



Delivering a **High-Performance Wi-Fi Solution** at Scale for a Leading University in India



Case Study





Outcome

99.5% uptime, 0% packet loss during peak usage, improved user satisfaction, and reduced support tickets.

Client Overview

The digital campus was no longer a concept; it had become part of daily life. But the infrastructure powering it was starting to show its age.

At a prominent private university in Bengaluru, over 7,000 students lived, studied, and collaborated across a multi-block campus. From lecture halls and libraries to hostel rooms and lounges, the demand for reliable internet had become nonnegotiable.

Online learning, real-time research, group assignments, and even downtime streaming had become part of the daily rhythm. But as usage grew, the existing Wi-Fi network began to fall short, leading to drop-offs, dead zones, and day-to-day disruptions.

What the university needed wasn't just better coverage, it needed a strategic upgrade, a network designed for density, built for consistency, and dependable enough to simply stay out of the way.



Project Scope

The goal was to Enable Digital Connectivity that worked across the entire campus, for every user, without frustrating limitations.

It had to support thousands of simultaneous users, manage peak-hour surges, and meet strict regulatory and security standards. The network also needed the flexibility to grow alongside evolving digital expectations, particularly in areas with limited mobile coverage.

Scope at a glance:

- Seamless high-speed access across campus.
- Support for simultaneous high-volume usage.
- Secure, regulation-compliant architecture.
- Scalable backbone for future digital expansion.
- Optimized coverage to eliminate mobile signal gaps.
- 24×7 NOC support for proactive monitoring and uptime assurance.

Challenges

Creating that kind of network came with real-world constraints.

The campus's proximity to high-security zones led to a high-interference environment that weakened signal quality. Routing fiber through restricted areas required careful coordination and planning. Traffic spikes during late hours strained the existing infrastructure. And in many blocks, mobile networks did not reach at all, making Wi-Fi the only available lifeline.

Key obstacles:

- High interference environment from nearby defence facilities
- Limited fiber routing pathways
- High nighttime traffic loads
- Weak or absent mobile network coverage



The iBUS Solution

Ekahau Al Pro was used to map and fine-tune AP placement, leveraging Al to simulate network behavior across various scenarios for precise planning and optimization of signal strength and coverage.

Key Elements

Wi-Fi 6 Across the Campus	High-performance 802.11AX access points were deployed across academic and residential zones to support modern usage patterns and device volumes.
One Room, One AP	Instead of the usual corridor placement, each student room received its own AP ensuring stronger signal strength and fewer connection issues during peak hours.
Scalable Network Backbone	High-capacity PoE switches and 10G Fiber uplinks formed the foundation supporting seamless traffic flow today, with room to scale tomorrow.
Smart Planning and Monitoring	Ekahau Al Pro was used to map and fine-tune AP placement. Everest enabled real-time monitoring and diagnostics, helping the team stay ahead of performance issues.
Smart Planning and Monitoring Traffic Prioritization with QoS	Ekahau Al Pro was used to map and fine-tune AP placement. Everest enabled real-time monitoring and diagnostics, helping the team stay ahead of performance issues. Learning platforms, conferencing tools, and shared academic apps were prioritized automatically, keeping critical tools running smoothly even under load.

Deployment Highlights

The rollout was paced to minimize disruption with thoughtful sequencing, responsive adjustments, and a deep understanding of how the campus functioned.

Deployment in action:

- Access points placed where students needed them.
- Planning optimized for high-interference environments.
- Close coordination with vendors for restricted fiber routing.
- Network evaluated against peak evening load scenarios.
- 24×7 NOC support with real-time alerts and issue resolution from day one.

Results

Connectivity went from a daily concern to a quiet strength.

Students could work, stream, or collaborate without worrying about signal drops. Faculty could rely on online tools with confidence. Helpdesk tickets dropped, and IT teams gained visibility into network health without needing to troubleshoot reactively.

What changed:

- 99.5% wireless uptime across campus
- Zero packet loss during peak usage hours
- 7,000+ users supported simultaneously.
- Satisfaction score consistently above 4.0
- Fewer complaints, faster response times
- Resilient uptime with dual-ISP
 architecture
- Consistent performance for academic applications

Impact Snapshot



Conclusion

With a campus-wide Wi-Fi 6 network, fiber-backed infrastructure, and 24/7 managed services, iBUS delivered a high-performance digital foundation built for scale, designed for learning, and aligned with the demands of modern education.



