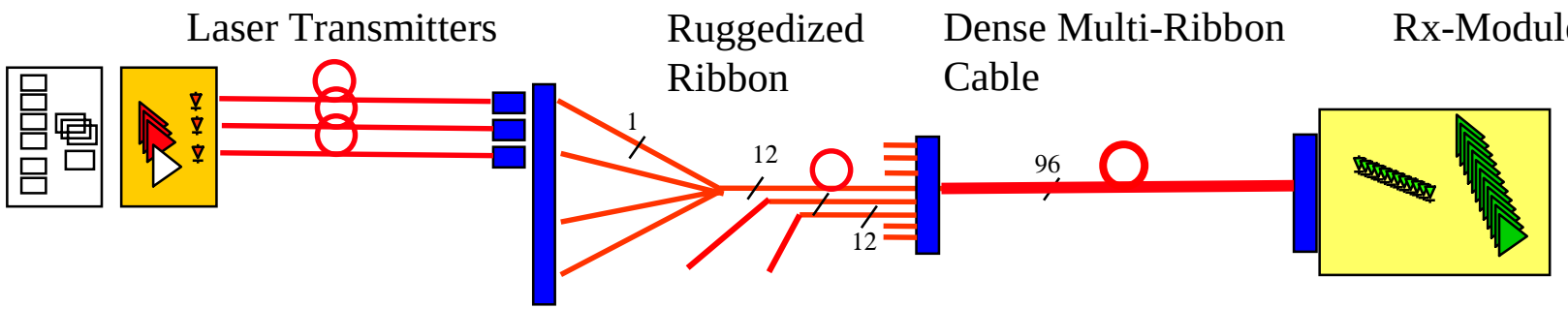
Quality Assurance

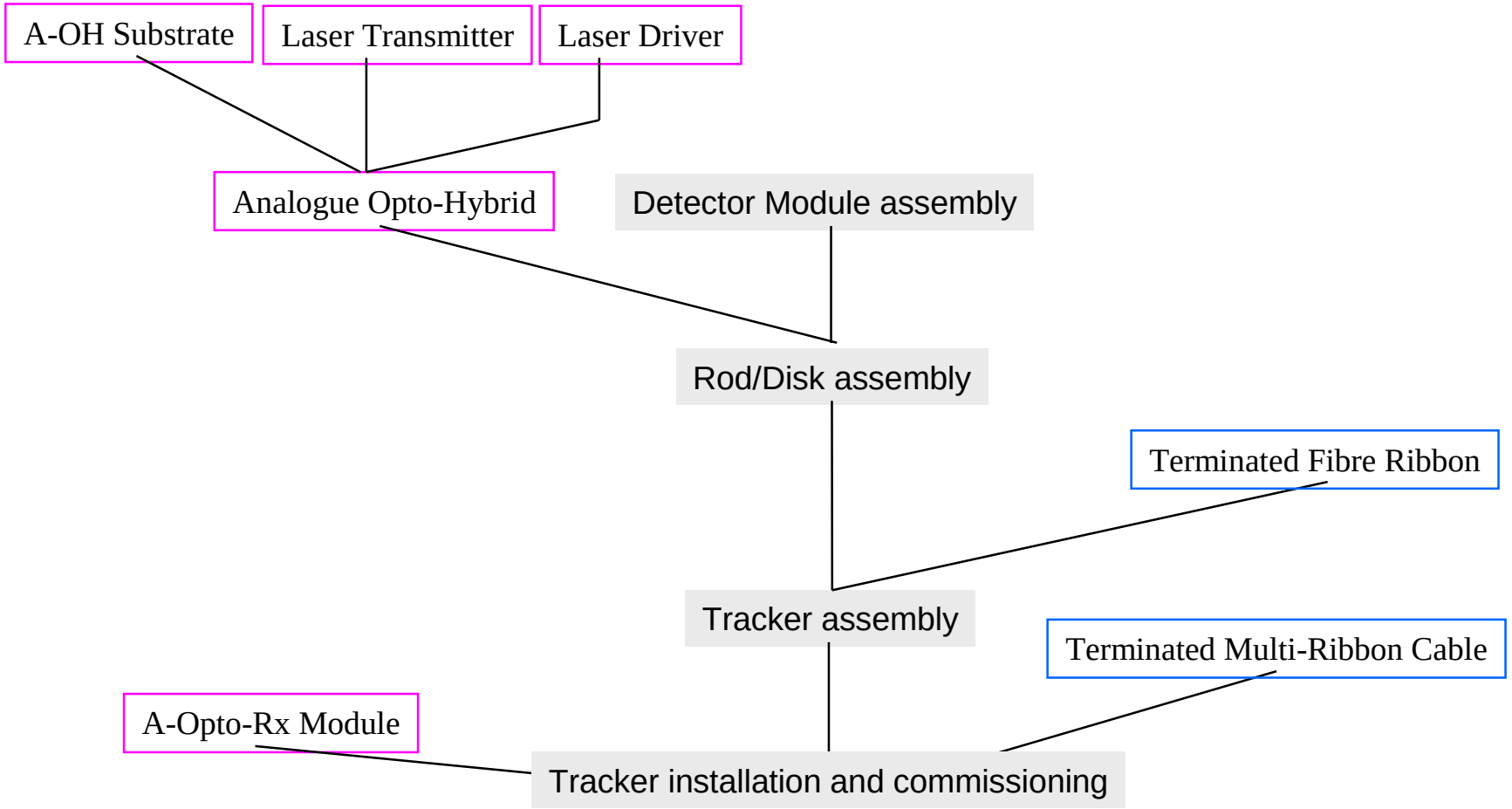
- Project Breakdown
- Specifications
- QA Procedures
- Laser Safety

Components and Assemblies

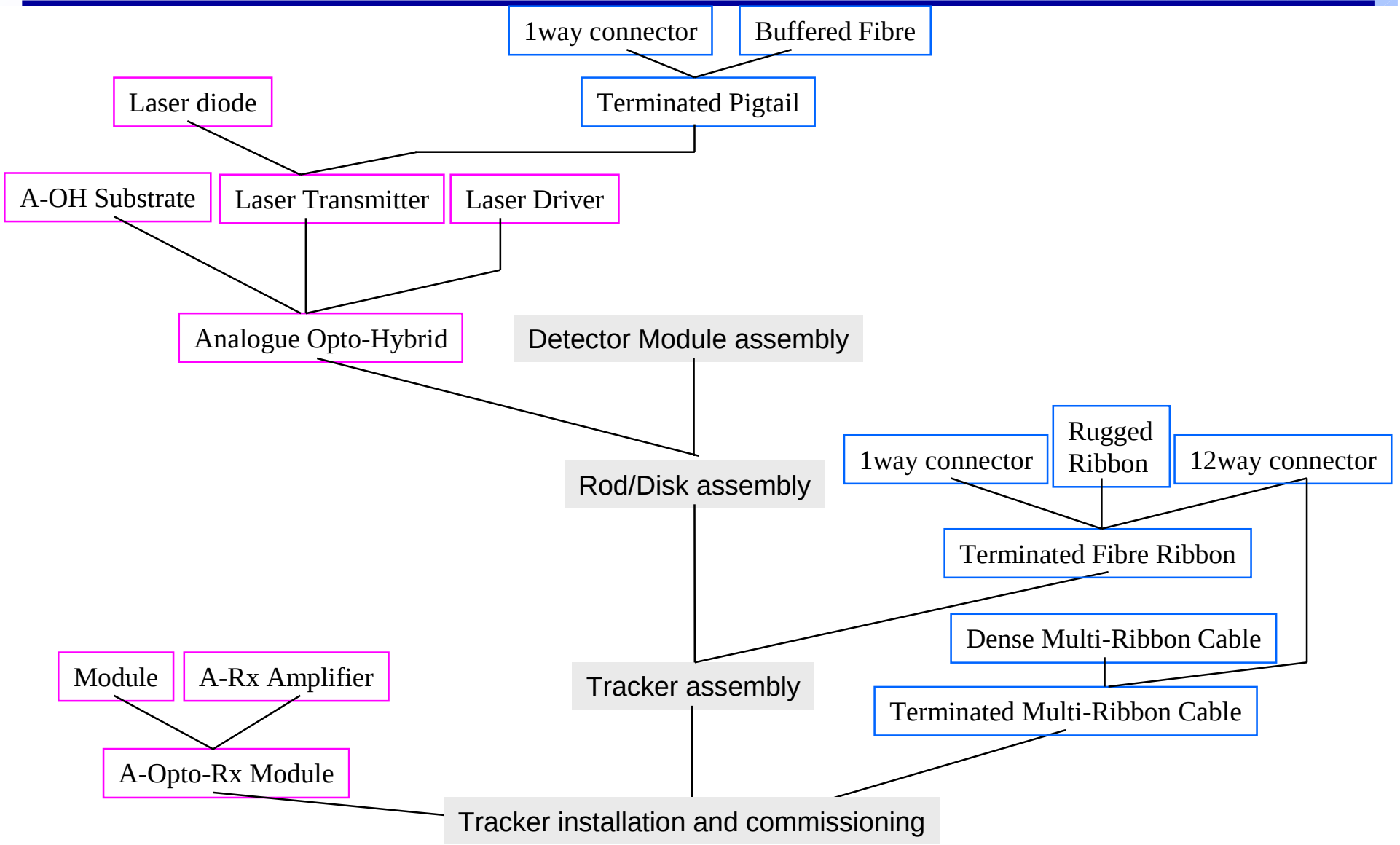


Component ⇒	Laser diode chip	SM buffered fibre	12-way rugged. ribbon	96-way multi-rib. cable	1-way connect.	12-way connect.	Pin diode chip	Rx ASIC
Assembly ⇓								
Laser Transmitter	♦	♦			♦			
Terminated Fibre Ribbon			**1x♦**		**12x♦**	**1x♦**		
Terminated Multi-Ribbon Cable				♦		**16x♦**		
A-Rx-Module						♦	**12x♦ (array)**	♦

Assembly Flow (1)



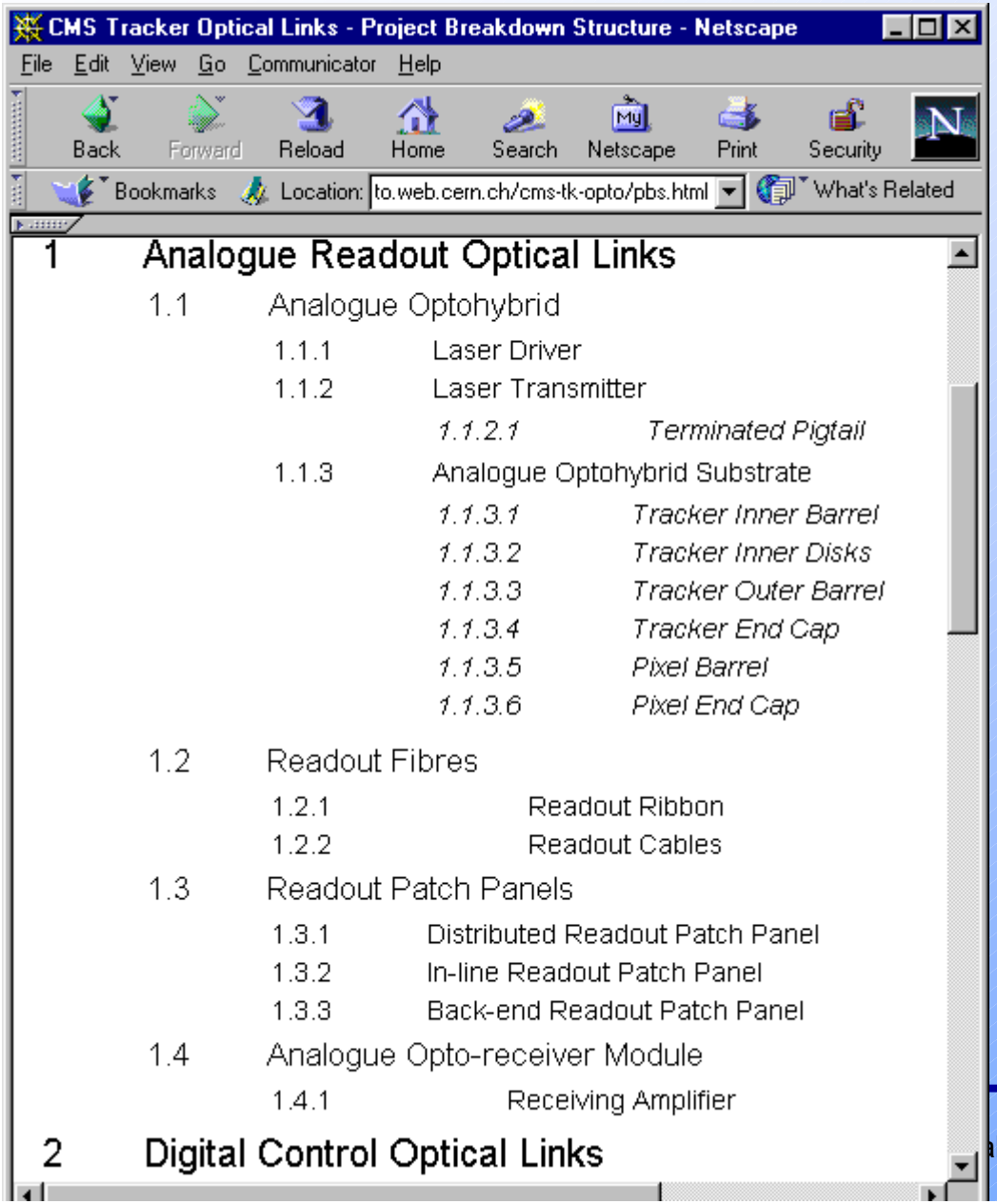
Assembly Flow (2)



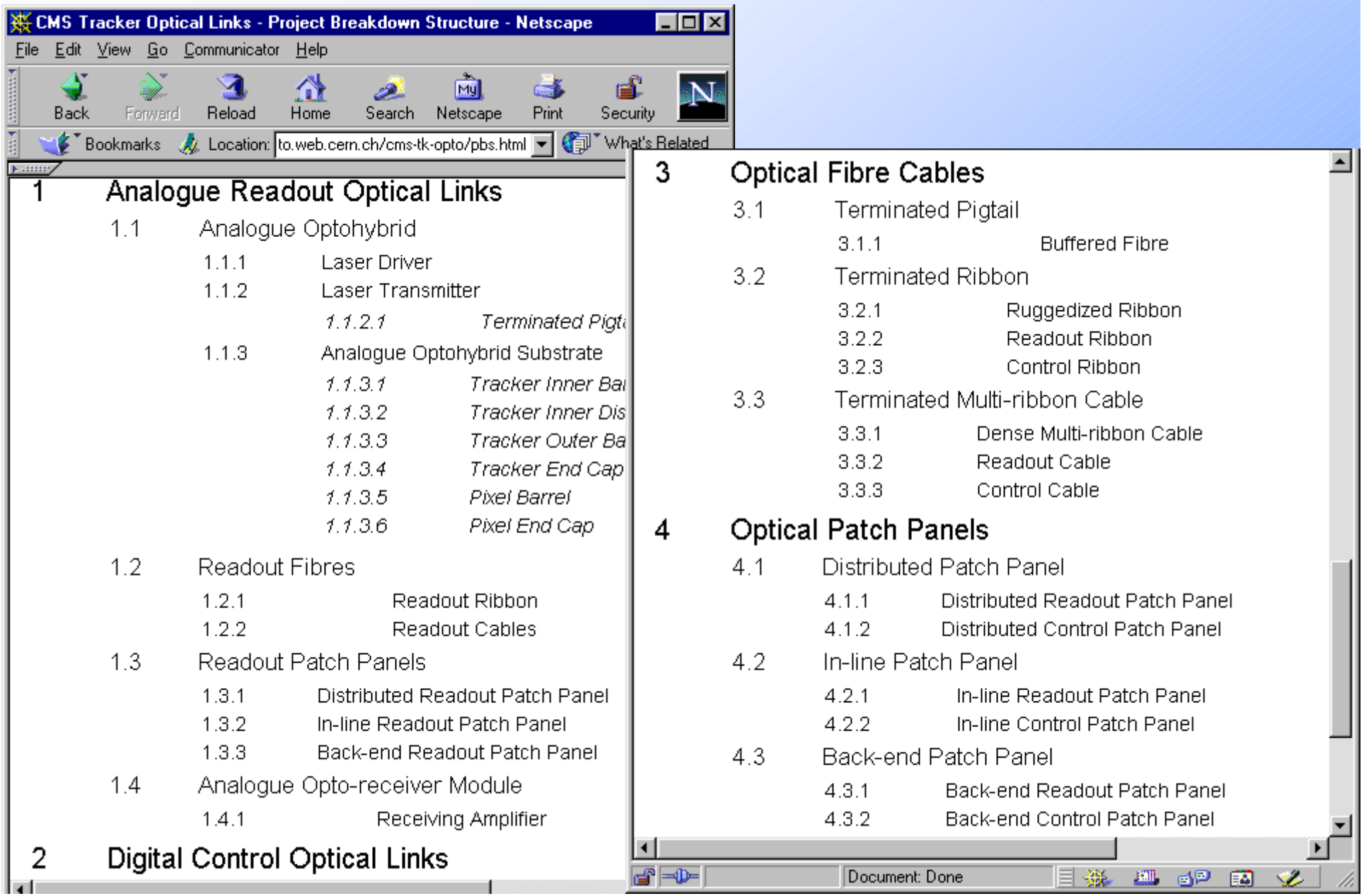
Specifications

Analogue Readout	
Part 1	Analogue Readout System
Part 2	Analogue Opto-Hybrid
	2.1 Laser Driver 2.2 Laser Transmitter 2.2.1 *Terminated Pigtail* 2.2.1.1 *Buffered Fibre* 2.3 Analogue Optohybrid Substrate 2.3.1 *Tracker Inner Barrel* 2.3.2 *Tracker Inner Disks* 2.3.3 *Tracker Outer Barrel* 2.3.4 *Tracker End Cap* 2.3.5 *Pixel Barrel* 2.3.6 *Pixel End Cap*
Part 3	Terminated Fibre Ribbon
	3.1 Ruggedized Ribbon
Part 4	Terminated Multi-Ribbon Cable
	4.1 Dense Multi-Ribbon Cable
Part 5	Analogue Opto-Receiver Module
	5.1 Receiving Amplifier
Part 6	Distributed Patch Panel
Part 7	In-line Patch Panel
Part 8	Back-end Patch Panel

EDMS Project Breakdown



EDMS Project Breakdown



Quantities

	Total Quantity	Including Contingency			
Component	Quantity	spares	Assembly yield	Dark fibre	Excess length
Buffered Fibre	50 km	10%	90% (connector assembly)	N/A	10%
Terminated Pigtail	50000	10%	100%	N/A	N/A
Laser Transmitter	50000	10%	90% (opto-hybrid assembly)	N/A	N/A
Pin Diode Receiver	500	10%	90% (opto-hybrid assembly)	N/A	N/A
Laser Driver	19000	10%	90% (opto-hybrid assembly)	N/A	N/A
D Rx Amplifier	250	10%	90% (opto-hybrid assembly)	N/A	N/A
Ruggedized Ribbon	30km	10%	90% (connector assembly)	10%	30%
Terminated Fibre Ribbon	4400	10%	100%	10%	N/A
Dense Multi-Ribbon Cable	45km	10%	90% (connector assembly)	15%	10%
Terminated Multi-Ribbon Cable	570	10%	100%	15%	N/A
A-Opto-Rx Module	4500	10%	95% (FED assembly)	20%	N/A
A-Rx Amplifier	5000	10%	95% (Module assembly)	20%	N/A