

# InduSoft Web Studio Brings Security to Juvenile Facility

Web Studio software runs the access control system, controls electrical systems, and listens in on detainees.



*Video cameras monitor access to Eaton County Youth Services, while InduSoft's Web Studio software helps the staff listen to the rooms and work areas.*

- Legacy software system was no longer supported, and had to be replaced
- InduSoft Web Studio software automates room monitoring functions and controls access to the building
- Local InduSoft rep, HMI/SCADA Systems, handled the entire job
- Installation and configuration took one day.

## Background

The Eaton County Youth Services juvenile treatment and detention facility in Charlotte, Michigan, this 24 bed facility houses young people deemed to have “behavioral challenges.” To reduce problems with the detainees and monitor their movements, security personnel used an aging computer system to listen to sounds in each detainee’s room and other areas of the facility, so they could identify abnormal sounds, movements or activities.

The problem was the existing system used Nematron Paragon software that was at the end of its life, was no longer available and no longer supported. Only one maintenance person on staff knew how to program it. The system also controlled electrical circuits, electrical door latches and television sets via Opto 22 I/O, but the existing system was difficult to change if new equipment was installed.



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The system was not completely automated, causing the operator to rely on manual procedures. For example, if the operator wanted to listen to certain rooms, he or she had to select each room manually on the HMI terminal, listen, and then manually move to the next room.

Finally, the system could not produce the kinds of reports needed to identify problems in the detention facility. Supervisors had to rely on written reports by the operators.

Change was needed. The facility decided to upgrade the existing control system to more modern hardware and software.

### Listening for Problems

According to Karen Gonser of Eaton County Youth Services, “We are a Detention and Treatment facility. Our residents range from violent offenders to youth having severe problems in their home, school, and community. Our main concern in monitoring the rooms is to ensure that we are able to respond quickly to the needs of our detainees.”

What the facility needed was an automated scanning system that would listen for problem sounds via the intercoms in each room. The old system was able to listen, but it couldn't



*Access control panel on external doors.*

“scan” the rooms; that is, it could not listen for problems in one room, automatically move on to the next room, and—in a short time—allow the operator to listen to every occupied room in the facility.

The new system also had to control access to the building. If someone wanted to enter, an electronic call button would alert the operator, who would unlock the door from the HMI terminal. The system also monitored the position of doors to hearing rooms and administration offices, and report if the doors are locked or unlocked.

When considering a new system, Gonser wanted it to be able to generate activity reports, which the old system could not produce. “I wanted to be able to see a report that told me which doors had been opened at what time, which detainees presented problems, and the response of the staff,” she said.

### The InduSoft Web Studio Solution

Gonser consulted with Ken Jones, Principal at HMI/SCADA Systems Corporation and the local representative of Nematron and InduSoft. “We called in Ken because he was our Nematron rep, and we knew he had plenty of experience with the Paragon software,” said Gonser. “We outlined what we wanted, and Ken proposed a solution based on new HMI terminals and InduSoft Web Studio software.”

Jones and his engineers brought over two decades of software and automation experience to this application. InduSoft Web Studio was chosen because of its ability to meet all of the facilities' needs and then some. The capability to connect to the existing Opto22 control system allowed enhancements without the additional cost of completely replacing the control architecture.

“We were able to interface to the existing Opto 22 I/O easily via RS-485, using drivers built into InduSoft Web Studio,” explains Jones. “Configuring the system in Indu-

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Soft Web Studio to do what Eaton County Youth Services needed, creating the operator displays, and producing reports was fairly simple because of the capabilities of InduSoft Web Studio.”

The control system application development took about a week. The installation and configuration took a day, says Jones.

The new system is based on an IVC Displays industrial computer with a 19-inch color touchscreen, Windows XP, and InduSoft Web Studio software. The system was installed next to the existing Paragon system, and ran in parallel during configuration and setup.

The main operator screen shows an overall view of the facility. Icons illustrate the status of each intercom, door latch control and call buttons. As the system automatically listens to each room, the intercom will change from blue (off) to yellow (audio monitoring). If the icon turns red, it means the Intercom Call Button was pressed and not yet answered.

Because operators don't monitor vacant rooms, a Scan Settings screen allows the operator to select which rooms are to be scanned automatically. The system will scan each room in sequence according to the profile; listen for five seconds, and then move on to the next room. Upon completion of a profile, the scan begins again. This allows the operator to listen to 12 rooms per minute, and the entire facility can be scanned in three minutes.

If the operator detects a problem, the Pause button stops the scan and remains listening to the intercom microphone until the operator presses the Resume button. An Override feature allows the operator to turn off all intercoms that are on and answer an intercom call button. Otherwise, the rooms being monitored would hear the operator's voice. For example, the operator may be listening to the intercom

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*—Karen Gonser of Eaton County Youth Services*

in the classroom, Seg Room and rooms 9, 10 and the classroom when a call button is pressed in room 8. The operator presses the Override button, and responds to the call. When the call is complete the operator presses the Override button again and the previous intercoms are turned on so he may resume listening. With the old system, when listening to all resident rooms and an intercom call button was pressed, Control staff would have to ask all residents who buzzed and if there was a noise in one room they could not tell which room it was coming from. With the new system, the operator will see the icon turn red to show a call from the intercom.

While the system monitors the status of all doors inside the facility, doors leading outside or to the balcony are of particular concern. If anyone presses a call button on an outside door, the system flashes a warning to the operator that the door leads outside. Similarly, if any outside door is opened, a warning will appear on the screen. “While we are interested in monitoring movement inside the facility, we want the operator to be notified immediately if anyone tries to leave the building,” says Gonser.

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The system also allows the operator to monitor and control lights and televisions in the facility. Touching the light and TV icons on the screen toggles the devices from On to Off or Off to On.

Karen Gonser says, “The system is operating as we envisioned. It has been great to have Ken involved; he has been very responsive to our needs, without any delay. He has been able to meet our every expectation and helps us to update the system based on new needs.”

*Operator screens are not included in this article because this sensitive information may jeopardize the security of Eaton County Youth Services.*



*Workers can monitor the status of doors, control access to the building, and listen to rooms from the control station.*

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**For more information contact your local distributor or InduSoft directly at [info@indusoft.com](mailto:info@indusoft.com) or 877-INDUSOFT (877-463-8763) or 512-349-0334.**

