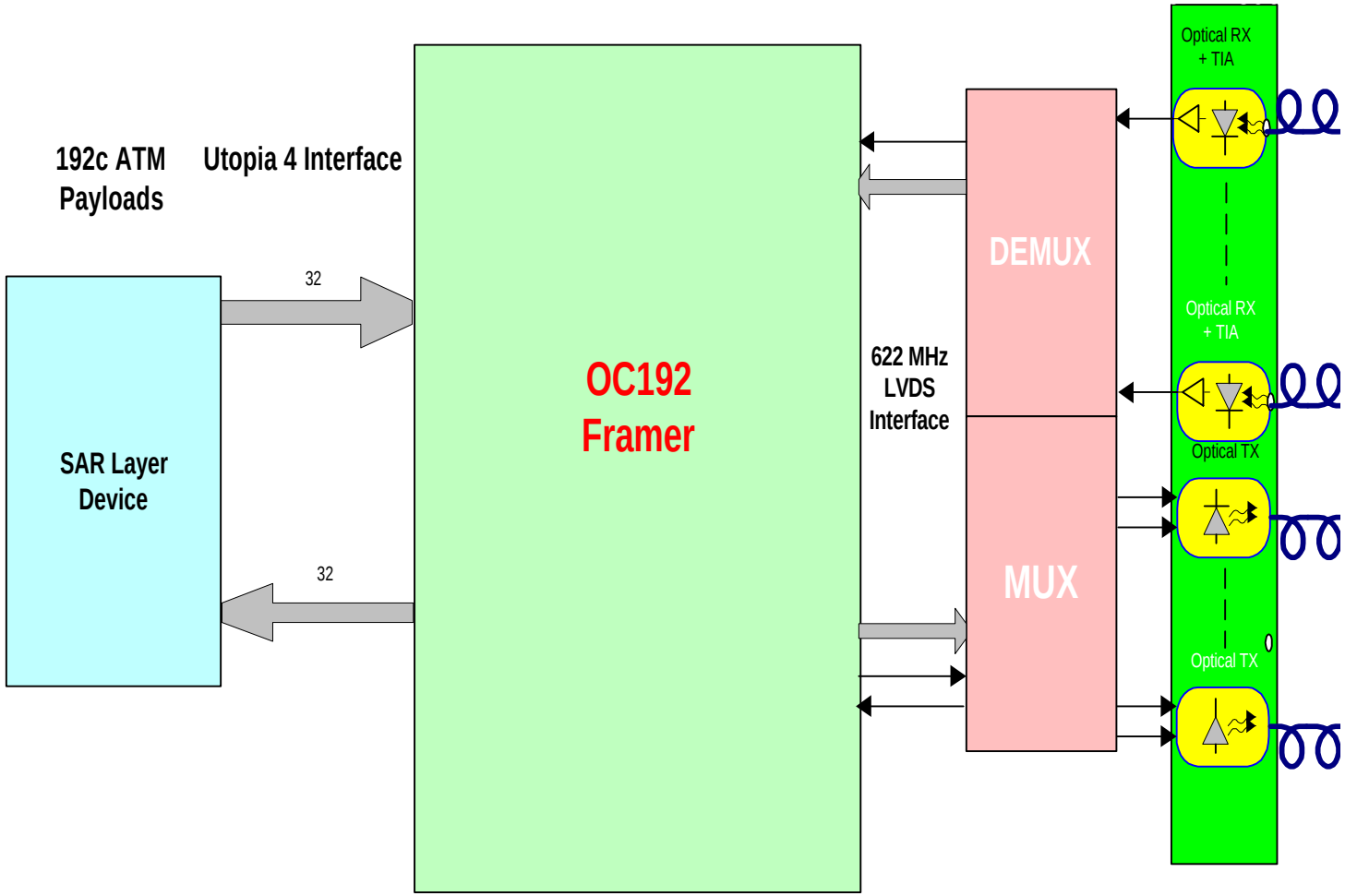
4x2.5 Gbps Parallel Fiber

- 2.5 Gbps Parallel fibre is being used for:
  - Proprietary serial backplanes
    - Digital crossconnect backplanes
    - DWDM/core switch chassis interconnect
  - Infiniband

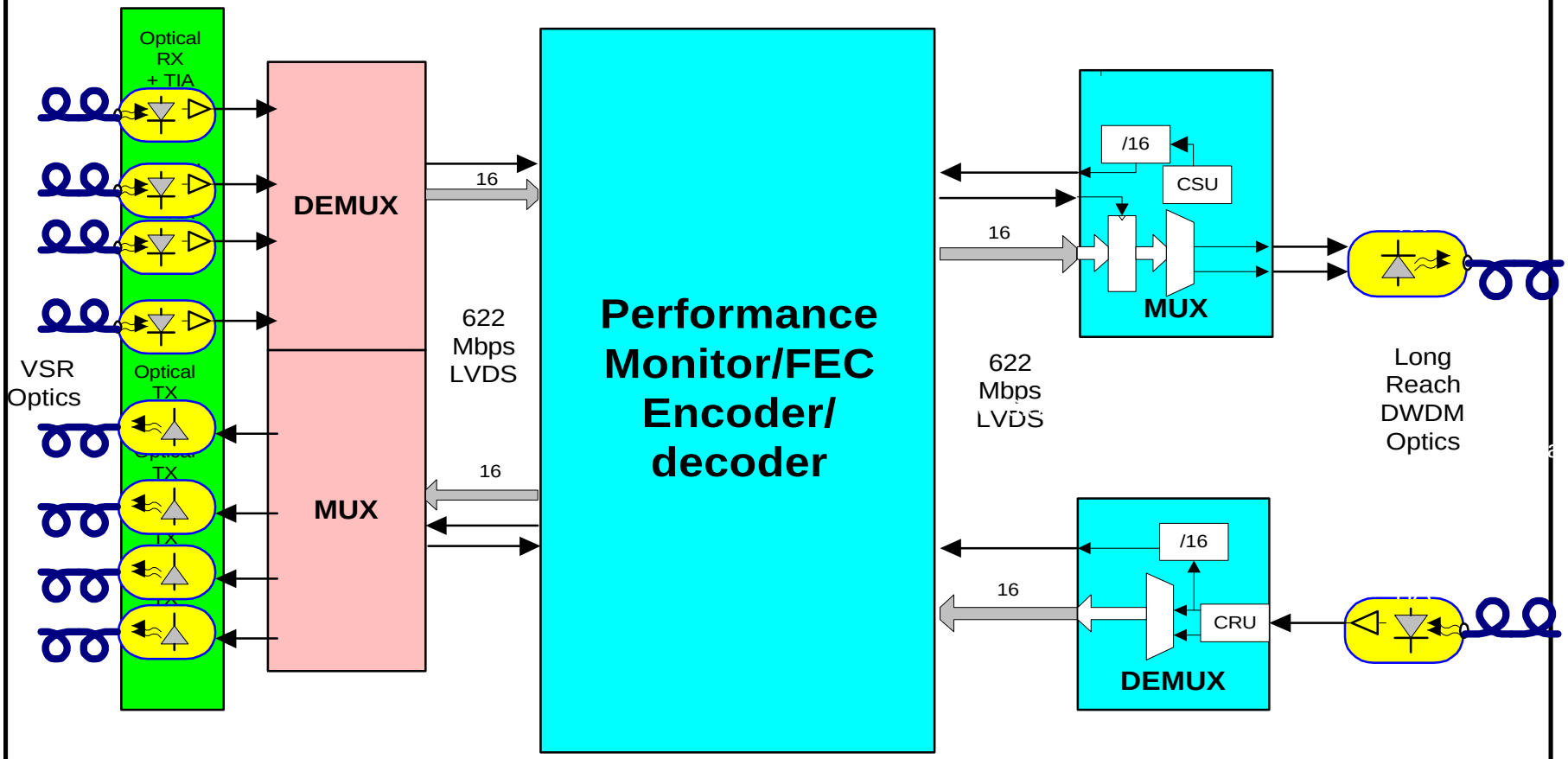
DWDM on the edge



Very short reach OC-192C Router Port



OC-192 VSR Transponder



Very Short Reach OC192 Goals

Show total solution availability in Q2 2000

Parallel VCSEL based optical modules

-Available in June

Quad SERDES device

-5 chip solution available in June, Single chip in Oct.

Generate Reliability estimates for parallel VCSEL arrays

-Done at March meeting

Provide systems architecture for robust transmission of OC192 payloads across four fibers

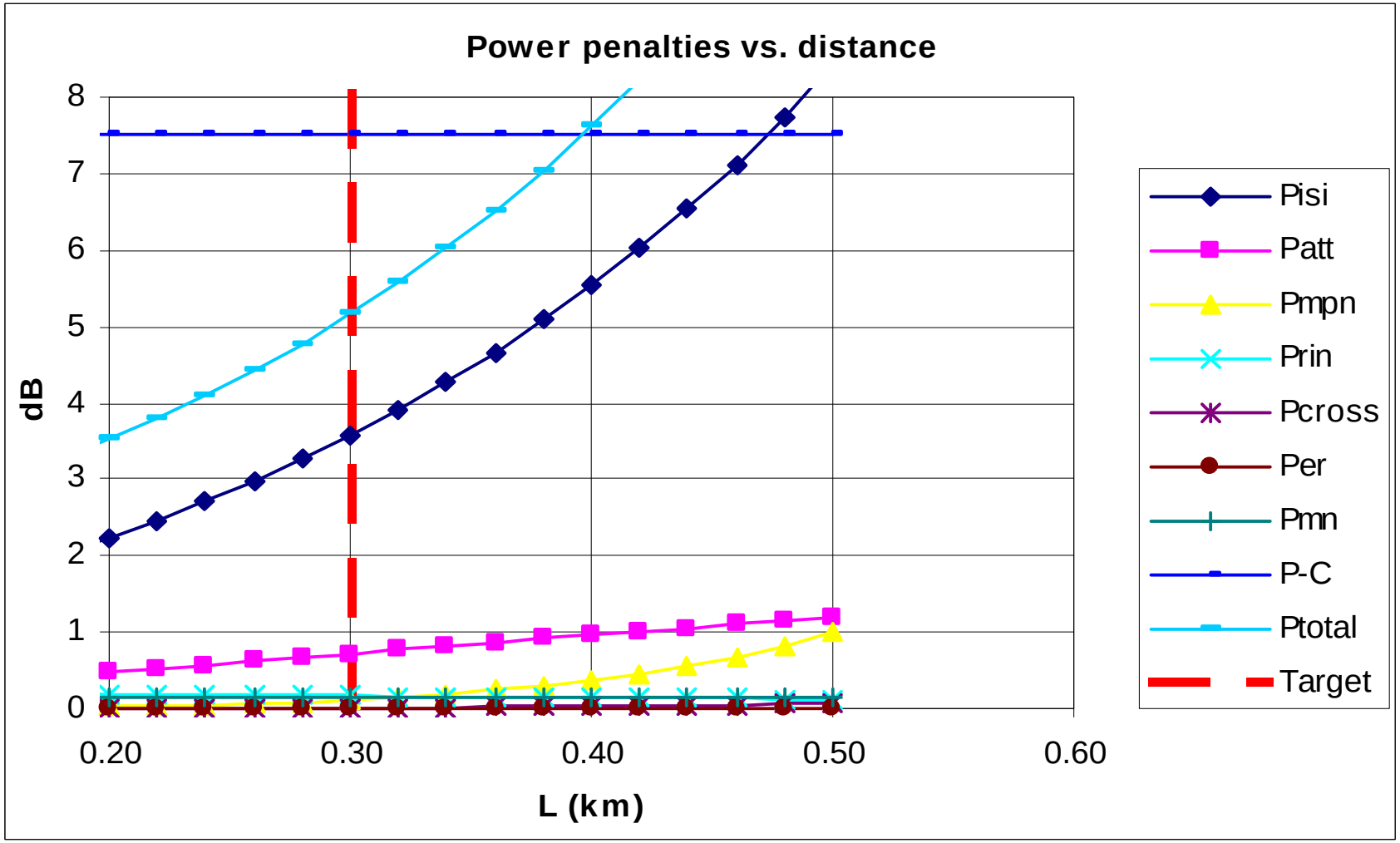
-See 4 fiber white paper

Show compliance with OIF recommended 16 bit LVDS Phy layer interface.

-See AMCC Ganges/S3091/92 specifications

AMCC

4 fiber VSR OC-192 fiber link budget.



AMCC

4 fiber VSR OC-192 fiber link budget.

(oif2000.076) 4 fiber VSR OC-192 fiber link budget. Modifications of Spreadsheet by													Case:	850nm	50MMF
Input=	**Bold**							Target reach	**0.30**	km					
		BWm(MHz*km)=	**500**					L_start=	**0.1**	km					
Uc(nm)=	**850**	So(ps/nm^2*km)=	**0.11**					L_inc=	0.02	km					
Uw(nm)=	**0.85**	Uo(nm)=	**1320**						C1=	**480**	ns.MHz				
Spec ER=	**6**	dB	Atten=	**2.4**	dB/km at 850 nm				Q=	**7.04**					
Ts(20-80)=	**140**	ps	Rate=	**2,500**	MBd	TP4 Eye Opening=				100	ps				
RIN=	**-116**	dB/Hz	_BW=	**1,500**	MHz	DCD_DJ(ps)=				**30**					
MPN, k=	**0.8**	Power Budget P (dB)=		**9**	Min Launch Pwr(dBm)=					**-8.0**					
MN (dB)=	**0.15**	Connections C (dB)		**1.5**	Test Source ER (dB)=					**6**					
				RMS Baseline wander S.D.=						**0**	fraction of 1/2 eye				

4 Fiber 10 Gbps Ethernet summary

Fastest Deployment of 10 GBE due to compliance with OIF specs. (WAN Phy will be the first deployment of 10GBE)

Leverages large existing optical backplane market

Best solution when looking at cost/performance/ compatibility/ time to market

- **Serial solutions will eventually become the best solution (2yrs?)**

Parallel VCSEL based solutions (WDM or parallel fiber) provide a growth path to next generation Ethernet (40/100 Gbps)

Optical Modules will be available from multiple vendors (3-7)