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Deploying Algo IP Solutions for the Education Vertical

A Case Study: Ontario-Based School District

Deploying Algo in the Education Vertical

For most education environments, public address and emergency notification systems are critical infrastructure for both daily operations and emergency situations. Commonly, educational institutions require an open standard network-based technology for building and campus communications to integrate with hosted / cloud or premise-based VoIP telephone systems.

Algo IP endpoints are 3rd party SIP compliant. These devices eliminate the limitations of an ATA or FXS port and provide convenient web-based network management and supervision. All the endpoints are multicast scalable and can be deployed to cover any size building or campus. Common central provisioning protocols are supported, as well as TLS and SRTP.

The Algo paging portfolio includes a variety of Wideband HD Voice talkback speakers (wall / ceiling / horn), speaker-clock endpoints, paging adapters, strobe lights and push buttons. These endpoints support applications for voice paging and emergency alerting, as well as bell scheduling for automating tones and announcements. Algo doorphone / intercoms are audio and video capable for visitor communication and secure entry using any telephone or device.

Example of Deployment of Algo IP Endpoints

An Ontario-based school board recently completed a large-scale overhaul of their communication systems leveraging Algo IP Endpoints. To set the stage, this school district faced a few unique challenges:

1. This school district has many of its schools geographically dispersed over a 15 000 square km area with a 16-hour drive time between the two furthest schools. Winter conditions also make it exceedingly difficult to travel between schools.
2. Over the years, many different manufacturers' systems had been installed in the schools to address requirements such as paging, school bells, clocks, playing the national anthem, emergency procedures. Many of these systems are antiquated and very labor intensive to administer and maintain. The board was having difficulty finding parts and resources that could service the older equipment.
3. The board also has a transient workforce, so different principals, teachers, and administrators moving between sites. This caused confusion as procedures were not standard at the sites as they had equipment from different manufactures dictating how things would be done specific to a site. Another issue was these older systems could not be monitored to ensure they were working correctly.

The IT department was tasked with reviewing the current mode of operation in the schools. Senior management wanted a system that would address their issues and allow them to have a standard operating procedure (SOP) across all 32 of their schools. The new system was to be IP-based and interface with the customers existing UC System. Remote management capabilities were a requirement to avoid costly technician dispatch to the schools. The system had to be based on open standards, easily expandable, have monitoring capabilities, and be capable of providing the desired features:

- Classroom speakers needed to have an integrated Clock.
- The speakers were to be surface mounted.
- Bi-Directional communication between the office and the classroom was mandatory.
- The speakers needed to be capable of adapting to increased noise levels in the classroom

Algo worked closely with the integration partner and customer to design a solution to address the boards district wide requirements.

In each classroom, the **Algo 8190S Clock Speaker** was chosen. This surface mounting speaker with Digital clock, integrated call button, and microphone, addressed the customer's requirements. The speakers were SIP registered to the UC system to facilitate two-way communications directly with each classroom. To address fluctuating noise levels in the classroom, the 8190's ambient noise feature was turned on enabling speakers to self-amplify as required . Users also experienced "HD Voice" with the wide-band G722 Codec when receiving pages over the new Algo speakers and the feedback from users was very positive.

In gymnasiums, shop classes, and outdoors, the customer requested loudspeakers to address these environments. The **Algo 8186 Horn Speaker** was deployed in these scenarios. This weatherproof loudspeaker provided the volume levels needed in large spaces and outdoors. The Algo 8186 is IP66 rated to use in wet and outdoor environments. The customer also paired the **Algo 8128 SIP LED Strobe Light** with speakers in challenging environments to provide a visual indicator for voice pages and emergency events.

Algo 8190S IP Clock Speaker with Strobe

Hundreds of speakers had to be replaced in the hallways and common areas. The **Algo 8188 SIP Ceiling Speaker** was deployed to address this requirement providing the ambient noise feature and wideband HD voice quality throughout the hallways and common areas.

Algo 8186 IP Horn Speaker

Bell scheduling and master clock controls were huge issues for the board. The systems were old and difficult to manage with no customization available, and keeping everything synchronized was an issue, needing regular adjustments to the multiple systems. Hence, the new system needed to have a web-based interface to program the bell schedules. Having the ability to load custom tone files to the system was a requirement as well.

An **Algo 8301 SIP Paging Adapter and Scheduler** was deployed at each school. The Adapter has a simple calendaring application that any administrator could log into over the network and easily configure their bell schedules for class changes.

The school district removed dozens of old analog paging amplifiers and headend equipment. Thousands of old analog speakers were removed as well as the associated wiring none of which could be monitored or remotely managed.

With the new IP paging solution, the school district's IT team wanted the ability to monitor their entire solution. **Algo 8300 Controller** provides a convenient single-pane view of all Deleted Algo SIP IP devices on a school's subnet, so administrators can quickly find a device on the network when required.

Having web access to any Algo device on the network allows IT personnel to easily adjust settings, such as volume levels and page zones, reducing truck rolls significantly. Troubleshooting is simplified as the Algo devices report on their status. The support staff can be quickly notified of an issue via email if an error condition occurs, allowing them to address the problem proactively.

Decision, Outcome and Looking to the Future

The school board ultimately selected a full Algo IP solution. Their decision to move forward with a complete IP solution was predicated on several critical drivers.

- Reliability and ease of maintenance
- Reduce costly dispatch scenarios
- Increased functionality
- Ease of use for the end-user
- A standard operating procedure for paging and lockdown across the entire district
- Ability to simplify the overall system for use and management.

Algo recently launched new technology that many customers will benefit from. A single PoE + speaker can power up to three satellite speakers. Now a single PoE + drop can drive four speakers not requiring a home run network drop for each speaker deployed.

For large deployments of IP ceiling speakers in applications such as schools, the **8198 IP PoE+ Ceiling Speaker** can provide significant savings when combined with one or more **1198 Satellite Ceiling Speakers**.

Satellite speakers are connected to the 8198 in a daisy chain fashion using CAT5/CAT6 standard patch cables. Each 1198 Satellite Speaker attached is detected by the 8198 IP Speaker automatically and can be monitored for connectivity. The number of attached satellite speakers is displayed in the 8198 web interface.

Power is automatically shared equally between the 8198 IP Speaker and 1198 satellite Speakers. The 8198 PoE + speaker has 16 watts of power on its own; when a satellite speaker is attached both speakers have 8 watts of available power. With a second satellite the three speakers have 5.3 watts available and when a third satellite is connected, each speaker has 4 watts of power available.

Algo Satellite Speaker technology brings significant benefits to schools as the unique technology reduces costs (decreased network drops, decreased SIP licenses, and lower material/labor costs) while maintaining all the critical benefits of IP solutions, including:

- All speakers are fully supervisable.
- IP Speakers and Satellite Speaker look and sound identical.
- All core Algo IP Speaker functionality maintained.

Algo also offers the Satellite Speaker technology in Horn Speakers with the **8196 IP PoE+ Horn Speaker** and **1196 Satellite Horn Speaker**.