Data Centre Interconnect

- **High-speed connections on fibre between data centres**
- **Replace multiple fibre pairs with transparent DWDM and Ethernet technology**
- **Supports Ethernet up to 100 Gb/s, Fibre Channel up to 8 Gb/s and SDH up to 10 Gb/s**
- **Service agreement with guaranteed availability of 99.7pct or 99.99pct**
- **Monitoring and fault correction 24x7 for the entire solution**

Data centres often get connected with a number of fibres end-to-end. Data Centre Interconnect is a solution that attach data centres through a single pair of fibres with multiple high-speed connections. With an additional fibre pair along an alternative route, a redundant solution with fully duplicated equipment is offered.

Comprehensive, monitored solution

Data Centre Interconnect avoids the costs of renting fibres and purchasing transmission equipment as well as entering support- and preparedness agreements for the individual parts of the solution. GlobalConnect deliver the comprehensive solution and with a service on par with other GlobalConnect transmission services, i.e. full 24x7 monitoring and fault correction around the clock throughout the year.

The solution consists of a great number of transmission connections delivered across DWDM on a single fibre pair.

Speeds from 1 Gb/s to 100 Gb/s

Individual channels can be delivered from 1 Gb/s to 100 Gb/s and be transferred as Ethernet, Fibre Channel, or SDH. Interfaces can be optical (singlemode or multimode fibre) or electrical (only on 1 Gb/s).

100pct transparency

Connections are transparent and are not routed through a switched network. DWDM (Dense Wavelength Division Multiplexing) is used on fibre pairs between the Data centres. That gives the highest possible transmission quality while using each fibre pair to a high extent.

Redundancy and SLA

The solution can be delivered fully redundant by duplication of all equipment and use of divergent fibre routes.

Two physically separated routes lead to each of the two addresses, where each fibre pair terminates in respective terminal equipment. The accompanying Service Level Agreement offers the best availability guarantee in the market with 99.99pct for solutions with redundancy.

Ethernet Concentrator

Ethernet Concentrator may be used if there is a need for a larger number of 1 Gb/s ports, each of which uses less than the full 1 Gb/s capacity. Ethernet Concentrator consists of one or more Ethernet switches coupled in front of one or more 10 Gb/s channels, which are allocated for this purpose.

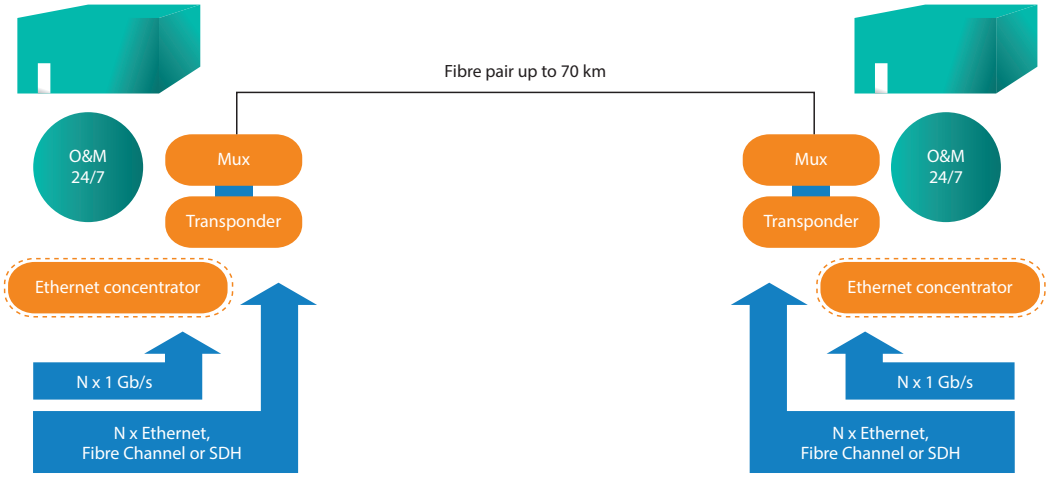

Figure 1: Data Centre Interconnect is a transparent solution, which connects Data Centres with very high capacity.

Technical data

Conditions to be considered

When a solution is being designed for a given technical environment, attention should be drawn to a couple of circumstances:

- Max distance between Data Centres. Some equipment has specifications for maximum latency, which may limit the maximal distance between the centres.

- Often there is also a difference between the length of fibres for two alternatively routed circuits. If the difference is too large, a redundant solution may fail. Therefore, according to requirements, the difference should be compensated by adding a coil of fibre of adequate length to the shortest circuit. GlobalConnect can deliver this as an add-on.

- Need for Link Loss Forwarding: When using an Ethernet concentrator one must pay attention to whether the attached equipment expects that ports are getting deactivated if the connection at the other end fails. If so, a dedicated Ethernet concentrator is required.

Protocols	Ethernet	1 Gb/s
		10 Gb/s
		100 Gb/s
	Fibre Channel	1 Gb/s
		2 Gb/s
		4 Gb/s
		8 Gb/s
	SDH	STM-16
		STM-64
Interfaces	Electric	1Gb/s Ethernet
	Optical single mode, 1310 nm	Ethernet Fibre Channel
	Optical multimode, 850 nm	Ethernet Fibre Channel
Transport medium	1 Fibre pair + DWDM. The fibre pair is an integral part of the solution and cannot be ordered separately.	
Maximal cumulative capacity per fibre pair	96 channels, each up to 100 Gb/s	
Range	Maximum distance for the solution is 70 km. However, conditions in the attached equipment may limit the range.	
SLA	99.7pct (unprotected) 99.99pct (full diversity)	
Monitoring	GlobalConnect's network operations centre monitors the equipment 24x7.	
Add-ons	• **Ethernet Concentrator** w/o Link Loss Forwarding **Ethernet Concentrator** w/Link Loss Forwarding • **Balancing of fibre lengths** – if there is a too great difference between alternatively routed fibre lengths, a fibre coil may be added which offsets the difference.	

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