

Closed Circuit Surveillance System at Delhi Tihar Prisons

In a major initiative to strengthen its security and surveillance on the activities of Prisoners in Delhi's Tihar Prisons, the prison administration has geared up with the installation of Close Circuit Televisions (CCTV), covering major portions of the prison. With state of art CCTV control room being set up in the prison Head Quarters, the movement of the prisoners as well as its employees will now be under round-the-clock surveillance of CCTV cameras. Provisions are also made to keep a record of the captured activities for future use in case of any complaints by the inmates or Human Rights violations.



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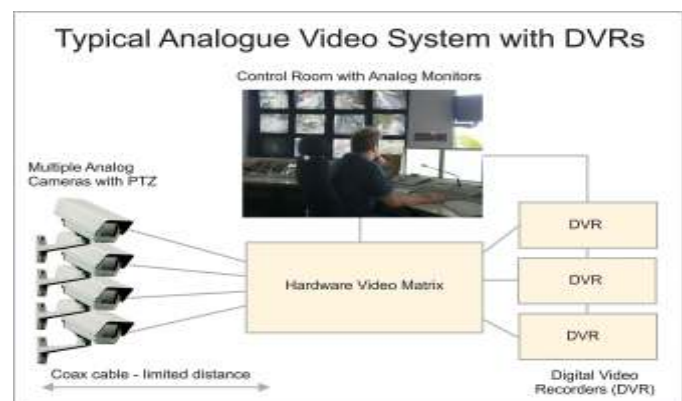
CCTV or Closed Circuit Television refers to a visible or covert video system intended for only a limited number of viewers. In CCTV, the picture is viewed or recorded, but not broadcast. It was initially developed as a means of security for banks and casinos; however, today it has been developed to the point where it is simple and inexpensive enough to be used with Home Security Systems and for everyday surveillance.

Components of CCTV

- * Fixed camera.
- * Movable camera also called as Pan, Tilt and Zoom (PTZ) Camera.
- * Network for bringing the feed at the control room.
- * Central server for managing cameras.
- * Distributed servers for recording in each jail.
- * Network Video Recorder (NVR) in each jail for recording.
- * Monitor or a LCD Panel for display either at jail level or at central level.

Internet Protocol (IP) enabled

cameras are CCTV cameras that use IP to transmit image data and control signals over a fast ethernet link to a central control room. IP enabled cameras are primarily used for surveillance in the same manner as analog closed-circuit television.



An IP enabled CCTV setup has analog cameras that are normally deployed together with a digital video recorder (DVR) or a network video recorder (NVR) to form a video surveillance system in the Tihar complex.

A DVR system is not really fully IP-based, but is a step toward the more advanced IP technology. In actuality, a DVR system uses the same camera and structure for cabling as the older CCTV analog system, but the old VCRs have been replaced with DVR for storage and recording of the data. The data is converted into digital images such that it can be stored on hard discs, but the quality of the images captured remains analog since this is how the image had originated.

Technological advancement in the field of communication and digital technology extend vision beyond territorial boundaries. The high-security Tihar Central Jail, one of South Asia's biggest prison, has installed IP enabled closed circuit television (CCTV) cameras for viewing and recording from all sensitive points to tighten security, for close surveillance of its over 14,000 inmates and to monitor on-going activities in various independent jails.

The CCTV surveillance system, in addition to their additional requirement of LAN, is using the existing Optical Fibre Cable Local Area Network of Delhi Tihar Prison. The existing OFC LAN has one Layer 3 Switch and 16 Layer 2 Switches connected with each other with Optical Fibre Cable of more than 5800 metres within the Tihar Complex. The LAN already installed in the prison premises is used for connectivity between the sub control rooms in Jails and main control room at Prison Headquarter. The total numbers of control rooms in the Jail are nine. A CCTV monitor is virtually the same as a television receiver except that it does not have the tuning circuits. LCD TV with high resolution is being used as monitors in the control room. Decentralized panels have been installed to review the security in each jail and then the same is being monitored in the control room. A panel has also been created in The Office of the DG Tihar.

Nearly 258 CCTV cameras (Fixed (CS Vandal Proof Mount Outdoor Camera LTC 0455 & CS Mount Indoor Camera LTC 3374/50) & PTZ (Outdoor Dome PTZ Camera Bosch VG 4-313-ECSIIW) have been installed and have atleast 10 CCTV cameras at various sensitive points of each Prison and within the complex. One Main Control Room at Prisons Headquarter and Sub-Control Room in each Prison are created. The recording of video is at both locations (Main Control Room & Sub-Control Room). Each sub-control room is equipped with Video Converter / Digitiser / Encoder (Bosch VIPX Series) colour LCD high resolution monitors and Intel Xeon based Server. In addition, main control room is having 42" High resolution LCD

(Philips) Panels, Digital Key boards for controlling PTZ cameras (Bosch KBD Digital + KBD 220PS) Network Video Recorder (Dell PE1950 along with license software of Bosch for NVR) Server along with software, RAID HDD (Dell MD 1000) Storage (5 Terra Bytes).

The CCTV Surveillance System helps in establishing chronological sequence and duration of any incident within the complex. The surveillance system shall be able to provide immediate reports on the potential threats. This surveillance system can further be upgraded with more advanced application software to carry out analytical functions like motion detection alarm, snap shots of the scene, intrusion detection. It shall also help in routine reporting on suspicious persons, vehicles and objects.

Tihar is the 1st jail in the country to have installed such type of the system in the country. Many VIPs, which include Chief Justice of Delhi High Court, Lt. Governor of Delhi, Union Home Minister of the Union Government, Chief Minister of Delhi, Director General of Police of different states, Home Minister of Maldives, Director General of Jail from Bangladesh, Sri Lanka, Nepal and representative of UNODC have visited and appreciated the efforts of Tihar Jail in implementing the above monitoring system for security enhancement.

Human Rights violations have reduced considerably due to such monitoring both in male and female wards. Both the inmates and wardens are scared to start any arguments since each action is being getting recorded. Cases of smoking in the jail premises have reduced considerably due to such initiatives.

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NIC has been associated with this project.

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