

ALE | Where
Everything
Connects



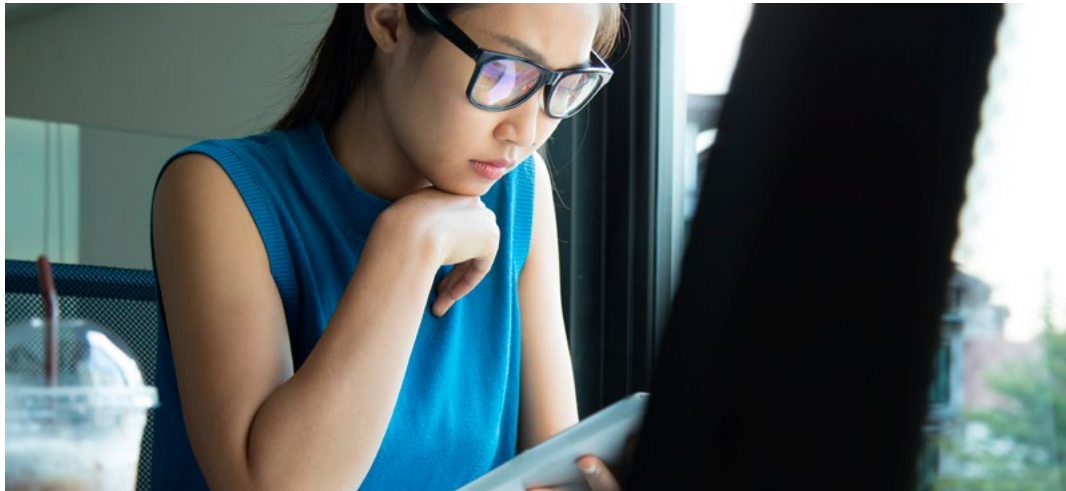
Education Wi-Fi selector report

Education report

Alcatel-Lucent OmniAccess Stellar WLAN Solution
September 2017

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Thank you for downloading this report on hardworking Wi-Fi. It is your personal guide to the solutions within the Alcatel-Lucent OmniAccess® Stellar WLAN product line, and how they help to deliver the services and resources your users need, wherever they need them.

ALE is working with education professionals all over the world to transform research, communication and collaboration for schools, colleges, universities and other educational institutions.

Simple, secure access

Your priorities for your wireless infrastructure are security, reliable availability and ease of management. These three factors serve to define the user experience, whether those users are students, teachers, management or administration professionals.

On a large, busy campus, or even on a smaller school campus, users must be able to move freely around the site, without worrying about losing coverage, or having to reconnect every time they arrive in a different room.

With OmniAccess Stellar WLAN, this expectation is met consistently at every location. Users are recognized wherever they are, and no matter what device they are using to connect to the network.

Multiple devices

You are almost certainly operating some form of bring-your-own policy, allowing users to connect their own devices, as well as those issued by your organization. The access control and security policies you need to apply will vary according to the type of user.

For example, teachers will require greater flexibility, and students may need additional layers of content filtering. Management staff may need to connect to back-office functions from their mobile devices, while teachers and students must be prevented from accessing these services.

Of course, the other challenge you face when supporting multiple devices is the sheer number of connections, disconnections and reconnections that the network must accommodate, from a vast array of different devices and operating systems, some of which are several years old. This is more than a question of bandwidth or capacity, because demand fluctuates continually every day. And when budgets are tight, over-provisioning is as bad and inefficient as under-provisioning.

The OmniAccess Stellar WLAN solution employs a distributed intelligent architecture, which allows the infrastructure to adapt in response to patterns of demand, with minimal management intervention. It also enables the simple deployment and enforcement of multiple security and access policies.

Education report



As an example, if a group of students are using videoconferencing to collaborate with students working on a project overseas, then the network will automatically assign the required capacity to the video traffic, reducing bandwidth for lower priority streams, and assigning more capacity from access points that are not experiencing high demand.

The product specifications and information in this report will tell you more about this, including capabilities such as beam forming, and multi-user/multiple input multiple output (MU-MIMO), which helps to boost data throughput.

Simplified management

IT teams in the education sector are often under-resourced, dealing with demands ranging from trivial user problems with software, to strategic projects such as system upgrades or the provisioning of services to a new campus building.

By simplifying the routine management associated with the wireless infrastructure, OmniAccess Stellar WLAN takes away much of the burden of administration from your IT team.

The intelligent architecture also allows you to deploy advanced network services, and to support applications that equip the organization with valuable new educational resources. These help to empower teachers, improve the educational experience, enhance the reputation of the institution, while helping to attract more students - and their associated funding.

This report includes details of the Alcatel-Lucent OmniVista® 2500 management platform, which provides a single, unified interface for your WLAN and your LAN infrastructure.

Future-ready wireless

This document is an initial guide to the solutions you may need for your organization. For a more detailed consultation and assessment, get in touch with us. One of our education specialists will discuss with you your specific requirements.

In particular, the education specialist will consider the future requirements of your wireless LAN. Demand for wireless connectivity is only going to increase as students arrive every year with a greater variety of devices.

At the same time, the Internet of Things (IoT) is already automating many operational functions for educational institutions, from heat and light, to security systems and entry controls. In effect, the IoT creates a whole new and numerous school population, which has the same requirements for secure access, continuous availability and intelligent management.

OmniAccess Stellar WLAN technology is ready for Wave 2 Wi-Fi, which brings even greater capacity and intelligence to your infrastructure. Our experts help you plan for the future, building in efficient scalability to your existing investment.

We hope you find this report relevant and valuable. Once you've read it, please get in touch with us at: www.al-enterprise.com/contact-us

Education report



A future-proof network for education

In education you need to meet the expectations of tech-savvy students who expect to be connected wherever they are. Nowhere more so than universities, where connectivity is essential for everyday living - from sharing through social media, interacting with neighbors, and participating in groups that go far beyond the campus. All this requires a wireless network that has high capacity, is fast and reliable so that you can deliver:

- **Anywhere, anytime, anyhow education** - from blended learning at home and on campus to personalized curricula and game-based learning
- **Updating educational technology** - with limited staff resources:
 - Teachers - wanting easy-to-use technology that helps them engage more with students
 - Administrators - looking for simpler, efficient operations
 - IT - needing easy-to-administer, cost-effective, reliable technology
 - Education leaders - searching for technology to differentiate their organization
- **Securing the network from cyberattacks and misuse** - whether that is protecting against ransomware attacks or attempts to steal confidential data, IT needs to limit who can access what and when.

Mobility for the digital campus

With our global reach and local focus, the ALE architecture provides the digital foundation to drive education networks. The OmniAccess Stellar WLAN product line offers affordable, top-grade features with easy-to-use simplicity.

It does so through:

- **High-performance Wi-Fi** - that gives you better coverage, more bandwidth and controls every device for smarter connectivity in high density areas such as classrooms, hallways and football stadiums
- **Unified access** - for students and staff to have seamless access across campus
- **Greater IT efficiency** - with a network that's simple to deploy and manage, which is especially important when IT resources are limited
- **IoT containment** - for a secure, automated and intelligent environment
- **Easy scalability** - with a network that can adapt to meet the emerging demands of education technology



Flexible solutions for every campus

Our hardworking Wi-Fi suits any education environment.

Small WLAN	Medium-sized WLAN	Large WLAN	Multi-site WLAN
<p>For compact, self-contained sites such as a school or study center.</p> <p>Entry level APs AP1101</p> <p>For linking several smaller sites or parts of a campus, such as school or student blocks.</p> <p>Mid-level APs AP1221 - built-in antenna AP1222 - external antenna connectors</p> <p>Outdoor AP1251</p> <p>Standalone deployment Wi-Fi Express</p>	<p>Reliable, efficient coverage for local schools and education centers.</p> <p>Mid-level APs AP1221 - built-in antenna AP1222 - external antenna connectors</p> <p>Outdoor AP AP1251</p> <p>Managed deployment Alcatel-Lucent OmniVista 2500</p> <p>Distributed Intelligent Architecture</p> <p>Location-based services Alcatel-Lucent OmniAccess Stellar Indoor Location-Based System</p>	<p>Fast, cost-effective coverage across the whole education campus.</p> <p>High-end APs AP1231 - built-in antenna AP1232 - external antenna connectors</p> <p>Mid-level APs AP1221 - built-in antenna AP1222 - external antenna connectors</p> <p>Outdoor AP AP1251</p> <p>Managed deployment OmniVista 2500</p> <p>Distributed Intelligent Architecture</p> <p>Location-based services OmniAccess Stellar Indoor Location-Based System</p>	<p>Connecting several sites into a single WLAN, such as linked campuses.</p> <p>High-end APs AP1231 - built-in antenna AP1232 - external antenna connectors</p> <p>Mid-level APs AP1221 - built-in antenna AP1222 - external antenna connectors</p> <p>Outdoor AP AP1251</p> <p>Managed deployment OmniVista 2500</p> <p>Distributed Intelligent Architecture</p> <p>Location-based services OmniAccess Stellar Indoor Location-Based System</p>



Built for enhanced learning

The OmniAccess Stellar WLAN product line provides a simple, efficient enterprise-grade solution to provide the best user experience for staff and students, campus-wide.



Entry level

AP1101

At 3x the speed of previous industry standard access points, the AP1101 is designed specifically for use in a smaller school or study center.

- The 802.11ac Wave 1 access points are plug-and-play with up to 1.2 Gb/s throughput
- Fine-tuned for specific applications such as voice or video
- Especially cost-effective for smaller wireless networks
- Simple to use for user account creation and management with no IT skills needed
- Scale up to **32 APs** (AP1101 **only** cluster)



Mid-level APs

AP1221 - built-in antenna

AP1222 - external antenna connectors

These access points support the latest Wi-Fi standard, 802.11ac Wave 2.

- High-speed Wi-Fi with up to 2.2+ Gb/s throughput
- Better user experience through a higher density of devices with no performance drop
- Optional Bluetooth low energy beacon radio makes location services possible
- Scale up to **64 APs** in a cluster



High-end APs

AP1231 - built-in antenna

AP1232 - external antenna connectors

These access points have a rapid 4.2+ Gb/s throughput.

- Best radio coverage high-speed Wi-Fi is simple to deploy and scale
- Supports a higher density of devices with no drop-off in performance for a better user experience
- Easy monitoring of locations and tracking of people and educational assets using embedded Bluetooth low energy beacon radio
- Scale up to **64 APs** in a cluster



Outdoor AP

AP1251 - built-in antenna

Designed to work well in any weather conditions.

- Reliable Wi-Fi performance supporting 802.11ac Wave 2 with a data rate of 1.2 Gb/s
- Fast, dual-radio operation with best-in-class RF management
- Flexible deployment with two gigabit link ports, one for the network and one for a device, such as a surveillance camera
- Scale up to **64 APs** in a cluster



Access point management



Standalone deployment for smaller campuses: Wi-Fi Express

This lets you manage any of the Stellar WLAN access points direct from your web browser. Access points are automatically added and it's simple to set up who can have wireless access – when, where and for how long – through a management portal. Supports up to 64 Stellar access points (32 access points if it's an AP1101-only cluster).

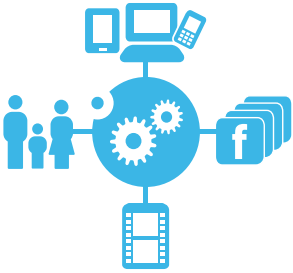


Managed deployment: OmniVista 2500

Save time and money and provide a seamless user experience with unified management of both your LAN and WLAN, through a single dashboard:

- **Secure mobility** – with best quality of service across the whole campus
- **Smart analytics on network activity** – so you can maximize available bandwidth limiting some applications, such as social network traffic, while prioritizing teaching and business applications for staff and administrators
- **Access management for faculty and staff** – using rule-based policies to set access criteria and automatically on-board devices
- **Quick and easy scalability** – up to 512 access points*

* OmniVista 2500 required for more than 64 APs



Distributed Intelligent Architecture

Uniquely, OmniAccess Stellar WLAN distributes intelligent control to each access point. This allows:

- **Better radio coverage** – with automatic choice of the best frequency and channel to avoid interference
- **Maximum bandwidth allocation** – so devices can support more clients
- **Superior user experience for each client device** – automatically connects devices to the highest capacity access points
- **Fastest speeds** – even for older devices through airtime fair access
- **More reliable network coverage** – through a self-healing network
- **Best quality of service** – with automated services not impacting the user experience



Secure, separate education networks

ALE's single network infrastructure, wired and wireless*, also makes it easy to create function-specific networks. You can have a **teacher network**, exclusively for devices used by faculty, a **security network**, for security cameras, access control and intrusion detection, a **facilities network** and an **administration network**. Although they use the same network infrastructure, IoT containment means they are securely separated from each other.

*When used with an ALE LAN Solution



Location-based services

OmniAccess Stellar Indoor Location-Based System can monitor locations, track people and educational assets using optional or embedded Bluetooth low energy beacons and scanners. These can allow you to provide new personalized educational services, such as:

- **Way finding** – map-based directions around campus, with information personalized to students and visitors
- **Improving campus operations** – by identifying the peak hours at facilities that can get busy, such as a library, action can be taken to prevent overcrowding
- **Focused learning** – geofencing enables the delivery of specific course materials to students as they arrive in the classroom
- **Promotions** – such as restaurant offers or special deals from shops around or near the campus

For a more detailed consultation and assessment, please contact us today and one of our education specialists will be happy to advise you.

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Connected Education

Where education connects with technology that works. For your school, college or university. With global reach and local focus, we deliver purpose built networking and communications for the education environment that enable secure, reliable collaboration between your faculty and students.

ALE

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