Transworld™

Cost-effective network solution

Global MPLS

Transworld Global MPLS

Transworld's 'Global MPLS' is a data service offering from its suite of global products. Coupled with Transworld's own private IP backbone, 'Global MPLS' is able to provide our customers with a managed, secure and cost-effective network solution and can also provide network access to our mobile users.

By subscribing to 'Global MPLS' services, customers are able to leverage Transworld's wide area IP network as well as our state-of-the-art network operations centre. This translates into lower costs for the customer along with simplified networking requirements.

Key Benefits

- Suitable for site-to-site communications in a corporate intranet (sharing information within a single organization) or extranet (sharing information between organizations) using dedicated access.
- Provides a solution for customers running different application types that require different performance levels.
- A secure IP VPN solution based on the Multi-Protocol Label Switching (MPLS) technology for delivering the security level equivalent of Frame Relay or ATM networks.
- Requires no investment in additional VPN equipment from the customer at their premises for encryption and tunneling - thus guaranteeing further cost savings.
- A secure IP VPN solution delivered from the Transworld's network instead of the customer's premises equipment.
- Can address different performance levels required for different applications and offers several classes of services and the associated parameters defining quality of service.
- Gives the customers the ability to select the Class of Service (CoS) for their particular applications and hence achieve major cost savings.
- Uses MPLS standards to scale the network for supporting tens of thousands of VPNs.
- Supports any range of IP addresses. As an example, customers with private IP addresses can send their data packets directly without the need to perform Network Address Translation (NAT).
- A high performance solution backed by service level agreements that cover activation, availability, transit delay, packet loss, jitter and mean time to restoration.
- Provides backup options including redundant port.

Network Architecture

The fundamental capability of Transworld's backbone network is the ability to provide label switching transport in the core. The 'Global MPLS' backbone provides ultimate scalability compared to other network implementations that have capacity limitations which cannot easily be overcome without significant expenses on additional DWDM equipment and router interfaces. The Transworld 'Global MPLS' network design provides line-speed throughput, faster failure recovery, superior traffic engineering and higher density chassis.

The core is designed with a significant amount of redundancy and high availability. For all core sites, a minimum of two nodes exist in order to mitigate the impact of any single node failure. For links that interconnect core sites, steps are taken to ensure that they are methodically terminated to the appropriate core router in order to minimize the global impact of potential router or interface failures. Transworld's backbone employs physical layer protection and backbone path diversity.

Specifications

Port Speed

Transworld's 'Global MPLS' service is based on Multi-Protocol Label Switching to deliver MPLS VPN services. The core technology is essential to provide secure and scalable network-based IP VPN solutions to customers.

The port speeds available for services are as follows:

- Nx64K
- 2M
- 4M
- 10M
- 34M
- 45M
- 100M

Any port speed above 100M will be considered as special case and will be addressed to NNI partner for service availability on such port speeds.

Access Methods

The following types of physical ports are available to access Transworld's 'Global MPLS' service:

- Fast Ethernet
- Gigabit Ethernet

Other access methods can be provided on a case to case basis.

Class of Service (CoS)

The Class of Service (CoS) features for MPLS enable network administrators to provide different types of Quality of Service (QoS) across an MPLS network.

QoS can be defined as the ability to allocate network resources separately according to the type of traffic being transmitted. It includes a set of mechanisms that give network managers the ability to control the mix of bandwidth, delay, jitter and packet loss in the network.

Differentiated QoS levels satisfy a range of requirements by supplying, for each packet transmitted, the particular kind of service specified for that packet by its CoS.

Class of Service	Application Type	Example
Global MPLS Basic Data	Designed for delay tolerant applications that require best effort delivery and normal availability	Email, File Transfer, Browsing
Global MPLS Plus Standard Data	Designed for other business applications	Telnet, Extranet web applications, General data applications, Interactive applications
Global MPLS Plus Priority Data	Designed for applications that require low loss, controlled jitter, latency and high availability	Transactional data, Standard business applications, SAP, SNA, Oracle
Global MPLS Elite Mission Critical Data	Designed for applications that require low loss, controlled jitter, latency and high availability	Video or business critical applications
Global MPLS Elite Real Time Data	Designed for applications that require very low loss, guaranteed jitter, latency and highest availability	Voice applications

Service Policies

Single CoS per access link (voice & data)
- Choice of port speed must be 64k and equal to the local access connection speed offered by Transworld
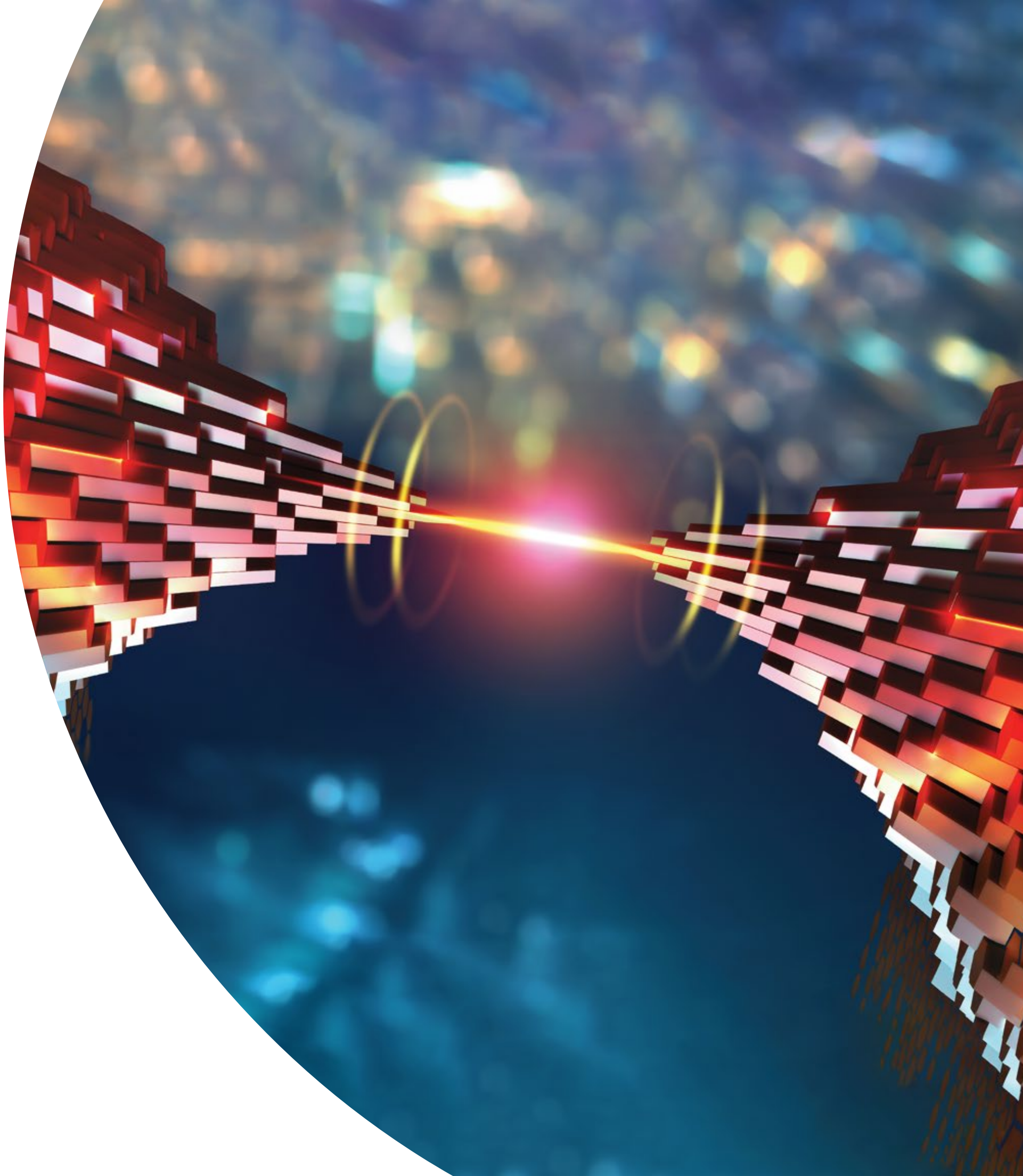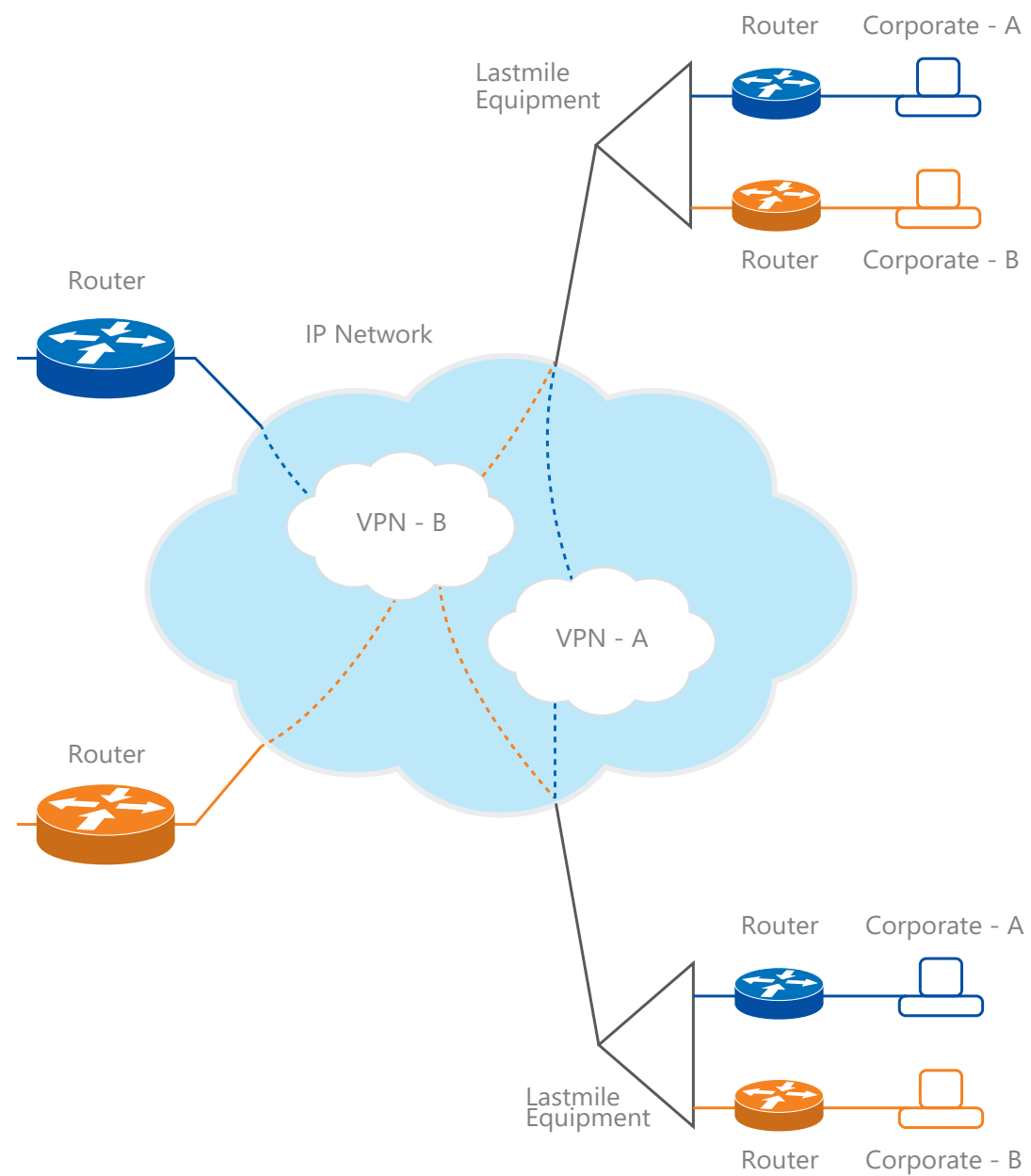- If transmission exceeds its subscribed bandwidth, excess packets will be dropped

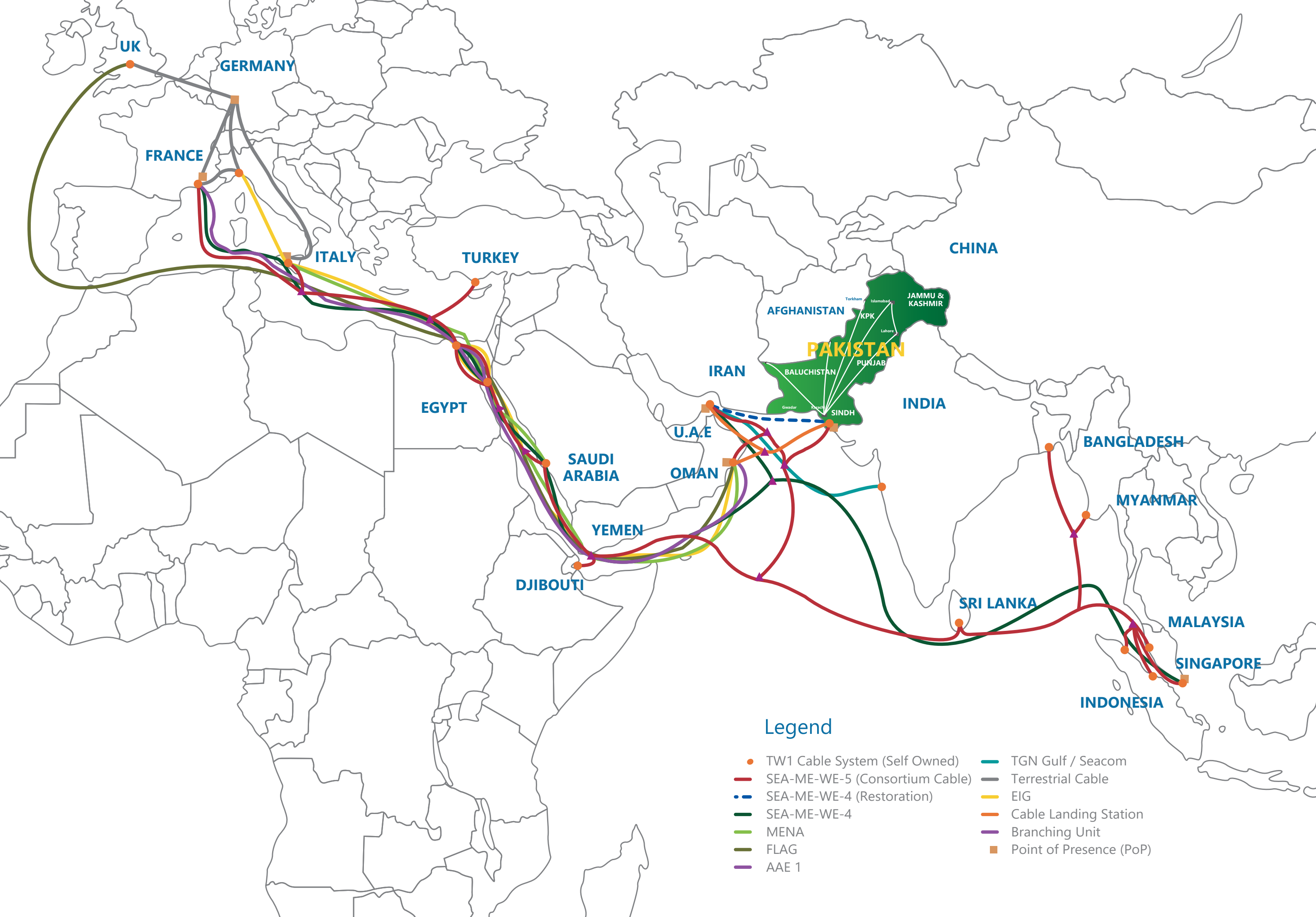### Multiple CoS on single IP VPN access port (data only or voice/data bundling)
Class of service is tied to the IP VPN Port and does not refer to a physical port, but a point of access at the network edge. For example, multiple CoS may terminate at a single physical IP port. Hence, with a single local leased circuit (or access link) connected to a single physical IP port, the customer will be able to order multiple Class of Service over that single physical IP port.

Similar to multiple CoS over a single physical IP Port, Transworld is also able to provide an integrated VoIP VPN CoS and data service over a single physical IP connection. Hence, with a single local leased circuit (or access link) connected to a single physical IP port, the customer will be able to order two or more Class of Service over that single physical IP port together.

Class of Service	Availability	Latency	Packet Delivery	Jitter
Global MPLS	Yes	Yes	Yes	Yes
Mission Critical Data	Yes	Yes	Yes	NA
Priority Data	Yes	Yes	Yes	NA
Standard Data	Yes	Yes	Yes	NA
Best Effort	Yes	NA	NA	NA

Secure & high Performance
IP VPN Solutions

Router
Corporate - A

Lastmile
Equipment

Router
Corporate - B

Router

IP Network

VPN - B

VPN - A

Router

Router
Corporate - A

Lastmile
Equipment

Router
Corporate - B

Map labels:

UK

GERMANY

FRANCE

ITALY

TURKEY

IRAN

CHINA

AFGHANISTAN

Torkham

Islamabad

JAMMU & KASHMIR

KPK

Lahore

PAKISTAN

BALUCHISTAN

PUNJAB

Gwadar

Karachi

SINDH

INDIA

EGYPT

SAUDI ARABIA

U.A.E

OMAN

YEMEN

DJIBOUTI

SRI LANKA

BANGLADESH

MYANMAR

MALAYSIA

SINGAPORE

INDONESIA

Legend

- ● TW1 Cable System (Self Owned)
- —— SEA-ME-WE-5 (Consortium Cable)
- – – SEA-ME-WE-4 (Restoration)
- —— SEA-ME-WE-4
- —— MENA
- —— FLAG
- —— AAE 1
- —— TGN Gulf / Seacom
- —— Terrestrial Cable
- —— EIG
- ● Cable Landing Station
- —— Branching Unit
- ■ Point of Presence (PoP)

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