



A Division of Connexon

K-12 Education: E911 Solution Enhances Safety for Multi-Campus Schools

Success Story

At-A-Glance

The Organization

Hamilton/Clermont Cooperative Association (HCCA)

- Provides voice over IP (VoIP) phone service for over 50 public/private K-12 school buildings in Greater Cincinnati
- VoIP services are provided using Cisco Unified Communications Manager (CUCM) version 6
- 2,200+ IP phones and 30+ off-site employees

The Challenge

- Provide highly granular location provisioning to enhance the safety and security of students, teachers, and staff
- Route calls to the appropriate PSAP for all schools receiving VoIP service
- Provide E911 support for off-site employees
- Simplify IP phone management for E911 purposes

The Solution

Implemented the 911 Enable Emergency Gateway and Emergency Routing Service to:

- Increase the level of location granularity, based on the needs of each school
- Route E911 calls to the appropriate PSAP for every school and employee on the network
- Allow off-site employees to update their locations in real-time directly from their Cisco softphone
- Automatically track IP phones on the network to reduce administrative burden

The Organization

The Hamilton/Clermont Cooperative Association (HCCA) is an Information



Technology Center (ITC) established by the state of Ohio to provide data processing and IT services for K-12 schools in the Greater Cincinnati Metropolitan Area. As part of this mandate, HCCA provides VoIP phone services for over 50 public and private schools, using Cisco Unified Communications Manager.

The Challenge

As a VoIP service provider for public and private K-12 schools, HCCA needed to provide reliable and accurate E911 services in case of emergency. However, a 911 call placed from a school remotely accessing the centralized Cisco Unified Communications Manager (CUCM) would not necessarily be routed to the Public Safety Answering Point (PSAP) in the caller's area. Instead, the call would be routed to the PSAP serving the location of the CUCM.

Originally, some schools installed local gateways and analog phone lines to connect to 911 services, while others used PRI trunks. The former E911 solution was costly and provided only basic functionality. The latter required complicated and time-consuming integration with the local exchange carrier (LEC), and could take up to three weeks to secure E911 support whenever a new phone or location was added.

Both solutions had burdensome set-up and maintenance requirements, and neither allowed the schools to specify emergency response locations (ERLs) to the level of granularity required to quickly locate distressed callers. As well, HCCA needed to provide E911 support for more than 30 off-site employees using Cisco softphones who frequently moved locations between their homes and the HCCA office. These employees needed to be able to update their location information in real-time as they switched locations, so their 911 calls would be routed to the appropriate PSAP with accurate location information.

HCCA also wanted a solution designed for IP telephony, not simply an adapted legacy solution.

The Solution

HCCA selected 911 Enable's enterprise E911 solution, comprised of the Emergency Gateway (EGW) and the Emergency Routing Service (ERS), to address their E911 challenges.

The EGW is an on-site appliance that automatically tracks IP phones on the network. The EGW's user-friendly administrative Dashboard makes adding, deleting or changing additional ERLs simple and easy, and these locations can be provisioned to the level of granularity required (i.e. floor, room level).

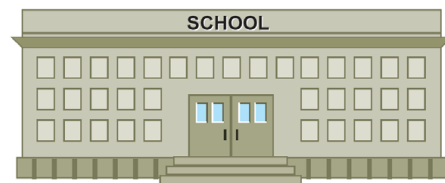


The ERS is a hosted subscription service that routes 911 calls and location information to the appropriate local PSAP. It provides E911 coverage across the US, to ensure every 911 call reaches the appropriate PSAP in times of crisis.

Granular Location Provisioning:

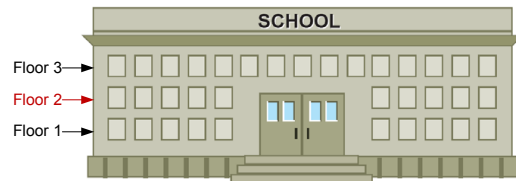
The ERS allows locations to be provisioned to the level each school requires. Some require that locations are defined on a per building level. Others require that each floor within the school is defined as a separate location. Others still require that locations are defined to the room level. When 911 is dialed, the PSAP is provided with location details to the level of granularity specified by each school.

Scenario 1: Provisioning Locations per Building



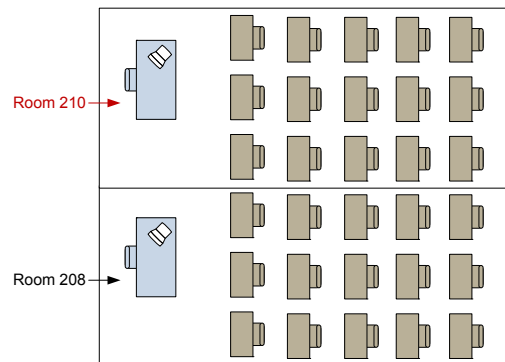
123 Main Street, Cincinnati, OH 45231, **Building 1**

Scenario 2: Provisioning Locations per Floor



123 Main Street, Cincinnati, OH 45231, **Building 1, Floor 2**

Scenario 3: Provisioning Locations per Room



123 Main Street, Cincinnati, OH 45231, **Building 1, Floor 2, Room 210**

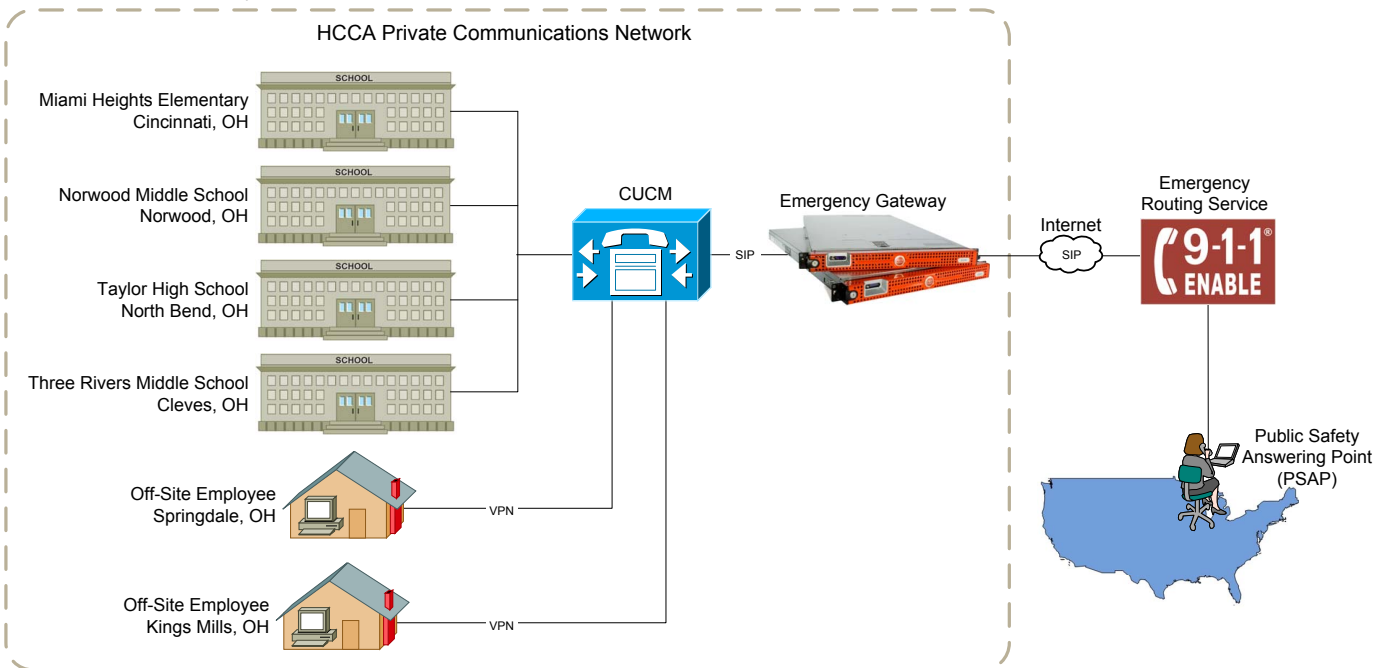
Nationwide E911 Call Routing:

With E911 connectivity to over 5,500 PSAPs across the US, the 911 Enable ERS provides all HCCA school locations and off-site employees with accurate E911 call routing. When 911 is dialed from any HCCA location, the CUCM forwards the call to the EGW. The EGW determines the accurate location of the caller based on the phone's IP address, and sends the call and location information to the ERS. The ERS then uses the call data sent by the EGW to determine the correct PSAP, and routes the call accordingly. The caller's correct location and callback number are automatically displayed on the PSAP dispatcher's screen.

“911 Enable has given us the control and flexibility to manage our E911 solution according to our priorities and requirements. We’ve been able to enhance the safety of our students, teachers, and staff, while keeping costs low.”

Frank Williams
Chief Technical Officer, HCCA

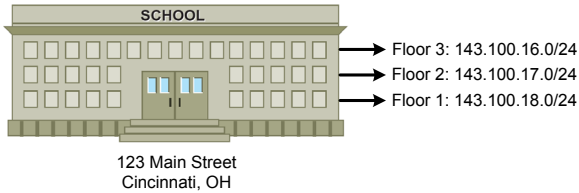
Partial HCCA Deployment



Automatic IP Phone Discovery:

Whenever an IP phone registers on HCCA’s network, its location is automatically discovered by the EGW, using layer 3 (subnet-based) tracking. This feature provides HCCA’s users with the flexibility to take their IP phones anywhere on the network and maintain accurate E911 service without needing to engage telephony administrators.

Example: HCCA School with IP Addresses Provisioned per Floor



Support for Off-Site Employees:

The EGW includes a Remote Location Manager (RLM) application that allows off-site employees to update their locations in real-time directly from their Cisco softphones. This ensures that emergency calls from off-site employees will be routed to the appropriate PSAP with the correct location information.

Screenshot: RLM Location Provisioning System



Crisis Alert Emails:

When 911 is dialed from a phone on the network, the EGW sends a notification email to a designated distribution list. The email contains the caller’s precise location information and a 10-digit callback number, in case the 911 call is dropped. HCCA has specified its distribution lists by ERL, which ensures that the appropriate personnel at each school or location are made aware of every emergency situation.

Call Recording:

Call recording is included in the EGW’s suite of reporting and monitoring tools. This feature allows HCCA administrators to access and review all emergency calls placed on the network.

Looking Forward

With the flexibility to automatically track IP phones, route calls to PSAPs across the country, and provide highly granular location provisioning, HCCA may now offer VoIP phone service to other schools in the state of Ohio. Their barrier to expansion, namely the ability to provide accurate E911 service, is now removed, and HCCA can contemplate enabling more schools with IP phone capabilities. HCCA may also deploy 911 Enable’s Desk Alert application, to further enhance their emergency notification capabilities.

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Visit www.911enable.com

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Additional Resources

Emergency Gateway Data Sheet

http://www.911enable.com/pdf/emergency_gateway_datasheet.pdf

Emergency Routing Service Data Sheet for the US

http://www.911enable.com/pdf/emergency_routing_service_datasheet.pdf

E911 Solution for Cisco Unified Communications Manager

<http://www.911enable.com/solution-briefs/e911-solution-for-cisco-unified-communications-manager>

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