Tejas Networks Enables BSNL's Pan-India 4G/ 5G Wireless & IP/MPLS Based Access and Aggregation Network

BSNL, the state-owned public sector enterprise in India, is responsible for delivering connectivity to remote and underserved regions of the vast country where other options may be limited. It operates an extensive network across the country, offering both wireless and wireline services to individual and business customers. Moreover it plays a crucial role in meeting the 24/7 networking needs of various critical and government institutions.

For its country-wide 4G/ 5G network build-up, BSNL was looking for a strong, trusted technology partner capable to support one of the most complex network roll-out in the world. Moreover the IP/ MPLS based Access and Aggregation Network (MAAN) should be able to create a unified, flexible and scalable backhaul network that will cater to growing data traffic from its full-range of services, including mobile (2G/3G/4G/5G), fiber broadband, Voice over IP, Wi-Fi and enterprise data services and advanced 5G features related to network slicing and IoT connectivity in the future.

Challenges

- The customer wanted to migrate from 3G to a 4G/ 5G network within a aggressive timeline with stringent performance standards

- Given the scale and the focus on trusted technology, it was preferring a strong partner with complete IPR ownership and experience of massive cost-effective network roll-out

- BSNL needed a unified backhaul solution with perfect coverage and near 100% handover

Solutions

- Tejas Networks along with its partners formed a consortium to design and develop the RAN solution. After a stringent, real-world proof of concept (POC) conducted for over a year, it was awarded the project

- Tejas TJ1400 Ultra Converged Broadband with the Radio Access Controller (BBU) card and RRH with multiband support provides the wireless solution

- Tejas supplied 13,000+ of its TJ1400 series of next-generation access and aggregation routers for BSNL's Access and Aggregation Network (MAAN)

- Tejas Networks, along with its partners, deployed a fully indigenous 4G/5G stack for BSNL's nationwide network including cutting-edge 4G/5G baseband and radio for more than 100,000 cell sites in India

Results

- The MAAN project led to excellent coverage, throughput and handover above industry standards. It was successful execution of one of the largest indigenous IP/MPLS router deployments in the country

- Tejas provided 100,000+ cell sites platforms for BSNL's pan-India network in less than 18 months (completed in FY24-25). It is one of largest single vendor RAN deployments in the world.

- A majority of the nodes is already carrying live traffic and BSNL started rolling out its upgraded service offerings since 2024

Key Value Propositions

- Tejas is one of the very few telecom-solution provider with end-to-end solution comprising of wireless and wireline capabilities

- Supports multiple TDD and FDD bands, high-power Macro Radios, NB-IoT and compliance with both 3GPP and O-RAN standards

- With Tejas Ultra-Converged platform, mobility, FTTx, optical transport and cell-site routing can be supported in a single platform

- Tejas Software-defined Hardware architecture enables seamless technology evolution providing highly optimized cost per bit for CSPs

Tejas Networks

Tejas Networks is a global broadband, optical and wireless networking company, with a focus on technology, innovation and R&D. Tejas' carrier-class products are used by telecom service providers, utilities, government, and defence networks in 75+ countries. To know how we can help you fulfill your business objectives, contact us today!

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