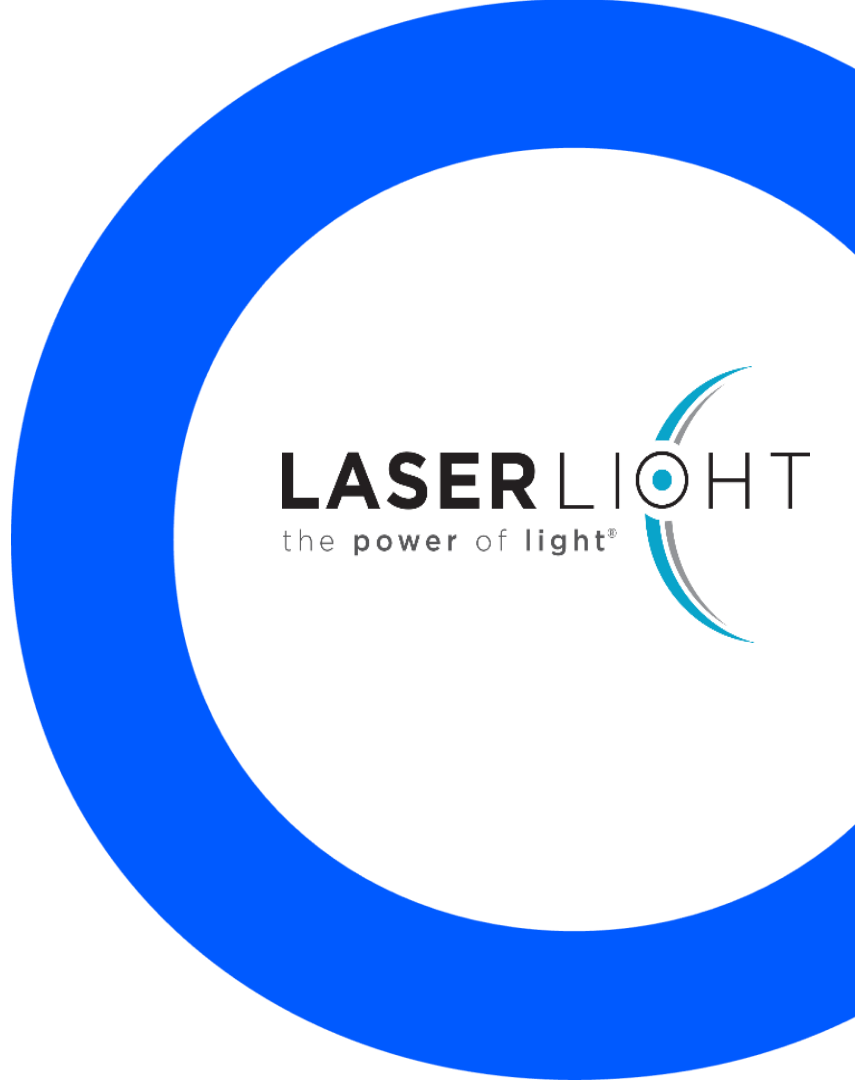


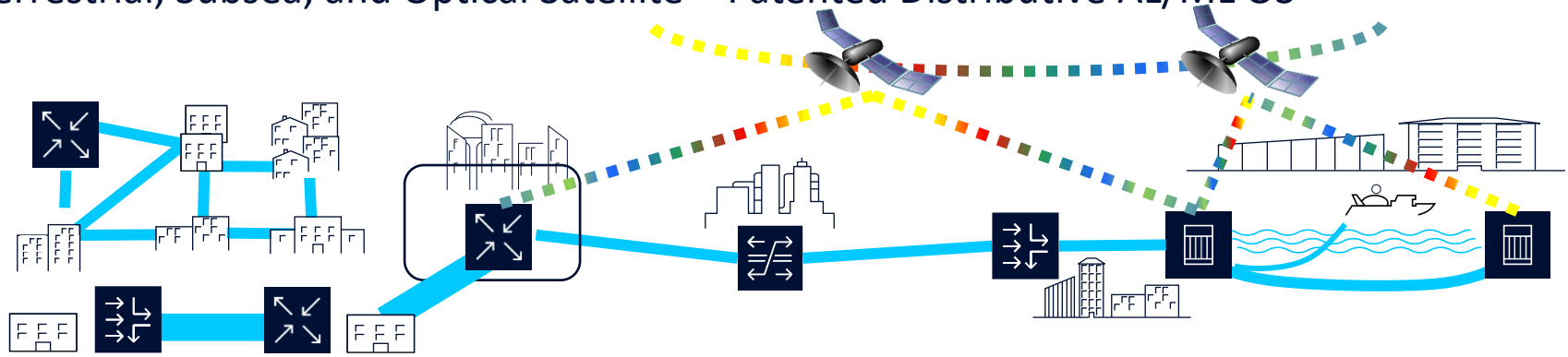
# Multi Domain Space - Ground - SubSea Optical Networking

Matthew Rocksborough-Smith  
Senior Managing Director



# The Network of the Future – Global, Multi-Domain, Self-Aware

Terrestrial, Subsea, and Optical Satellite – Patented Distributive AL/ML OS



Elastic Networking - Low Latency - Direct Connect - On-Demand - End-End Spectrum Slicing

1830 PSI-M  
Data Centre  
Metro, Micro, Far Edge  
subsea



1830 PSS  
Central Office

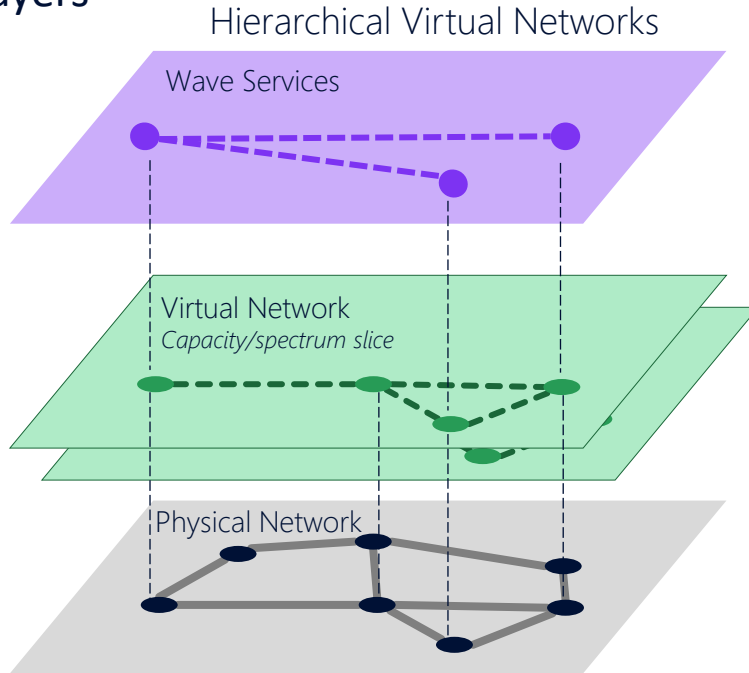


1830 PSS-x  
P-OTN Switching



# Multi-Domain Management Layers

Patented AI/ML-based Product, Transport, Management Layers



## WaveSuite StarBeam™



- Multi-Domain Orchestration
- End user
- OTT
- Premium reseller
- Internal department
- Carrier-to-carrier
- Data Centre provider
  
- Infrastructure owner



# Global Data Flows – TODAY

The northern hemisphere – data transit flows **out-of-balance with Demand** in the southern hemisphere



Data Is Created  
Above the  
Equator

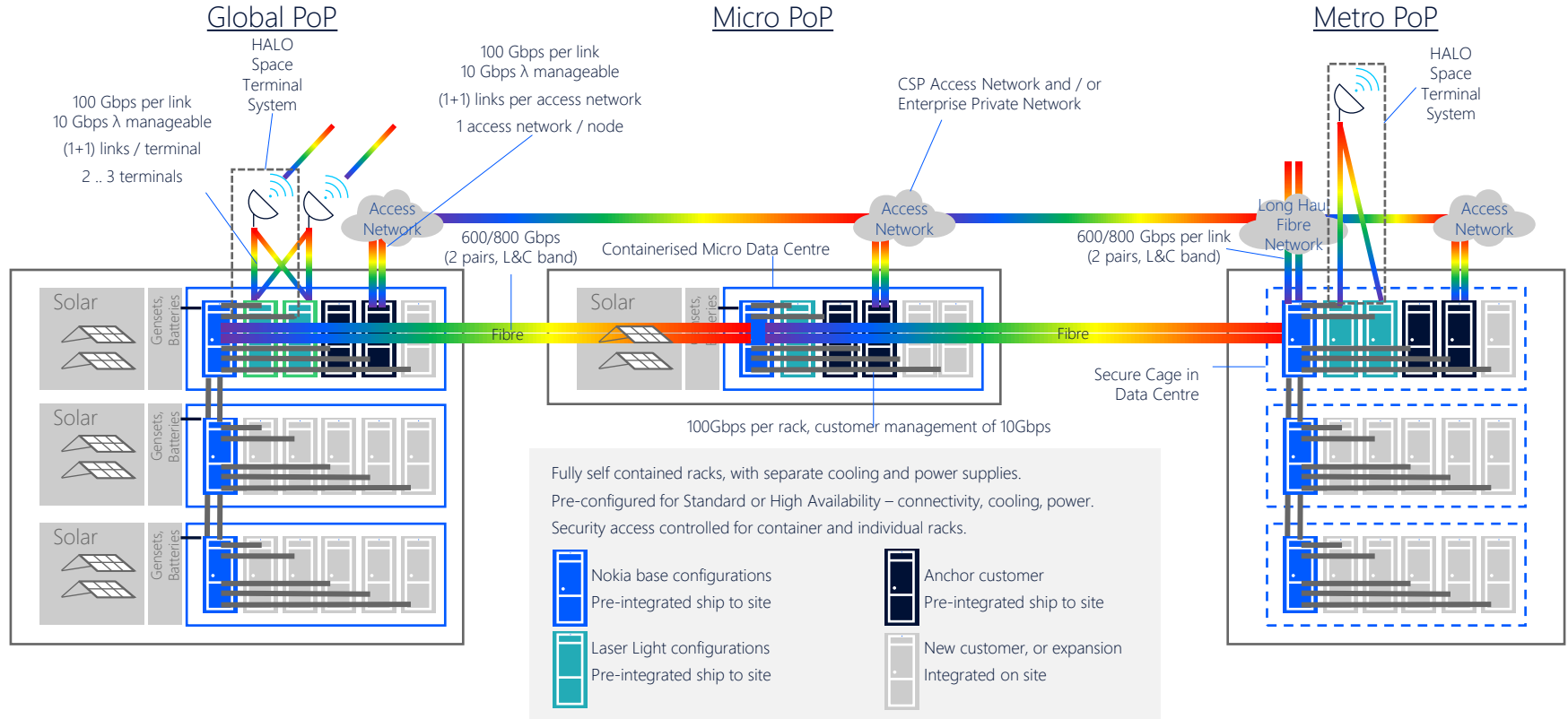
Higher Margin  
Demand Is  
Below The  
Equator

# Global Data Flows – LASER LIGHT ERA

Serving new markets in the southern hemisphere – an emerging global data powerhouse



# Global Rack™ Configuration – Distance Insensitive



# How the Global Data Rack Works – Real Time Data Analytics

## Data Ingestion and Aggregation

- Data Sources
- Data Flow

## Data Processing and Edge Computing

- Data PoPs
- AI/ML Integration
- Data Traffic Analytics
- Changing Atmospheric Conditionalities Analytics

# Modular Infrastructure – Data Personalized to Serve the Data Pool

## Differentiated Cloud

### GLOBAL SERVICE OFFERINGS

### STANDARD LOCAL OFFERINGS

GLOBAL WDM  
MULTI-PLEX  
END TO END  
SPECTRUM SLICING  
“PRICED PER  
SLICE”

GLOBAL  
DISTRIBUTION  
“PRICED PER  
BYTE” VOLUME,  
METERED  
PRICING

CLOUD SERVICES  
LOCAL DATA POOL  
CDN, COMPUTE,  
ENTERPRISE

SD-WAN-LOCAL

ENTERPRISE

LOCAL COMPUTE, “REMOTE HANDS”

10 SPECTRUM COLORS  
ITU COLOR CHART

++ZB's  
VOLUME  
“ALL YOU  
CAN EAT”  
PRICING

LOCALIZED  
HOSTING,  
STORAGE  
CONTENT,  
COMPUTE

WIRELESS BACKHAUL – 5G

HOSTING, CONTENT STORAGE



# Laser Light Multi-Domain Optical Platform - Characteristics

## All-Optical Satellite Constellation

- High Speed, Low Latency Global Connectivity
- FSO without OEO = minimal signal degradation + faster transmission speeds

## Terrestrial Optical Fibre Network

- Connect key data centres, ground stations and end-users = redundancy and more reliable communications services

## Micro Data Centres

- Containerized, easily deployable, strategic locations around the world
- Optical/IP connectivity – Local compute
- Minimizing latency for end-users

## Software-Defined Networking (SDN) and Network Function Virtualization (NFV)

- Dynamic, programmable control of network = delivering tailored services to customers across geographies

## Artificial Intelligence and Machine Learning (AI/ML)

- Algorithms optimise network performance, health, predict failures

## Optical Wavelength Division Multiplexing (WDM) ROADM

- Dynamic Allocation of wavelengths for different data streams = improve network efficiency

## Internet Protocol (IP) routing

- Gateway router to interconnect with customers/partners ISPs, CDNs

# Laser Light Multi-Domain Optical Platform –Types of Services

- **High-Speed Optical Communications**
- **Multi-Domain Network as a Service**
- **Edge Computing and Low-Latency Services**
- **Data Storage and Cloud Services**
- **Global Media and Content Distribution**
- **AI-Powered Analytics and Monitoring**
- **Secure Communications for Defense and Government**
- **Internet of Things (IoT) Connectivity**
- **Disaster Recovery and Business Continuity**
- **High-Resolution Earth Observation and Remote Sensing**

**LASER LIGHT**  
the power of light®

**NOKIA**

