

A photograph of a group of students sitting on a large, green lawn in front of a university building. Some students are sitting in a circle, while others are standing or sitting in small groups. The scene is bright and sunny, suggesting a pleasant outdoor environment.

Wi-Fi Offload for Higher Education

Seamless Campus Mobility Without the Cost of DAS

Executive Summary

Higher education campuses operate as mobile-first digital environments where students, faculty, staff, visitors, and event attendees expect uninterrupted connectivity everywhere they go. From lecture halls and residence areas to student centers, stadiums, libraries, research spaces, and outdoor quads, reliable mobility is now an expected part of the campus experience.

At the same time, indoor cellular coverage gaps and rising data demand create challenges that traditional cellular solutions cannot economically address at campus scale. Wi-Fi offload offers a practical alternative by enabling secure use of trusted campus Wi-Fi for mobile connectivity.

For higher education leaders, the value is clear: Stronger campus mobility, better operational efficiency, and a more strategic return on network infrastructure already being deployed and managed. At a time when institutions face growing pressure to maximize technology investments, Wi-Fi offload extends the value of existing network infrastructure rather than introducing another standalone connectivity platform.

WHAT IS WI-FI OFFLOAD?

Wi-Fi offload enables continual, secure connectivity for mobile devices using both cellular and Wi-Fi networks. Transitions are automatic between the network using technologies such as Passpoint™ and OpenRoaming®.

For users, the experience is seamless. Devices can connect automatically without manual login, helping mobile connectivity feel more consistent in places where indoor cellular coverage is weak, congested, or difficult to improve economically.

For colleges and universities, Wi-Fi offload should be viewed as a complement to the campus network strategy, which remains the foundation for academic, administrative, residential, and student-life connectivity. Offload extends that infrastructure to support broader mobile-first usage. University IT teams are expected to support growing numbers of users, devices and applications with limited staffing. Wi-Fi offload extends existing operational processes rather than introducing another network platform to manage.

WHY HIGHER EDUCATION SHOULD CARE

- **Student experience and recruitment:** Connectivity is part of the campus experience. Reliable mobility supports satisfaction, retention, and overall perception of campus quality.
- **Campus safety:** Reliable mobile access supports emergency notifications, campus security operations, event management, staff communications, and public safety initiatives across indoor and outdoor environments.
- **Academic continuity:** Collaboration, hybrid learning, digital research workflows, and movement between spaces all depend on consistent connectivity.
- **Operational efficiency:** Wi-Fi offload builds on infrastructure already owned and operated by the institution, avoiding a separate cellular operating model.
- **Strategic infrastructure investment:** Universities have already invested heavily in campus Wi-Fi as the foundation for teaching, learning, research and student life. Wi-Fi offload extends the value of that investment by improving mobile connectivity through infrastructure that institutions already own, operate and trust.

WI-FI OFFLOAD VS DAS

Universities evaluating indoor cellular improvement often consider Distributed Antenna Systems (DAS). DAS can address specific coverage challenges, but campus-wide DAS introduces capital, carrier, design, and operational challenges that can be difficult to justify at an institutional scale.

DAS Challenges	Wi-Fi Offload Benefits
High capital cost	Leverages managed Wi-Fi infrastructure already being deployed or refreshed, no dedicated CapEx requirement.
Long carrier coordination and approvals process	Carrier involvement is a standards-based roaming agreement, not a per-site RF build.
Complex cellular RF design, construction, and deployment	Deployed with familiar Wi-Fi skills IT, MSP, and property teams already have.
Long timelines and multi-party dependencies	Deploys on the existing network using Passpoint or OpenRoaming (no multi-party rollout) in weeks not months.
Added operational burden and refresh complexity	One network to manage, no separate system to maintain.
Limited coverage flexibility/hard to re-tune after install	Coverage and capacity scale on the existing Wi-Fi platform; tune radios or add APs and cabling as demand grows.
Carrier/technology lock-in	Operator-neutral and standards-based supporting any participating carrier and evolves with Wi-Fi standards, no per-carrier rework.

PRACTICAL DEPLOYMENT APPROACH

1. **Build the Wi-Fi foundation.** Ensure strong coverage and capacity across lecture halls, libraries, student centers, residence halls, athletic venues, administrative buildings, event spaces, and outdoor campus environments.
2. **Enable secure offload.** Use Passpoint and OpenRoaming to support automatic, secure connectivity for eligible mobile devices and trusted identities.
3. **Operate with policy and segmentation.** Use centralized management, traffic separation, and consistent policy control to protect security, performance, and operational simplicity.

MARKET-SPECIFIC LENS: BUILT FOR CAMPUS MOBILITY

Higher education mobility is complex because campus users move continuously across academic, residential, athletic, administrative, and outdoor environments. A successful offload strategy should focus on the places where mobile expectations are highest and cellular coverage is most constrained.

- **Prioritize** high-density and long-dwell spaces such as libraries, lecture halls, student unions, residence areas, stadiums, and event venues.
- **Treat** Wi-Fi offload as part of the broader campus network lifecycle, not as a stand-alone cellular initiative.
- **Maintain** policy, segmentation, and identity controls consistent with institutional security practices.
- **Use** centralized management to support visibility and operational consistency across the campus footprint.

Cambium's ONE Network Approach

Cambium enables Wi-Fi offload through our unified ONE Network architecture that integrates Wi-Fi, switching, security, WAN/backhaul options, and centralized management through cnMaestro™ Network Management. This gives organizations centralized visibility, policy enforcement, segmentation, and operational consistency across sites.

For higher education, this unified approach supports diverse, high-density campus environments while allowing IT teams to manage offload within the same operational framework already supporting academic, administrative, residential, and student-life connectivity.

KEY ADVANTAGES

- Centralized management through cnMaestro
- Secure onboarding using standards-based offload capabilities
- Policy enforcement and traffic segmentation
- Scalable performance across simple and complex environments
- Simplified deployment and provisioning
- Reduced operational complexity compared to multi-vendor or cellular-centric approaches

The Bottom Line

For higher education, Wi-Fi offload is a practical way to improve mobile connectivity without the cost and complexity of DAS or dedicated cellular infrastructure.

It supports student experience, strengthens campus safety, enables academic continuity, and improves the return on institutional network investments. For universities looking to extend the value of existing infrastructure while delivering a more seamless mobile experience, Wi-Fi offload offers a scalable path forward.

Cambium makes that possible through our unified ONE Network approach that simplifies deployment, centralizes operations, and extends the value of existing Wi-Fi investments.

WHAT OUR CUSTOMERS SAY

"We were spending tens of thousands of dollars annually on a DAS-based solution. Working with WayFi and our Cambium Wi-Fi access points, we have eliminated that expense. We only set up 5 buildings, and our average offload is approximately a terabyte a month."

— Jeremy Petticrew, Network Engineer,
University of Mary Hardin-Baylor



Find Out More

See how Wi-Fi offload works in our guided demo:

<https://www.cambiumnetworks.com/guided-demos/wi-fi-offload-with-passpoint-cnmaestro/>

About Cambium Networks

Cambium Networks enables service providers, enterprises, industrial organizations, and governments to deliver exceptional digital experiences and device connectivity with compelling economics. Our ONE Network platform simplifies management of Cambium Networks' wired and wireless broadband and network edge technologies. Our customers can focus more resources on managing their business rather than the network. We make connectivity that just works.

