



ACIDS (Access Control and Intrusion Detection System) at Nagpur Metro Rail Corporation

Vertical: Transportation

Date: August 2017

CUSTOMER DETAILS:

- *Approximate employee strength: 4000-5000*
- *Tot. No. of stations: 36*
- *Tot. No. of depots: 2*
- *RSSs*
- *Metro Bhavan*

Nagpur metro rail project is a joint venture of Government of India and Government of Maharashtra. NMRCL (Nagpur Metro Rail Corporation Limited) required collaboration of different industries to build a self-sufficient infrastructure.

The project consists of 34 Km metro corridor (North-South Corridor and East-West Corridor), including 36 stations, 2 depots, RSS and Metro Bhavan. IDCUBE is responsible for supplying access control, intrusion detection and time attendance system for the project.

PROBLEM STATEMENT

NMRCL required a holistic physical access control and time attendance system at the depots, stations, RSS and Metro Bhavan (main office). The primary challenge was to accommodate database of large number of employees working at NMRCL, managing their biometric identities, issuance of secured identity cards and efficiently managing employee access privileges as per their operational roles. It also required advanced perimeter intrusion detection system integrated to access control platform. The system should be fault tolerant, ensuring availability and data reliability. In addition, the system should seamlessly integrate with various IT systems, for smooth operations.

SOLUTION

Basic Solution Design:

IDCUBE's Access360 software stack is an open platform access control and time attendance management solution, designed for critical infrastructures with geographically spread facilities. The solution offered at NMRCL is designed to provide maximum reliability and security against system failure and data loss. The disaster recovery (DR) solution includes a primary server at the Operation Control Center

REQUIREMENTS:

- Access control for employees
- Protection against data loss and system failure
- Intrusion detection system
- Employee enrollment and attendance management
- Employee report generation
- Integrated badge printing and biometric enrollment
- Integration with various third party systems
- Integrated monitoring and control

(OCC) and a secondary server at the Backup Operation Control Center (BOCC), with real time data replication.

Access control system:

IDCUBE delivered Access control solution to NMRCL that includes stations, depots, RSS and Metro Bhavan with various critical areas such as station control room, ticket office, excess fare office, technical rooms, wicket gates, boom barriers for authorized vehicle parking which require restrictive entry and exit. Also, in the Metro Bhavan, only employees of NMRCL with authority can be allowed to certain zones. Access360 makes it possible to manage distinct access privileges for each employee and vehicles.

Intrusion detection system:

Perimeter intrusion detection system has been provided at the depots, which uses infra red (IR) beam sensors to detect any intrusion near the protected area and escalate the alarm to the control centers.

Time attendance system

Administrators can manage the attendance data and access rights of employees across all the stations from the centralized location. The solution accommodates large amount of data and future expansion without the need of undergoing major architectural changes.

Customized report generation:

The solution delivers a secure and user-friendly reporting interface with customizable report templates. The user may configure to receive access and attendance reports at regular intervals via emails.

Badge Printing and Issuance:

Using Smart Issuance module, the NMRCL operators can enroll biometric fingerprint of the employees, issue and print ID cards.

Integration with third party systems:

Access360 software interfaces with multiple third party systems, such as Master Clock, Fire Alarm System, T-Scada, Automatic Fare Collection System, HRMS, CCTV System etc. to meet the technical compliances of the project.

Integration with Master clock synchronizes the Access360 server clock with precision.

Fire Alarm System (FAS) integration automatically unlocks the doors in case of a fire.

T-SCADA integration lets operator to monitor the access control system related alarms on T-SCADA HMI.

Automatic Fare Collection (AFC) System integration facilitates employees to use the AFC cards for gaining access to the secured facility.

HRMS integration delivers attendance logs for salary calculation of employees.

CCTV System integration facilitates the operator to monitor both systems' alarms on a single interface, that is, CCTV HMI.

RESULT

IDCUBE's access control and time attendance solution provides enhanced security at the restricted areas of the NMRCL premises including, stations, depots, RSS and Metro Bhavan, where authorized access is a top priority.

The Access360's integration capabilities with various third party applications, has allowed it to comply with all the operational requirements of NMRCL project. The system supports other important add-on systems like visitor management, elevator access management etc. needed in metro facilities.

High reliability, efficiency and architectural flexibility provide by the solution makes it a viable solution for the NMRCL project.

SYSTEM ARCHITECTURE
