



## Customer

A leading Wireless ISP (WISP) based in South-East Asia

## Challenge

Customer is facing extreme challenges with the existing Wi-Max network

- No support from Wi-Max vendor;
- Constant breakdown of operations
- Remote management of the entire network is a major challenge
- Low throughput per sector

## Solution

- TJ1600-2 is a LTE eNodeB platform that offers a complete TD-LTE Release -9 compliant 2X2 MIMO dual 3-sector Macro eNodeB on a 2 U form factor.
- Compact Integrated EPC capable of handling up to 200,000 subscribers and up to 48 Gbps backhaul data
- Unified and multilayered management from Tejas EMS



# Leading South East Asia WISP migrates from WiMAX to LTE using Tejas products

The customer is a leading South-East Asian Wireless Internet Service Provider (WISP) that offers an extensive range of services under three main categories: telecommunication services, Managed telecom network services and Industrial digital services. The customer was using WiMax network to provide Fixed Wireless Broadband Connectivity in multiple towns in the eastern region. The customer wants to shift to a LTE based broadband network which is more cost-efficient and widely deployed compared to Wi-Max technology. Also there are maintenance issues with the existing Wi-Max network and getting support from existing vendor was a big challenge.

## Key Challenges

The customer was facing lots of issues with the existing network and wants to modernize to a future-proof and reliable network. The key challenges faced by the WiMax network are:

**Vendor Support:** The customer was facing challenges in getting support from the Wi-Max vendor. Further, with the emergence of LTE, Wi-Max technology is at present considered a failed legacy technology and hence moving to a different vendor remains a serious challenge

**TD-LTE Availability:** The customer was incentivized by the availability of a TDD profile within LTE standard with higher capacity, richer device ecosystem and greater deployment flexibility

**Low throughput:** The Wi-Max network was experiencing low throughput per sector and facing severe congestion issues

**Terrain topology:** The topology of the towns is not viable for fiber or Ethernet access networks.

## Tejas Networks Solution

The customer needs a network that is cost-effective, reliable, future-proof and scalable. The entire network from access to core needs to be managed centrally from a Network Management System. Further, the connectivity from core network to access network is over 1500 kilometers. Tejas Networks proposed an end-to-end solution based on TD-LTE to replace all WiMAX sites. The core network will host Tejas ePC which will be connected to multiple TJ1602W eNodeB platforms at the

various sites. The last-mile transmission is through Tejas Outdoor LTE CPE units.

- TJ1602W is the LTE Macro eNodeB solution on the TJ1600-2 platform, extending its role from the backhaul/enterprise segment to the wireless access segment by offering LTE Base Station capability. With the addition of the LTE Baseband card, TJ1602W now offers a complete TD-LTE Release -9 compliant 2X2 MIMO dual 3-sector Macro eNodeB on a 2 U form factor. The eNodeB protocol processing for the three sectors is handled by the Baseband card while Tejas Remote Radio Head (RRH) handles the RF up/down conversion. The RRHs are mounted on a tower while the Baseband card occupies one line card slot on the TJ1600-2 chassis.

### Differentiator

- EPC core capable of handling up to 200,000 subscribers and up to 48 Gbps backhaul data
- LTE Base Station can process traffic from 1500 CPEs per cell

Tejas Networks offers a compelling value proposition for Fixed Wireless Access (FWA) operators seeking to upgrade their legacy WiMAX networks to advanced TD-LTE technology by offering them a seamless transition path that maximizes reuse of their existing network infrastructure with an end-to-end turnkey solution. LTE has emerged as the de-facto choice for mobile broadband for most global wireless ISPs due to its superior spectral efficiency, higher data rate, reduced latency and lower cost per bit.

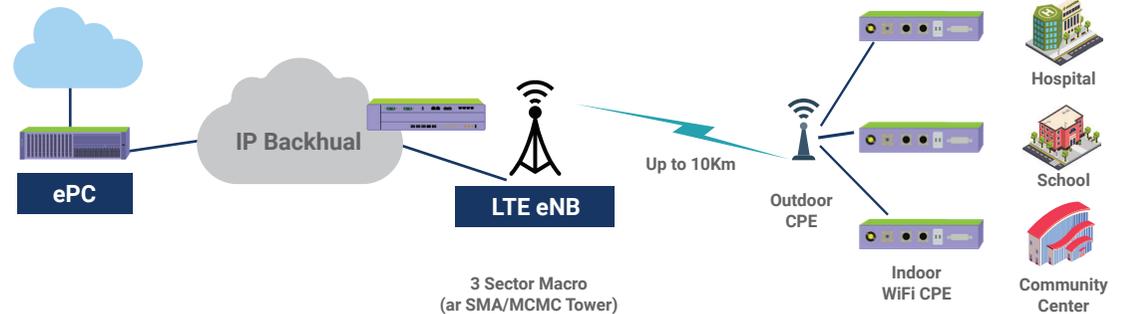
**-Arnob Roy, COO,  
Tejas Networks**

- Compact Integrated EPC consisting of all EPC components capable of handling up to 200,000 subscribers and up to 48 Gbps backhaul data. For extreme fault tolerance, the EPC system is capable of “high-availability” operation, with redundancy in both the control plane and the data plane. The EPC consists of five principal components: MME, S-GW, P-GW, HSS, and PCRF. MME, HSS and PCRF are the control plane components and SGW and PGW handle the data plane (user) traffic.

- Tejas LTE Outdoor Unit CPEs to serve as LTE-to-WiFi gateway
- Tejas Element Management System is a unified, multilayered management platform with full FCAPS functionality for the complete range of Tejas products and technologies. It also provides monitoring and predictive failure analysis functions that ensure high network availability with the minimum possible user intervention.

### Why Tejas Networks

After a thorough technical and commercial evaluation, the Customer selects Tejas’ TD-LTE based FWA solution as the best fit for his application needs. The key benefits offered by Tejas solution are:



**Centralized Management:** Advanced NMS software that allows remote, centralized management and considerably reduces the pains of operational transition by using a transport-friendly provisioning and management paradigm. It uses Intelligent software enabled technologies which work with low infrastructure support and minimum operational costs

**Flexible deployment:** As and when a new location needs to be added, the Baseband Unit and RRH can be deployed at a central point and Internet Access can be activated within a matter of days. Moreover, the coverage radius as well as the direction can be changed depending on requirements.

**Scalability:** The proposed solution will be designed to be capable of providing LTE-Advanced features. The Remote Radio

Head should be upgradable to operate in 4X4 MIMO mode, which can double on-air throughput when compared to a 2X2 MIMO deployment. The 3-sector LTE Base Station can handle up to 1500 CPEs per cell. The total data handling capability of the eNodeB (240 Mbps for a three sector eNodeB) is dynamically apportioned to each subscriber terminal based on its traffic demands, thus taking advantage of statistical multiplexing to provide an efficient utilization of capacity.

### Differentiators

Tejas has successfully replaced all Wi-Max sites with TD-LTE and provided an end-to-end solution for the customer. The solution is integrated with existing Provisioning and Billing System of the customer using Radius interface.