

**ENABLING SEAMLESS CONNECTIVITY
ACROSS A MODERN HEALTHCARE CAMPUS
GOA MEDICAL COLLEGE (GMC)**



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CASE STUDY

Name : GOA MEDICAL COLLEGE (GMC)

Industry : EDUCATION

Location : BAMBOLIM, GOA

OVERVIEW

A modern medical institution depends on a reliable and well-organized network infrastructure to support digital communication, connected systems, and day-to-day institutional operations. For Goa Medical College (GMC), Bambolim, the requirement was to establish a structured wired and wireless network infrastructure across its targeted campus areas. The project brought together DIGISOL structured cabling, switching, wireless connectivity, and centralized management into a unified network environment. The deployment was designed to create an organized foundation for network connectivity while ensuring that the installed infrastructure was properly tested and validated before handover.

BACKGROUND

The project covered the deployment of both passive and active networking infrastructure. At the foundation of the network was a structured Cat6 cabling layer, supported by patch panels, patch cords, and wall-mounted network racks. This provided an organized physical infrastructure for establishing and managing network connections across the targeted areas. The active network layer was built around DIGISOL Gigabit PoE switching and Wi-Fi 6 Access Points. The PoE architecture allowed the wireless access points to receive both network connectivity and power through the switching infrastructure, while a centralized wireless controller provided a common management layer for the deployed wireless network.

THE CHALLENGE

The project required more than simply adding wireless access points. The network needed a structured physical foundation that could support wired connectivity, wireless access, centralized management, and orderly network administration across the targeted areas of the medical college. This called for coordinated deployment across the cabling, rack, switching, and wireless layers. The infrastructure also needed to be validated after installation to ensure that the physical network, PoE delivery, wireless connectivity, roaming, and centralized controller communication were functioning as intended.

THE SOLUTION

DIGISOL provided an integrated networking solution spanning the passive and active layers of the infrastructure. Approximately 3,500 metres of DIGISOL Cat6 UTP solid cable was routed through secure conduits to establish local network drops. The cabling was terminated through DIGISOL modular patch panels and connected using DIGISOL Cat6 patch cords, with the network equipment housed within dedicated wall-mounted racks.

At the switching layer, DIGISOL Gigabit PoE switches were deployed to provide network connectivity while simultaneously supplying power to the wireless Access Points. The switches also featured SFP uplink capability, providing provision for future backbone connectivity and scalability.

The wireless layer comprised DIGISOL Wi-Fi 6 AX1800 ceiling-mount Access Points positioned across the targeted areas. A DIGISOL DG-WU2001 Wireless-AP Controller was deployed to centrally manage the wireless environment, including RF channels, transmit power, SSID broadcasts, and guest and staff authentication protocols.

Together, these components created an integrated network architecture in which structured cabling formed the physical foundation, PoE switching connected and powered the wireless layer, and centralized controller-based management provided a common platform for the deployed Access Points.

EXECUTION

The deployment began with the establishment of the structured cabling infrastructure. DIGISOL Cat6 UTP cable was routed through secure conduits to map network drops across the targeted areas. The associated patch panels were punched down, dressed, and labelled inside the network racks, creating a clean and organized termination environment.

The switching infrastructure was then installed within the racks. DIGISOL Gigabit PoE switches provided the connectivity required by the network edge while delivering Power over Ethernet to the wireless Access Points. This helped integrate the power and data requirements of the wireless infrastructure within the network architecture.

The Wi-Fi 6 Access Points were strategically mounted across the targeted areas, with the centralized wireless controller providing management of the deployed wireless environment. The completed infrastructure therefore combined wired connectivity, wireless access, PoE delivery, and centralized management within a single deployment.

BILL OF MATERIALS (BOM)

S. NO.	MODEL NUMBER	DESCRIPTION	QUANTITY
1	DGC-PP6U2L-1C	DIGISOL 24-Port Modular Loaded Patch Panel (1U)	4 Qty
2	DG-GS1028PF-B	DIGISOL 24-Port Unmanaged Gigabit PoE Switch + SFP (2U/2F)	4 Qty
3	DGC-PC6UMGY	DIGISOL Cat6 UTP Patch Cord (1 Meter, Grey)	60 Qty
4	DGC-SC6U4F-3GB	DIGISOL Solid Cable, Cat6 UTP, 4-Pair, 23AWG, FRPVC, Grey (305m Reel)	3,500 Mtrs
5	DG-WU2001	DIGISOL Wireless-AP Controller	1 Qty
6	DG-WM820AX	DIGISOL Wi-Fi 6 AX1800 Ceiling Mount Access Point / Router	25 Qty

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TESTING & VALIDATION

Following installation, the network infrastructure underwent a commissioning and validation process using standard network certification tools. The physical condition of the racks, switches, Access Points, and cabling paths was inspected before the active network was validated.

The structured Cat6 network drops were tested for continuity, split pairs, and wire-map correctness. PoE delivery from the DIGISOL switches to the deployed Access Points was also checked and confirmed.

The wireless infrastructure was validated for SSID broadcasting and Wi-Fi 6 handovers across corridors and rooms. The Access Points were successfully discovered by the centralized DG-WU2001 Wireless-AP Controller and were actively reporting to the controller, confirming connectivity between the wireless edge and the central management layer.

THE OUTCOME

The project resulted in a fully installed and commissioned wired and wireless network infrastructure for the targeted areas of Goa Medical College. The deployment brought together structured cabling, organized rack infrastructure, Gigabit PoE switching, Wi-Fi 6 connectivity, and centralized wireless management.

The completed infrastructure was physically inspected and functionally validated across the key network layers. With the cabling, PoE delivery, wireless connectivity, roaming, and controller communication verified, the network was confirmed as fully functional and handed over to the IT administration of Goa Medical College.

BUSINESS IMPACT

The deployment provides Goa Medical College with a structured foundation for managing wired and wireless connectivity across its targeted areas. By integrating the physical cabling layer with PoE-enabled switching and centrally managed Wi-Fi 6 connectivity, the project creates a more organized and manageable network environment.

The architecture also provides a foundation for future network expansion. SFP uplink capability on the deployed switches provides provision for backbone connectivity, while centralized wireless management allows the deployed Access Points to be administered through a common controller-based platform.

Most importantly, the project demonstrates the value of approaching network infrastructure as an integrated system rather than as a collection of individual products. DIGISOL's combination of structured cabling, switching, wireless access, and centralized management enabled the different layers of the network to work together as one commissioned infrastructure.

DIGISOL SOLUTION DEPLOYED

The deployment incorporated DIGISOL solutions across the network's passive and active infrastructure. These included DIGISOL Cat6 UTP solid cable, modular loaded patch panels, Cat6 UTP patch cords, Gigabit PoE switches with SFP, Wi-Fi 6 AX1800 ceiling-mount Access Points, and the DG-WU2001 Wireless-AP Controller.

