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# **CORPORATE SUMMARY, PRODUCT & TECHNOLOGY PRESENTATION**

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# ABOUT VALIANT COMMUNICATIONS



## Introduction

- Established in 1993 in technical and financial collaboration with Vanguard Communications USA.
- An ISO 9001:2015, ISO 10001:2018, ISO 14001:2015, ISO 27001:2013 and ISO 45001:2018 certified equipment manufacturer of Communication, Transmission, Protection, Synchronization and Cyber Security solutions.
- Provides a powerful blend of “innovation, quality and economics”.
- Successful installations in over 110 countries, worldwide.
- Global footprint with offices in USA, UK, Canada and India.
- Regional Distributor offices in 25 countries.



# PRESTIGIOUS REFERENCE CUSTOMERS

End-users, using VCL equipment



ABB



Siemens



Schneider Electric



Power Grid (PGCIL)



Turkish Electricity Company



Larsen & Toubro Limited



Perusahaan Listrik Negara



Vietnam Electricity



Defence Communications Agency (DCA)



Honeywell



Lockheed Martin



Northrop Grumman



United Nations



United State Government



Raytheon



Amentum (NASA)



GE Renewable Energy



L3 Harris



Motorola



Tranelectrica



Airport Authority of India



General Dynamics



Government of Canada



Tesla

# TARGET INDUSTRIES



## POWER & UTILITIES

Power Sector Infrastructure –  
Transmission, Distribution,  
Digital Substations, Smart Grid.

Wide Area Monitoring (WAMS)

Utilities – Water, Oil & Gas, Solar and  
Wind Energy, Renewables.

Railways and Metro Rail,

Airport Communication Networks.



## CORPORATES & GOVERNMENT

Industrial Automation,

Corporate Networks,

Banks and Financial Institutions,

Rural Communications

Mobile 4G, 5G Communication  
Networks.



## CYBER SECURITY

Cyber Security for core sector  
(Power, Railways, Airports,  
Utilities, Institutions)

Defense Networks,

Automatic Network Isolation solution.

Network Reliability & Failover solutions.

# OPPORTUNITY SCALE



## \$100B

Legacy, Contemporary, Emerging technologies including MPLS Router product market size is valued at > \$50 billion in 2019 and is projected to reach > \$ 100 billion by 2027.

- *MPLS-Market*

<https://www.mordorintelligence.com/industry-reports/managed-mpls-market>

## \$305B

Cyber Security market size was valued at \$149.67 billion in 2019 and is projected to reach \$304.91 billion by 2027.

- *Cyber-Security-Market*

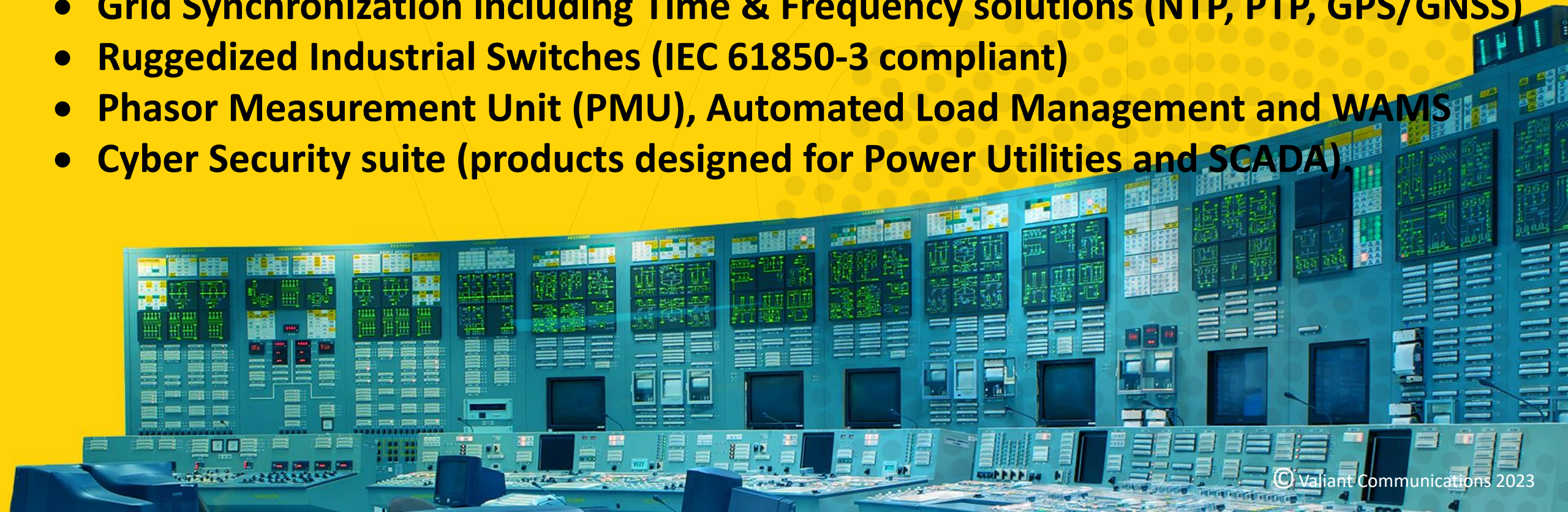
<https://www.alliedmarketresearch.com/cyber-security-market>



# END-TO-END SOLUTIONS



- Communication and transmission (IP/MPLS Routers, SDH/SONET, MPLS-TP)
- Teleprotection (Distance Protection) E1, Optical C37.94, IP/MPLS, GOOSE 61850
- IEEE C37.94 Differential Protection communication solutions (E1, Optical, IP)
- Grid Synchronization including Time & Frequency solutions (NTP, PTP, GPS/GNSS)
- Ruggedized Industrial Switches (IEC 61850-3 compliant)
- Phasor Measurement Unit (PMU), Automated Load Management and WAMS
- Cyber Security suite (products designed for Power Utilities and SCADA).



# LEGACY PRODUCTS



- **Digital Teleprotection – Distance & Differential Protection solutions**
  - Digital Teleprotection over E1 and IEEE C37.94 Optical links
- **IEEE C37.94 to E1 Converters (1E1 & 4E1)**
- **IEEE C37.94 Multi-mode to Single-mode Optical Converters**
- **IP over TDM - Ethernet over E1, T1 and DS3 Multiplexers**
- **E1 and T1 (1+1 APS) Automatic Protection and A/B Failover Switches**
- **IEC 60870-5-101 to 60870-5-104 Protocol Converter**



# LEGACY PRODUCTS



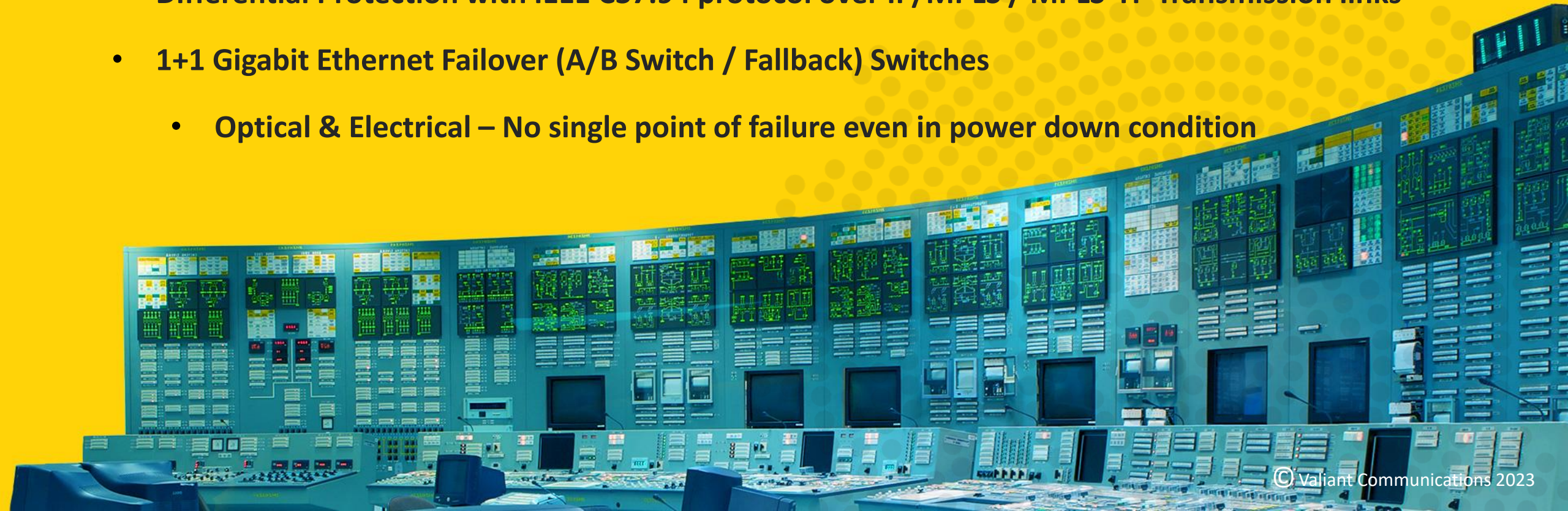
- **SDH/SONET with MPLS-TP**
  - STM-1, STM-4, STM-16, STM-64 with MPLS-TP
  - OC-3, OC-12, OC-48, OC-192, FE/GE with MPLS-TP
- **PDH Voice and Data Multiplexers with IEEE C37.94**
- **E1/T1 Digital Access Cross-Connect Switches (DACs)**
- **IP Multiplexers - TDM over IP - TDM over Ethernet / TDM over MPLS Multiplexers**
- **Optical Multiplexers**
- **E1 and T1 Monitoring Patch Panels, Splitters, AC to DC and DC to DC converters.**



# CONTEMPORARY PRODUCTS



- **Digital Protection Couplers - Digital Teleprotection over IP/MPLS and MPLS-TP Transmission links.**
- **Distance Protection with IEC 61850 GOOSE over E1, IEEE C37.94 and IP/MPLS Transmission links.**
- **Differential Protection with IEEE C37.94 protocol over IP/MPLS / MPLS-TP Transmission links**
- **1+1 Gigabit Ethernet Failover (A/B Switch / Fallback) Switches**
  - **Optical & Electrical – No single point of failure even in power down condition**



# CONTEMPORARY PRODUCTS



- GPS/GNSS Primary Reference Clocks (ITU-T G.811)
- GPS to IRIG-B Time Distribution Solutions
- NTP Time Servers with 1G and 10G Interface Options
- NTP to IRIG-B Converters
- PTP 1588v2 Grandmaster Clocks
- PTP 1588v2 Slave Clocks
- PTP 1588v2 Transparent Clocks
- PTP to IRIG-B Converters.



# SYNCHRONIZATION

# MODERN NETWORK ESSENTIAL PRODUCTS

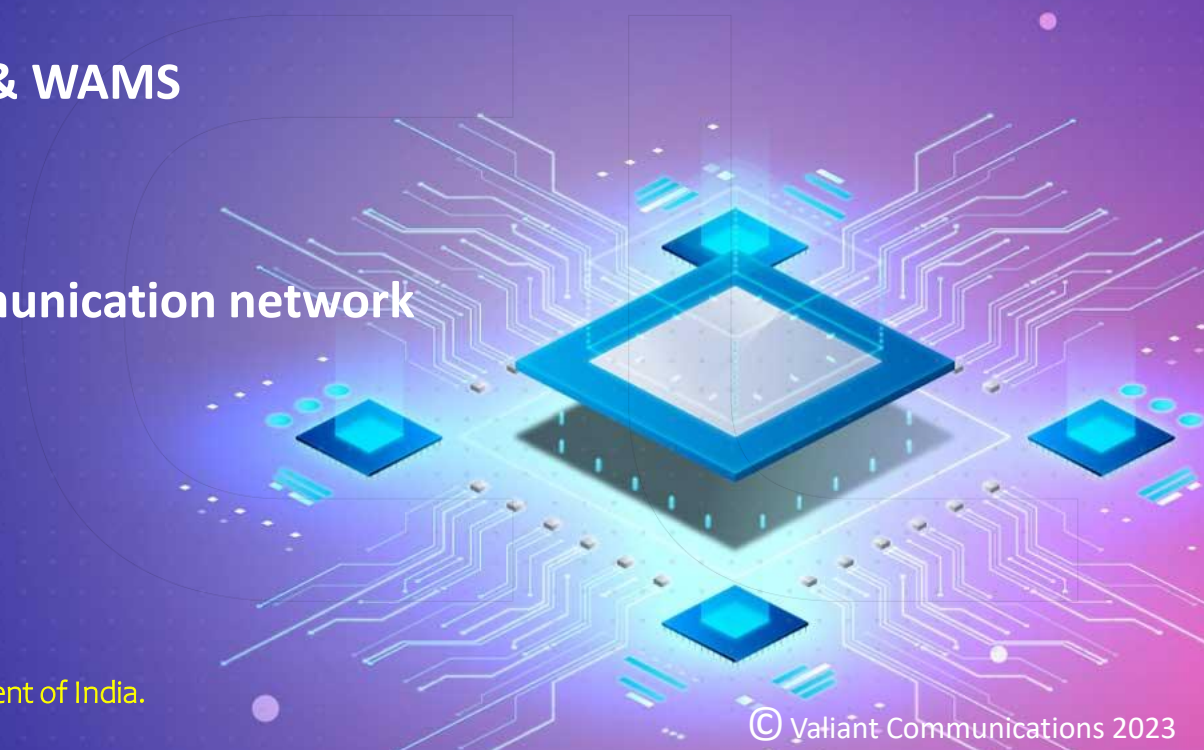
- IP/MPLS Routers – Utilities, Railways, Telecom 4G, 5G
- Core, Edge, Access / Customer Premises Routers
- 1+1 Redundant Next Generation Firewalls
- Ruggedized, IEC 61850-3 Compliant Industrial Grade Ethernet Switches.
- GPS based Time and Frequency Synchronization Products including NTP Servers, PTP Grandmaster Clock, PTP Transparent Clock, PTP Slave Clock.



# EMERGING TECHNOLOGIES



- TDM and IP/Ethernet communication for transmission for Military / Defense
- PRP (Parallel Redundancy Protocol) Switch for zero packet-loss transmission-switching
- Fail-Safe, Transparent Firewalls designed for IEC-104, DNP3 and MODBUS RTUs
- Phasor Measurement Unit (PMU)\* for Smart Grid & WAMS
- Automated Load Management solution
- Dynamic Islanding solution using high-speed communication network
- 1G/10G Data Encryption Equipment.



\*Approved by CSIR-National Physical Laboratory, Ministry of Science & Technology, Government of India.



# CYBER SECURITY SOLUTIONS



# CYBER SECURITY SOLUTIONS



## DETECT, PREVENT, SECURE

- 👁️ Network-MouseTrap™ (Advanced Honeypot)
- 👁️ Network Isolation (Kill) Switch
- 👁️ Ethernet (A/B) Fail-Over / A/B Switches
- 👁️ 1+1 Redundant Firewalls and Routers
- 👁️ Cyber-Smart Rack Monitoring & Control Unit
- 👁️ Unified Network Management System.

# POWER UTILITY/ SCADA

- ABB, Norway
- APTRANSCO (AP), India
- Arizona Public Services Co. USA
- Basin Electric Power Cooperative
- Besalco, Chile
- BHEL, India
- Brazos Electric Power
- Consorcio Energetico De Huancavelica S. A., Peru
- Delhi Transco (NCR), India
- EGAT, Thailand
- Electrica Transilvania, Romania
- GE Renewable Grid Solution, UK
- GETCO (Gujarat Energy Transmission Corporation Limited)
- Hanoi Power, Vietnam
- Jamaica Public Service Company, Jamaica
- Larsen & Toubro, India
- National Grid SA, Saudi Arabia
- Nepal Electricity Authority
- Nova Scotia Power Inc. Canada
- Paiute Pipeline, US
- Power Grid Corporation of India
- Schneider Electric, Mexico
- Siemens Indonesia
- Siemens India
- Siemens UAE
- Sulaymaniyah Power Station, Iraq
- Tampa Electric Company
- TAN Transco, India
- Turkish Electricity Company (TEIAS)
- Transelectrica, Romania
- VietNam Electricity (EVN)
- Viesgo Distribución Eléctrica Spain
- WAPA (Western Area Power)
- Western Power, Australia

End-users, using  
VCL equipment

# AVIATION & AIR

## Traffic Control

End-users, using VCL equipment

- Airports Authority of India
- Air Navigation Services, Rep. of North Macedonia
- Aeronautical Radio of Thailand
- Bangladesh Air Force
- Bombardier, Australia
- Brunei Airport Authority, Brunei
- Department of Civil Aviation, Brunei
- Dubai International Airport Authority
- FAA (Federal Aviation Authority, USA)
- Hanoi & Ho Chi Minh Airport Authority
- Jordan Air Force
- Kabul Airport, Afghanistan
- Ministry of Defense Kuwait
- Ministry of National Defense, Vietnam
- Mitsubishi Aircraft Corporation, US
- NASA (US Space Program)
- Ports of Jersey, Jersey Harbours
- Prefectura Naval Argentina (PNA)
- Royal Jordanian Air Force
- Royal Air Force of Oman
- Sri Lanka Airport Authority
- Tetrasviaz, Russia
- Turkey Airport Authority
- Vietnam Air Traffic Management Corporation



# CELLULAR/MOBILE BACKHAUL



End-users, using VCL equipment

- ArmenTel, Armenia
- Alestra - ATT Mexico
- Bharti Airtel India
- Bristol BayTelephone Corp. Inc. USA
- BSNL India
- British Telecom
- Cable & Wireless
- Camintel Cambodia
- Celltel Malaysia
- Clearwave Communications
- Cook Islands
- DMC Wireless Systems S.A., Bolivia
- Etisalat, Afghanistan
- Etisalat, Nigeria
- Etisalat, UAE
- France Telecom
- Fujitsu, Ireland
- GL Communications Inc., USA
- Harris CapRock
- KurdTel, Iraq
- LankaCom, Sri Lanka
- Mobicom, Mongolia
- Ministry of Communication, Kuwait
- Mobifone, Vietnam
- Nocholas Stanziola / Motorola Solutions, USA
- One Macedonia
- Orange Group, Hong Kong
- PT. INDOSAT, Indonesia
- Roshan, Afghanistan
- Sri Lanka Telecom
- TeleCaymen
- Telecom, Seychelles
- TelBru, Brunei
- Telikom PNG, Papua New Guinea
- Telefónica Spain
- Tunisia Telecom
- Utah Communication Agency Network, USA
- XL / Excelcomindo Indonesia



# OIL & GAS

End-users, using VCL equipment

- ADMA, Abu Dhabi Oil
- Brunei Shell Petroleum, Brunei
- ENI Saipem
- Petronas Cargili, Malaysia
- Qatar Gas, Qatar
- RAS Gas, Qatar
- San Diego Gas & Electric, USA
- TECO / Peoples Gas, Tampa, Fl
- BSNL India / Bharti Airtel India.

# Global Distribution Network



# Contact Us

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