

## CASE STUDY

### Outdoor LTE Cellular Router for Telecommunications in India.

#### Background

Bharti Airtel Limited is a leading global telecommunications company with operations in 18 countries across Asia and Africa. Headquartered in New Delhi, India, the company ranks among the top 3 mobile service providers globally in terms of subscribers. In India, the company's product offerings include 2G, 3G and 4G wireless services, mobile commerce, fixed line services, high speed home broadband, DTH, enterprise services including national & international long-distance services to carriers.

#### Challenges

- **No Connectivity:**

India is a very fastest growing country, but there are so many rural areas or remote areas in India where connectivity on copper, Fiber, and R.F are not feasible. A study of customer requirement in India has revealed that expansion of customer network now require footprints in the remote territories for connecting remote offices and low man power branches of banks, ATMs, rural offices of microfinance companies, billing collection, center of Power companies, warehouse of manufacturing and distribution companies where there is a limited man power as well as franchise and distributorship outlets of retail chain.

- **Security Issue:**

Since almost industries require very high time and secure connection, they don't want to share their data with anyone. For examples, banks want to connect their spoke location from Hub location with secure connection and data as well. Same example is for Highway toll Plaza and ATMs.

#### Solutions and Benefits

Proscend helps Bharti Airtel provide a solution MPLS over 4G for corporate customers as a backup link and to serve the customers where Copper, Fiber and R.F are not available. Proscend introduced a LTE outdoor cellular router which will be installed at customer Place with SIM integration. SIM is provisioned with predefined APN for connectivity of MPLS customers. Utilizing 4G as last mile option on license frequency of 2300 MHz TDD and 1800 MHz FDD for MPLS connectivity to connect remotely located terminals through Airtel's 4G network to their enterprise's servers. Therefore, MPLS over 4G solution was designed with Dual APN feature. One APN is for secure services another one APN is for management.

This is an ideal solution for customer requiring below:

- Cost effective wireless connectivity
- Quick deployment by only SIM integration at Router
- Very high Network uptime
- Low Capex and Opex

## Product Used

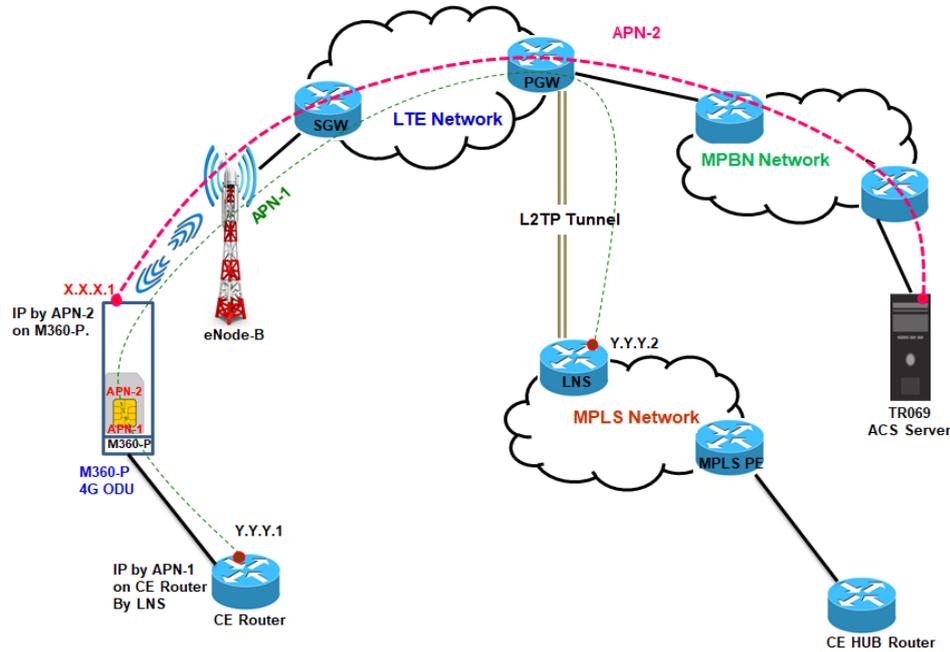
### Proscend's Outdoor Industrial Cellular Router M360-P



- Support multi-band connectivity with FDD LTE/ TDD LTE/ WCDMA/ GSM
- Support LTE Category Cat4
- Designed for concurrent bridge and router mode
- Independent Dual APN supported i.e. Service APN and Management APN
- Integrated embedded high gain antenna against with 10 dB Antenna Gain
- Built-in a Gigabit LAN port with Passive Power over Ethernet (PoE)
- Waterproof and dustproof housing with IP67 grade protection
- FGI split bit support for seamless handover
- Fallback to 3G/4G
- IPv6/IPv4 dual stack and all applications are IPv6 ready.
- Operating temp from -20°C to +60°C for use in harsh environments
- Support PCI and Band locking
- Fully managed through TR069/NMS
- Qualcomm MDM 9207 LTE chipset

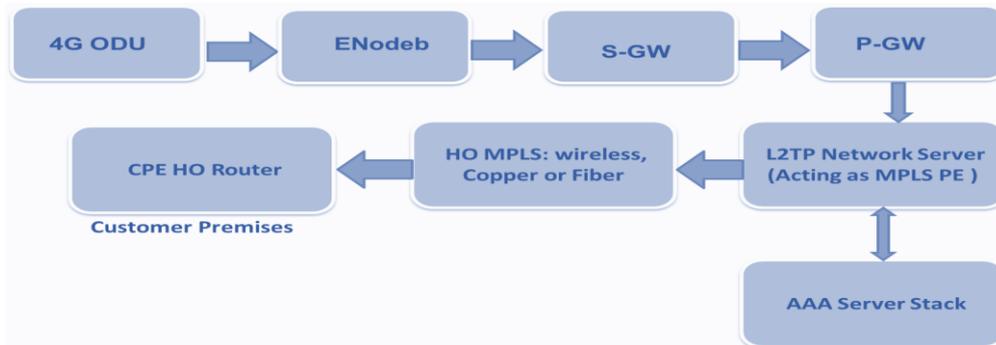
## Application Topology

### MPLS over 4G solution with Proscend M360-P Outdoor Cellular Router



- (1) APN1 is used for services i.e. connectivity from Spoke to Hub.
- (2) APN 2 is used for management of LTE Outdoor Router.

### Network/Traffic flow Diagram



### Target Market

- ✓ BFSI: Bank Small Branches and ATMs.
- ✓ Manufacturing: small Branch Office/Dealer Network.
- ✓ Remote VPN Connectivity.
- ✓ Last mile backup Network.
- ✓ Compliment/Alternate of VSAT.
- ✓ Retail stores, Hyper and Super Markets.