

Communication integration made easy

Kevin Uhlig *underlines the importance of communications systems in a detention environment and details how the Central East Correctional Centre in Lindsay, Ontario has successfully addressed the problem.*

In 1996 the province of Ontario, Canada began transforming its adult correctional facilities into modern, state-of-the-art structures with an emphasis on safety, security, efficiency and accountability. Old, smaller jails, some in service for over 150 years, were to be replaced by new regional or 'superjail' facilities utilizing modern technology.

The Central East Correctional Centre in Lindsay, Ontario was constructed as a result of the government's initiative. Completed in the spring of 2002 after three years of construction, the Central East Correctional Center, also known as the Lindsay Jail, is a 1,184-bed maximum security facility that houses convicts with sentences from 60 days to two years less-a-day, plus those in custody awaiting trial.

The Lindsay Jail is built on approximately 35 hectares of land and is approximately 10 acres under roof. It consists of six interconnected two-storey, octagon-shaped housing units, each with 192 beds. The center includes 21 different security systems, including CCTV, door control, intercom/paging, duress, perimeter fence, and public address, all operated under touchscreen control.

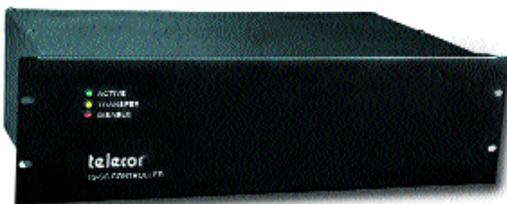
Vipond Systems Group of Mississauga, Ontario was awarded the contract to install and configure the security systems at Lindsay Jail. For the intercom/PA system, Vipond chose the T3 Security Communication System, made by Canadian manufacturer Telecor Inc.

"The Telecor T3 has advanced features which make it ideal for the level of security integration required by the corrections market," according to Scott Brown, engineering manager for Vipond Systems Group. "It is flexible, scaleable, and can accommodate multiple applications in different types of facilities, such as jails, detention centres, courthouses and large correctional centres."

For the Lindsay Jail, there are a total of 16 T3 controllers responsible for intercom station and paging communications. Not only is each T3 controller an independent system responsible for communications within its own designated location, but each is also part of an overall distributed T3 network. This allows for communication between the different T3 systems and provides for control to be transferred or taken over by other T3 systems in the facility.

A major strength of the Telecor T3 is its ability to integrate itself into a facility's security system. The Telecor T3 was designed from the ground up with integration specifically in mind. It is an intelligent, fully-operational communication system that does not require an external control system, such as a PLC or PC, to handle any communication functions, such as annunciating call-ins, sounding tones, managing communications hardware or tracking call status.

The Telecor T3 controller – the heart of the Lindsay Jail's security communication system.



SECURITY COMMUNICATION SYSTEMS



Having the intelligence to manage its own communication functions relieves the integrator of complex and time-consuming programming.

Various communication consoles are available for the Telecor T3, including traditional telephone-style desktop consoles and standard or customizable communication panels for rack or desk-mount installations. Station selection can be conducted through selector and graphic panels, or PC-driven touchscreens.

For the Lindsay Jail, touchscreen stations are used to operate the facility's integrated security system. Integrating the various systems for touchscreen control was the responsibility of Habtech Communications of Mississauga, Ontario. Its Smart Touch ST2000 Security Management System, utilizing LonWorks technology, was employed to accomplish the challenging task. The ST2000 integrated virtually all of the center's functions onto 45 networked touchscreen computers with graphical user interfaces.

Because the T3 Communication System includes the intelligence to operate independently, the ST2000 was not required to manage intercom and paging functionality. According to Julian Nowak, system integrator at Habtech, "our controllers are not required to keep track of the audio operation, and so there is a lot less to manage on our part. Our responsibility mainly falls into just providing the touchscreen interface."

With the T3 system, complete touchscreen integration is easily achieved without any complex programming. The vast majority of intercom functionality is accomplished with a single serial message – the same message, regardless of the circumstances – from the touchscreen. In turn, touchscreen icon indicators are activated from serial messages sent from the T3, which are triggered as a result of standard intercom

functioning, such as when a call-in is answered.

For the Lindsay Jail, complete intercom functionality, including supervision, call routing, control lockouts, zone paging, login, etc., is achieved with just 14 messages sent from the touchscreen. For icon indication purposes, the T3 is only required to send just 15 messages to the touchscreen.

The protocol used by the T3 is adaptable for system integration. Messages received by the T3 can be readily accepted in the proprietary format of the touchscreen. In turn, messages sent by the T3 can be easily modified to suit the touchscreen protocol. Because each T3 is part of a distributed network, the transmission of messages can occur at any point required by the system integrator.

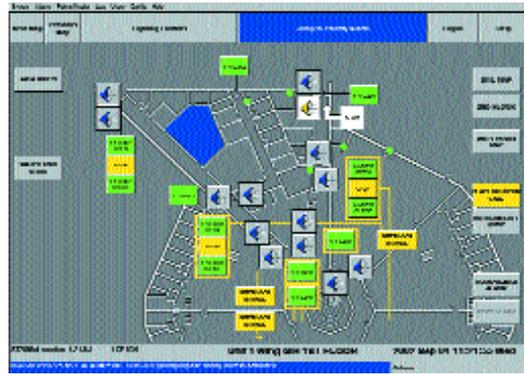
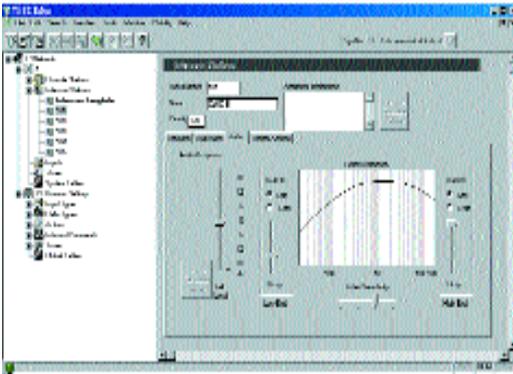
Configuring a T3 system to a customer's specifications is conducted with T3 Editor software. The T3 Editor is a Windows-based application that allows a technician to set up field devices for proper operation and take advantage of the advanced features of the T3 system.

One of these advanced features allows the technician to electronically adjust the audio quality of each intercom station so that optimum sound quality can be heard at the console end. Most cells have poor acoustics due to hard concrete walls. The process, which allows for the adjustment of the audio level, listen frequency response and listen sensitivity improves audio intelligibility in the cell by shaping the characteristics of each intercom station to the acoustical environment of its location.

"Electronic audio adjustment eliminates the need for the technician to enter inmate-occupied areas to change the volume level of a station," explained Brown. In a prison environment, this means the technician does not have to go through

An external and internal view of the recently constructed Lindsay Jail, which has benefited from the installation of a networked security communication system.

Messages sent by the T3 can be easily modified to suit the touchscreen protocol



The Telecor T3 Editor and touchscreen interface.

time-consuming safety procedures to get to certain locations, and it allows him to avoid locations that he may feel apprehensive about. In addition, the process prevents any of the ‘clicking’ that is commonly heard in traditional intercom systems when a station is connected. To enable the technician to immediately effect changes, audio adjustment can be heard in real-time.

The T3 features a built-in dual channel programmable tone generator, which precludes the need to purchase and install external equipment for a facility’s tone-generating requirements. The tone generator has the capability of reproducing a wide range of notes on the diatonic musical scale, which allows for a diverse range of tones to be created, such as bells, sirens, buzzers, etc. Applications in which the tones can be applied include intercom station call-ins, paging pre-announce tones, and high priority or emergency alarms. In addition, newly created tones can be played back immediately for evaluation.

For paging purposes, zones can be created out of intercom stations, speakers and consoles. A zone, however, can also be used for monitoring purposes, which allows for the listening of abnormal or suspicious activity through the intercom stations and paging speakers.

The T3 system also permits the correctional officer to set up a customized zone of stations and speakers that, when monitored, allows the operator to sequentially listen to each location for a set amount of time. “By using the listening feature, the officer’s attention can be drawn to any abnormal activity and appropriate action taken,” said Brown. The officer also has the ability to intercept the sequence and instantly initiate a call to a specific listening location. Alternatively, by equipping the T3 with the Telecor Audio

Receptacle, the officer can digitally record conversations heard during monitoring.

Installation is accomplished by connecting intercom stations and speaker circuits to field-located termination boards, which interconnect to one another and terminate at a local-area T3 controller. Consoles are connected in a similar fashion. To provide solutions for a wide range of facility demands, Telecor has also designed termination boards for the connection of dry contact devices, contact switches, LEDs, and lamps.

For call-in purposes, the T3 system permits up to four call switches for each intercom station. This provides a station user with the ability to annunciate separate priority levels or signal different consoles. In addition, an unlimited amount of press and press-and-hold patterns can be programmed and assigned to the call switches, or a combination of call switches. Patterns allow for a greater range of consoles to be signaled, or additional priority levels to be annunciated. The T3 includes up to 254 separate priority levels for call-in purposes.

Speaker lines and call-in lines can be supervised for faults by the T3 controller. Testing for speaker lines can be conducted each time the line is used, or can be conducted manually by a control center operator. Call-in lines are supervised continuously, whereby if a failure occurs it is reported immediately.

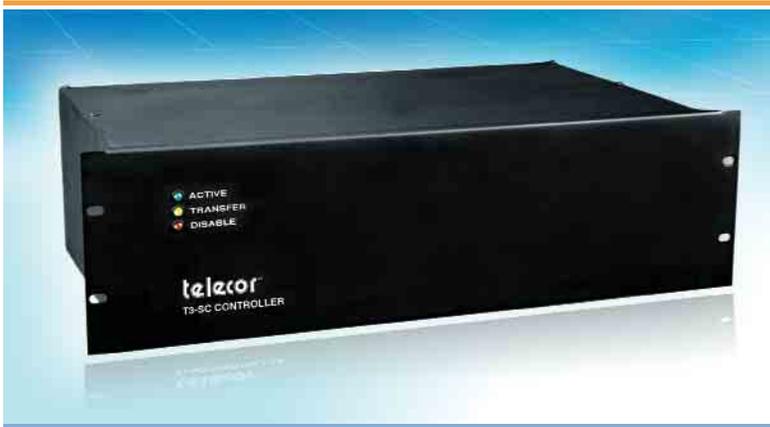
The Telecor T3 Communication System ensures that a comprehensive yet flexible system can be created to meet the diverse customer requirements in the correctional and security market. In the Lindsay Jail, the T3 system contributes to a modern, state-of-the-art facility by providing superior communications in an integrated security system.

AUTHOR

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Security Communication Systems

Offering Simple Solutions for Complex Requirements



The Telecor T3 System

Telecor's T3 system is a comprehensive intercom, paging and control system that offers flexible and powerful voice communications for commercial, industrial, and correctional facilities.

The power of the T3 lies within its programmable software capabilities, which allow the system to be configured for the unique operations found in each individual facility.

The Telecor T3 readily integrates with a PLC or PC, allowing it to control other system functions, while allowing other systems to execute T3 functions. With the T3's revolutionary method of integration, Telecor has ensured no complex or time-consuming programming is involved.

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