CoreStation
CASE STUDY

suprema

This brochure contains case studies collected from partners around the world where they have deployed Suprema CoreStation, a biometric-enabled intelligent door controller. Each case study describes the challenges faced by each project and how they were able to overcome these challenges using a centralized access control topology with CoreStation. From these examples, you will be able to understand how and in what scenarios you can take advantage of Suprema's CoreStation in a centralized system over using the IP-based intelligent readers for both RFID and biometric deployments.

- Suprema CoreStation Team

CONTENTS

Bosch Global

Meyer Group | Turkey

THE CUSTOMER

Bosch Group, a leading supplier of technology and services has invested into Turkey. Turkey became the manufacture and export hub which is also growing in importance as a research and development. The company established factories manufacturing high-pressure injectors for diesel vehicles, located in Istanbul, Bursa, Izmir and Ekirdag, Turkey. Bosch Group operates 4 factories and offices, employees more than one thousands staff.

THE CHALLENGE

IT department in Bosch takes its responsibility to provide solid and fast Access Control solutions to its employees in 4 locations. Their existing system was slow enough to raise concern from Bosch management. Another challenge was that all the access points, doors and turnstiles should be controlled by a single system. They also looked for a software that enables Time & Attendance, Canteen Management and Visitor Management at once.

THE SOLUTION

After a series of detailed consultation with Meyer Group, Suprema's valued partner in Turkey, Bosch changed its existing system to Suprema's CoreStation, enterprise-level system control panel with an incredible matching speed of up to 400,000 matches/sec. 250 units of CoreStation were connected to 600 units of Legic readers covering all access points of both door and turnstile in 4 locations. 120 units of BioStation2 fingerprint readers were installed on turnstiles at the entrances. The performance of Suprema solutions is significantly fast and reliable so that thousands of employees are registered and access granted stably without any compromise in performance.

In addition, Meyer, a strong company with engineering, software development and system infrastructure, developed an integration with SAP not only managing Access Control but also Time & Attendance, Canteen Management and Visitor Management through a single software solution.

KEY BENEFITS

1) Faster Processing Time
With the CoreStation performance, matching speed and user capacity, no more time consuming delays for employees during normal hours and even peak hours when entering and exiting.

2) Increased safety and productivity
This high quality access control systems improves safety for employees and provides but also provides the company with clear Return on Investment as it saves annual budget for security.

3) Easy Management System
Total management software incorporates a range of features including Access Control, Time & Attendance, Canteen Management and Visitor Management. All can be centrally controlled, managed and monitored easily.

SYSTEM CONFIGURATION
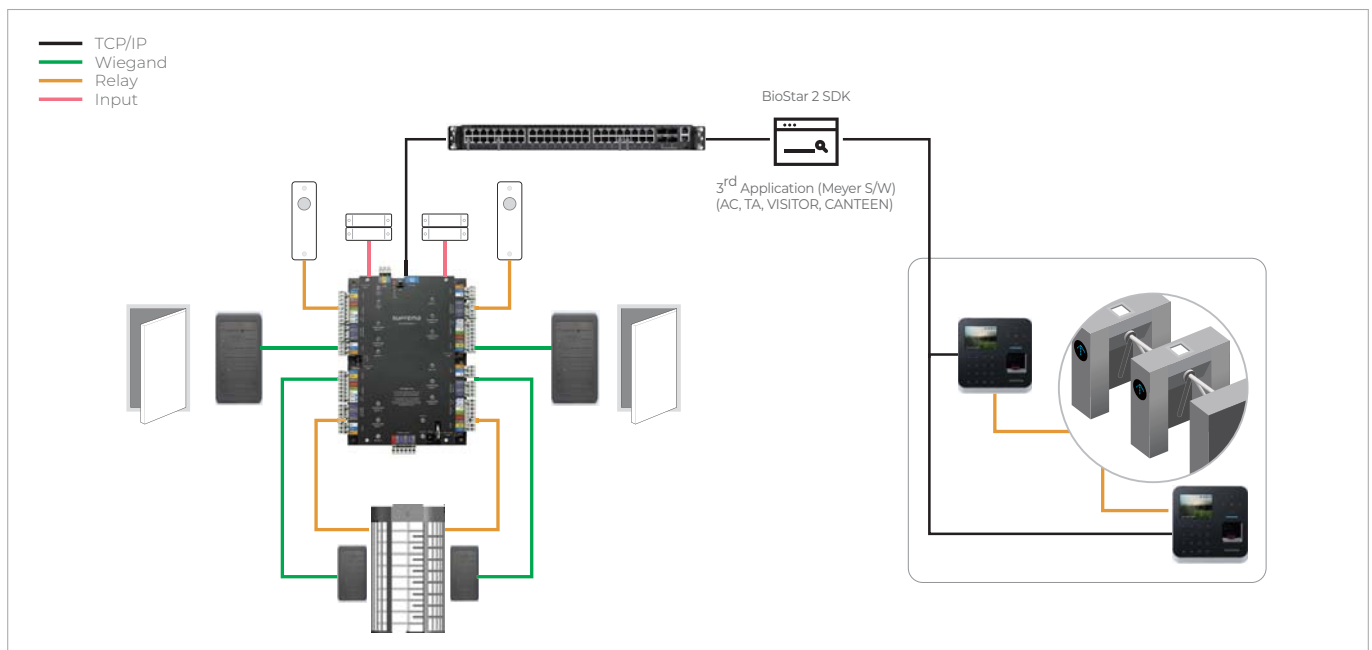
City Developments Limited

Hanman International Pte Ltd, | **Singapore**

THE CUSTOMER

City Developments Limited (CDL) is a leading global real estate operating company with a network spanning 103 locations in 29 countries and regions with seven companies listed on notable stock exchange in Singapore, London, New Zealand and Philippines. Listed on the Singapore Exchange, the Group is one of the largest companies by market capitalization. Since 1960, CDL is a well-known for its residential condominium development in Singapore.

They are recognized for supplying diverse portfolio including of residences, offices, hotels, serviced apartments, integrated development and shopping malls.

THE CHALLENGE

IT department in CDL has the responsibility to provide a secure but user-friendly access control system to its employees.

Access control points of building such as such as doors, turnstiles, parking gates and elevators were managed by RFID card readers card reders which can grant or deny access to employees. However CDL had deployed multiple card reader systems requiring employees to use different cards at different access points. This caused entry delays due to queues formed at various entry points. Additionally, as they were dealing with excessive number of cards, unneccessary administrative work and costs were incurred as when cards got lost, they had to get deleted and new cards were re-issued.

THE SOLUTION

Suprema's valued partner in Singapore, Hanman recommended to upgrade the entire system to Suprema's access control products to replace the use of cards to fingerprint biometrics. The system was centered around use of the CoreStation, Suprema'sintelligent control panel. A total of 10 units of CoreStations were installed inside the main server room that was connected to 48 units of BioEntry W2 fingerprint readers. BioEntry W2's leading performance of 150,000 matches per second and IP67/IK09 compliant housing makes it suitable for all entrances and doors in any environment. In addition, OM-120, multiple output expansionmodule, are installed in 9 different lifts each with BioEntry W2 fingerprint readers to control access to different floors of the building. The entire system is operated seamlessly by Suprema BioStar 2 access control platform.

The new system offered a solution that is far more convenient and secure over the previous RFID system which led to great customer satisfaction.

KEY BENEFITS

1) Easy to Use
Not having to carry cards greatly increases convenience for the employees. At the same time, use of fingerprint enhances security as use of biometrics makes sharing of credential impossible.
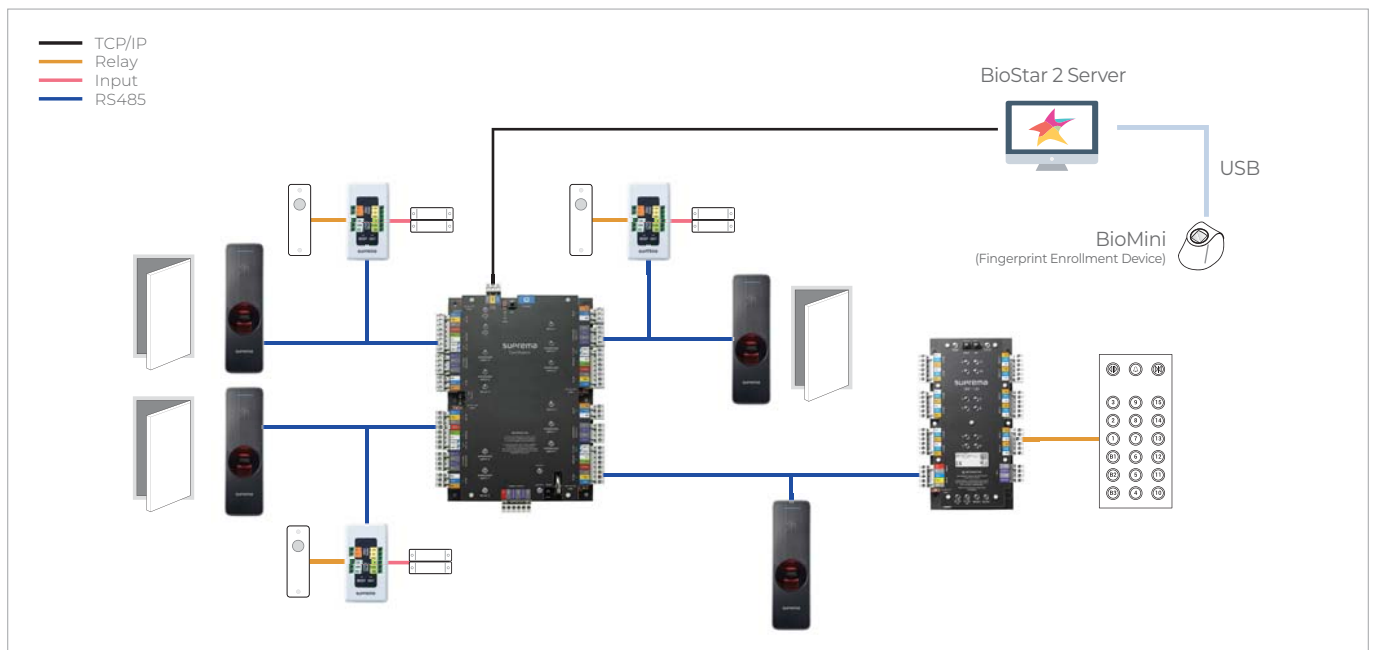
2) Faster Processing Time
CoreStation's performance of 400,000 matches/sec and user capacity offers speed that exceeds normal card readers.

3) Improved Security
No ethernet connection and data storage on BioEntry W2 readers improve overall security of the system and protection of employee data.

SYSTEM CONFIGURATION

Airport Railroad

JUNG ONE Security Korea | Incheon Airport

THE CUSTOMER

January 13th, 2018. Incheon International Airport successfully opened Terminal 2, which serves 19 million people (on average) per year. The Airport Railroad runs between Seoul Station and Incheon International Airport Station Terminal 2, a total length of 63 km, and an average distance between stations of 5.3 km. In spite of the distance, Incheon Airport Railroad Express Train can transport passengers from the Airport Terminal to Seoul (Korea's capital city), in 43 minutes. These features of Incheon International Airport Railroad improved efficiency, effectiveness of its passengers. The Airport Railroad has been recognized for the increasing number of passengers departing from Incheon Airport lately.

FAST FACTS

LOCATION
Airport Railroad
/ Incheon, Korea Republic of

YEAR OF COMPLETION
2018

APPLICATION
Access control

TECHNOLOGY
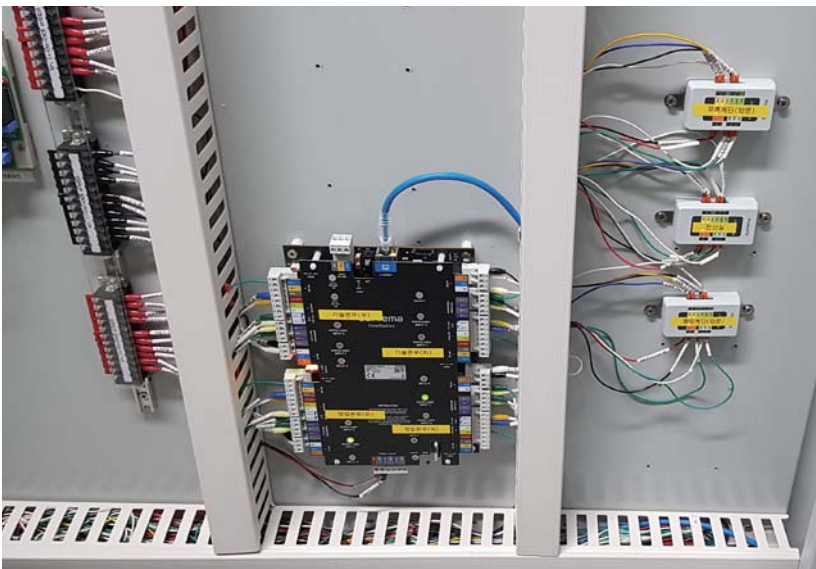Control panel, RFID, Fingerprint

PROJECT SIZE
584 Employees

SUPREMA PARTNER
JUNG ONE Security, Korea

SOLUTIONS
CoreStation: 8EA
BioStation A2: 10EA
X-Station: 32EA
Xpass: 100EA

THE CHALLENGE

Incheon Airport Railroad previously used Suprema's X-Station (LCD touch screen RFID reader), along with BioStar version 1 platform (software PC based). As time passed, More reliable security solution was required. They were using only an X-Station (security information was stored inside the device), which left user's data information vulnerable to compromise. In addition, Incheon Airport Railroad needed to use their own security platform, which would require Integration with Biostar 2 API software.

THE SOLUTION

Suprema's valued partner in Korea, JUNG ONE Security upgraded the existing system to a Suprema's centralized access control schema using CoreStation (Suprema's intelligent biometric control panel). Now, 32 X-Station units are connected to a total of 8 units of CoreStation via Wiegand, installed at the control center of the head office. The X-Stations are customized with a more comfortable and user-friendly UI for the Incheon Airport Railroad. They supply users with a fast and easy access to all the required features and functions. CoreStation managed to control all user information and data logs, eliminating the concern of user and data information compromise, given that the X-Station terminals became to act as readers only. A resultant system topology of CoreStation combined with 10 units of BioStation A2 (fingerprint terminals), installed in server and operating rooms; along with 100 XPass units (intelligent RFID readers), installed in 14 stations of the Airport Railroad and a new security platform that Incheon Airport Railroad developed using BioStar 2 API software, offers a far more convenient control solution. In conclusion, this comprehensive solution led to enhance customer satisfaction.

KEY BENEFITS

1) Enhanced Security System
A Centralized Access Control System with CoreStation is capable to improve the security level as no user information and logs are stored in the edge reader installed front door. Bringing higher reliability.

2) Fast Processing Time
High quality and faster performance of CoreStation, BioStation A2, and XPass increase operational efficiency and user satisfaction.

3) Easy Operation
As integrating BioStar 2 into Incheon Airport Railroad HRM system by using BioStar 2 API software, provides a more efficient management system for administrators.

SYSTEM CONFIGURATION

TCP/IP
Wiegand
Relay
Input

BioStar 2 Server   HRM System

BioStar API

Alarm   Sensor (8ch TTL / Supervised input)
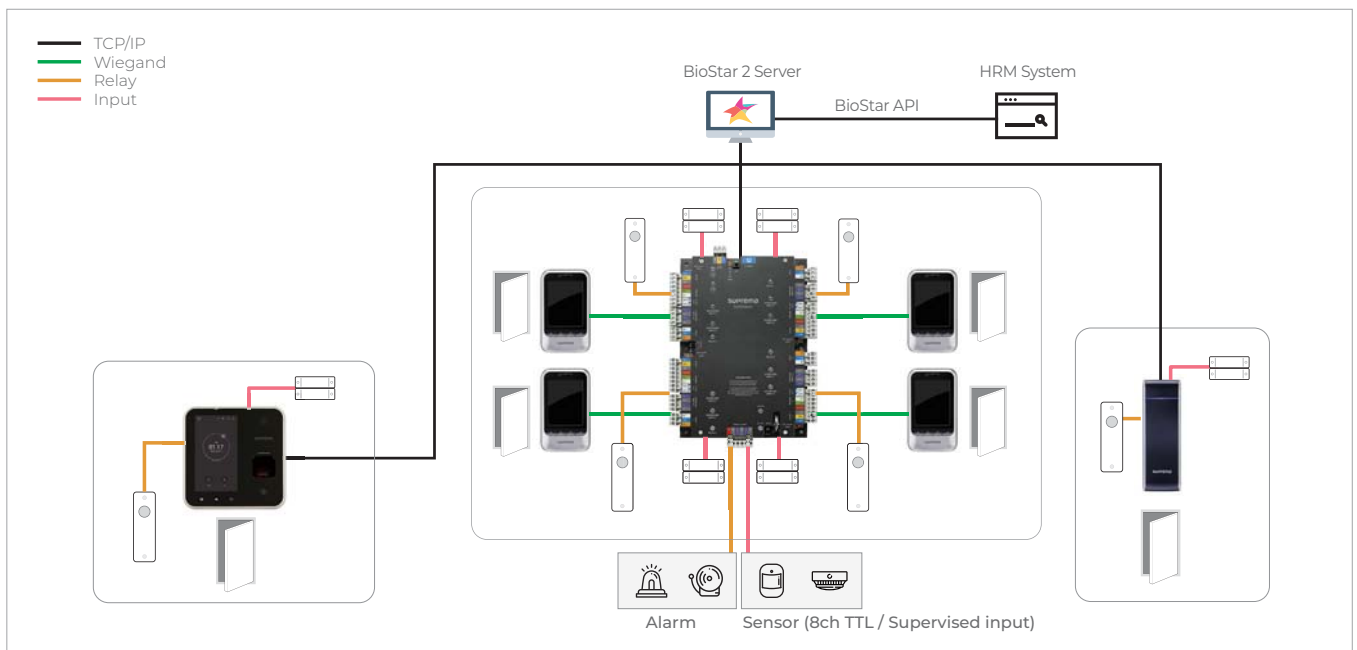
Krungthai Card
Public Company Limited,

Tanabutr co., Ltd., | **Thailand**

THE CUSTOMER

Krungthai Card Public Company Limited ("KTC") operations include credit cards, personal loans, utilities payment services, and act as a payment service provider. KTC was registered as a legal entity on December 4th, 1996 with an authorized capital of 50 million Baht. On 2nd July 2002, KTC was transformed into a public limited company under the name of Krungthai Card Public Company Limited. The total authorized capital is now 1,000 million Baht with a total of 100 million shares. The company was listed in the Stock Exchange of Thailand on October 28th, 2002.

FAST FACTS

LOCATION
Krungthai Card Public Company Limited / Bangkok, Thailand

YEAR OF COMPLETION
2018

APPLICATION
Access control
Time & Attendance

TECHNOLOGY
Control Panel, Fingerprint

PROJECT SIZE
620 Employees

SUPREMA PARTNER
Tanabutr co., Ltd., Thailand

SOLUTIONS
CoreStation: 14EA
BioEntry P2: 41EA
BioEntry R2: 39EA
BioMini: 1EA
BioStar 2 Software

THE CHALLENGE

For the last 10 years, KTC used different brands of fingerprint standalone devices. However, as biometric access control technology has improved, KTC wanted to upgrade its security headquarters' access control system. KTC required acentralized fingerprint system installed among two buildings where the Headquarters' offices are located. The software was required to be sophisticated enough, cloud or web-based, and yet has "ease" of usage and remains "scalable" for future upgrades.

THE SOLUTION

Suprema's valued partner in Thailand, Tanabutr, replaced the entire system with our own biometric solution. KTC had several brands under consideration for this project. Suprema won the project because our hardware offers superior technology and performance, and as a bonus a sleek design that compliments the headquarter's offices well. Suprema's platform also fitted their billing and requirements perfectly. Suprema's BioEntry P2 (compact standalone fingerprint access control device) which features the fastest matching speed was installed along with BioEntry R2 (a dummy fingerprint reader). A combination of BioEntry P2 and BioEntry R2 were connected through RS485 to Suprema's CoreStation (Intelligent Biometric Access Control panel). Since the site was required numerous doors, CoreStation topology saved installation cost of IP addresses and LAN bandwidth. Also it enables to use P2 as a substitutional device in case of a CoreStation failure. In case of any unforeseen event, the BioEntrys R2 could be connected as slaves to BioEntry P2 devices and still have a fully working system. Altogether, the Biostar 2 Platform provided a comprehensive solution for Access Control and Time & Attendance, which highly improved KTC's operational efficiency.

KEY BENEFITS

1) Secured and Convenient System
As implementing a centralized system with CoreStation, it results in having a far more secured access control system because no user information or log data are exposed. It also allows administrator to operate the system more conveniently.
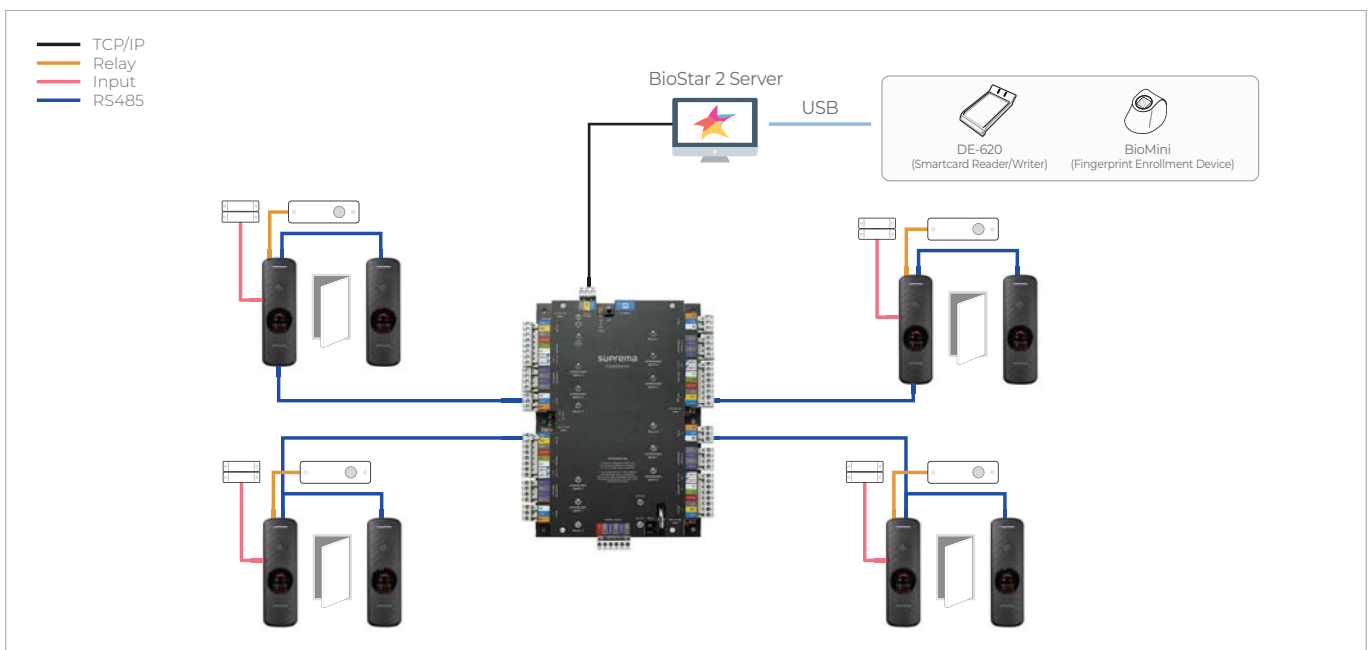
2) Total Management Platform
BioStar 2 Access Control and Time & Attendance software fully provides all access control features and manages the Time & Attendance solution.

3) Easy Installation
No additional Ethernet wiring is needed for fingerprint devices BioEntry P2 and BioEntry R2. The solution can improve effectiveness of the workforce as well as reduce costs.

SYSTEM CONFIGURATION

TCP/IP
Relay
Input
RS485

BioStar 2 Server

USB

DE-620
(Smartcard Reader/Writer)

BioMini
(Fingerprint Enrollment Device)

Italian Embassy

BOMESCO | Bolivia

THE CUSTOMER

June 2019, a new office for the Italian Embassy was opened to public in "La Paz" City, located in the "Calacoto" area.

In this new infrastructure, there are the Italian Embassy and Consulate where a large influx of people are looking for visas, visitors for other purposes and Italian citizens. For this reason, the security on site needed to be guaranteed for both the Embassy and Consulate personnel as well as for the people who visit the facility.

FAST FACTS

LOCATION
New Italian Embassy
/ La Paz City, Bolivia

YEAR OF COMPLETION
2019

APPLICATION
Access control, Video Intercom

TECHNOLOGY
Access control panel, Fingerprint, SIP.

SUPREMA PARTNER
BOMESCO

SOLUTIONS
Corestation: 1EA
Biostation A2: 2EA
BioEntry R2: 8EA
Biostar 2 Software

THE CHALLENGE

Numrous offices of the Italian Embassy and the Consulate were interconncted through corridor and emergency exit on the site.

Access Levels were required to control the access of those going back and forth from the Embassy to the Consulate and vice versa. The main concern was to controll entrances from public area to restricted area by allowing access to authorized personnel only. For this purpose, access control was required.

The Biometric Access Control Platform must be able to monitor the sate of doors visually and allow administrators to control the doors manually by anytime. Due to the nature of international institution, Access control plaform had to meet the international security standards.

THE SOLUTION

A CoreStation was installed to use the Anti Passback function (among other features). In order to have control of all people coming and going from one place to another within the Embassy-Consulate areas.

Biostar 2.7 was implemented in this project, which already incorporates the Graphic Map module (with an Advanced license).

This helps the security team to visualize all the existing events in the two offices (Embassy, Consulate) graphically.

For both the entrances of the Embassy and Consulate, two Biostation A2 were installed. In this case, the A2 devices performed as Access control and intercom by cennecting SIP to A2. Four armored doors were installed, with two BioEntry R2 devices per door, these are connected via RS-485 to the CoreStation. The personnel have access to the doors through the CoreStation.

Each door has a special emergency exit button connected to controller which can be opened by the allowed personnel in emergencies.

an emergency situation. The personnel working at the Embassy and Consulate have the option of either using Biometrics (fingerprint), or Card (RFID). The access through the BioStar 2 Mobile Card (Smart Card) is enabled only for the Ambassador and the Delegate of the Military Police.

SYSTEM CONFIGURATION
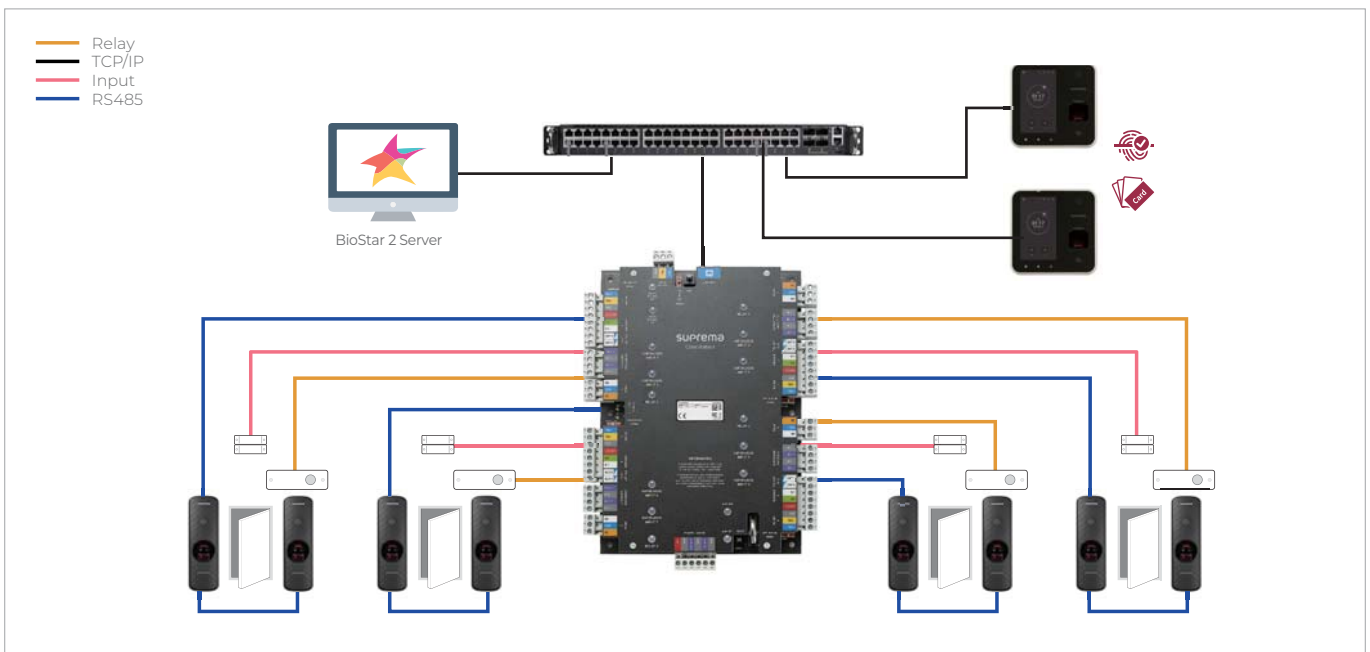
VIRU S.A.

DMS | **Peru**

THE CUSTOMER

Viru S.A is a global company, a leader in the agro-industrial sector and the largest producer of canned and frozen fine fruits and vegetables in Peru. For 25 years, Viru S.A have come a long way as the world's largest producer and exporter of agro-industrial products. They have an infrastructure designed to effectively meet the demands of their customers whilst cultivating high quality vegetables, fruits and plants in more than 9,600 hectares. Its productivity is developed in 6 industrial plants, located in the valleys of Viru and Chincha on the Peruvian coast, which have modern systems of analysis and quality control for their products.

FAST FACTS

LOCATION
VIRU S.A / Viru, Peru

YEAR OF COMPLETION
2018

APPLICATION
Access control

TECHNOLOGY
Control panel
Barcode reader
BioStar2 API

PROJECT SIZE
4,500 Employees

SUPREMA PARTNER
DMS, Peru

SOLUTIONS
CoreStation: 4EA
DM-20: 4EA
Zebra DS457: 18EA

THE CHALLENGE

Viru S.A used RFID card reader system but needed to replace to barcode reader which can read national identity document printed as bar code because the national identity document was taken into account as user's identification. In addition, the barcode reader needed be used as access control reader where the system granted or denied access to user when the barcode is scanned.

THE SOLUTION

Suprema's valued partner in Peru, DMS suggested the solution designed as centralized access control which allows handling of a large number of users and third party readers to be integrated. The system was designed with CoreStation as the main controller, DM-20 Door Modules to add control points, RS232 to Wiegand 42 data converters and Zebra Technologies DS457 readers. To facilitate visual control, column-type light indicators were added, with green and red color indicators. BioStar 2 API was used for integration with customer's system. The integration consists of a middleware developed by DMS that takes advantage of the BioStar 2 API to integrate the staff control system with the customer management system (SAP).
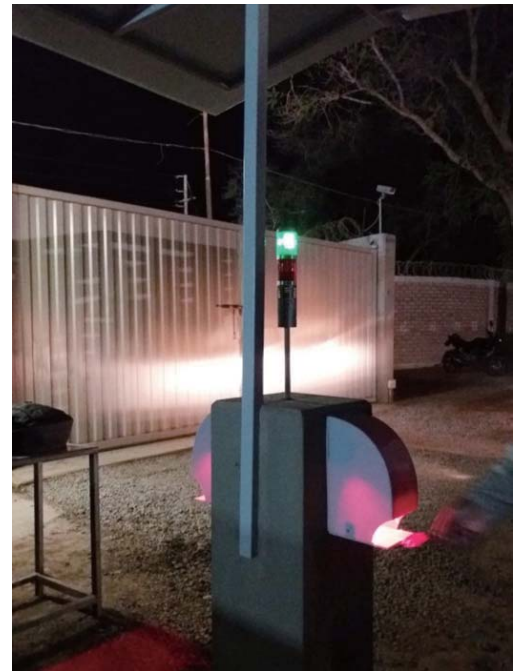
KEY BENEFITS

Implementing a centralized system with CoreStation, results in having a more secured and stable access control solution. CoreStation's capacity of handling the number of users and access granted speed increased the optimization of time in the control of entry and exit of users. By sending access control data in real time to the customer management system, it provides a more efficient management process for administrators. Lastly, by having barcode readers it has resulted in the reduction of the issuance of identification for users.

SYSTEM CONFIGURATION
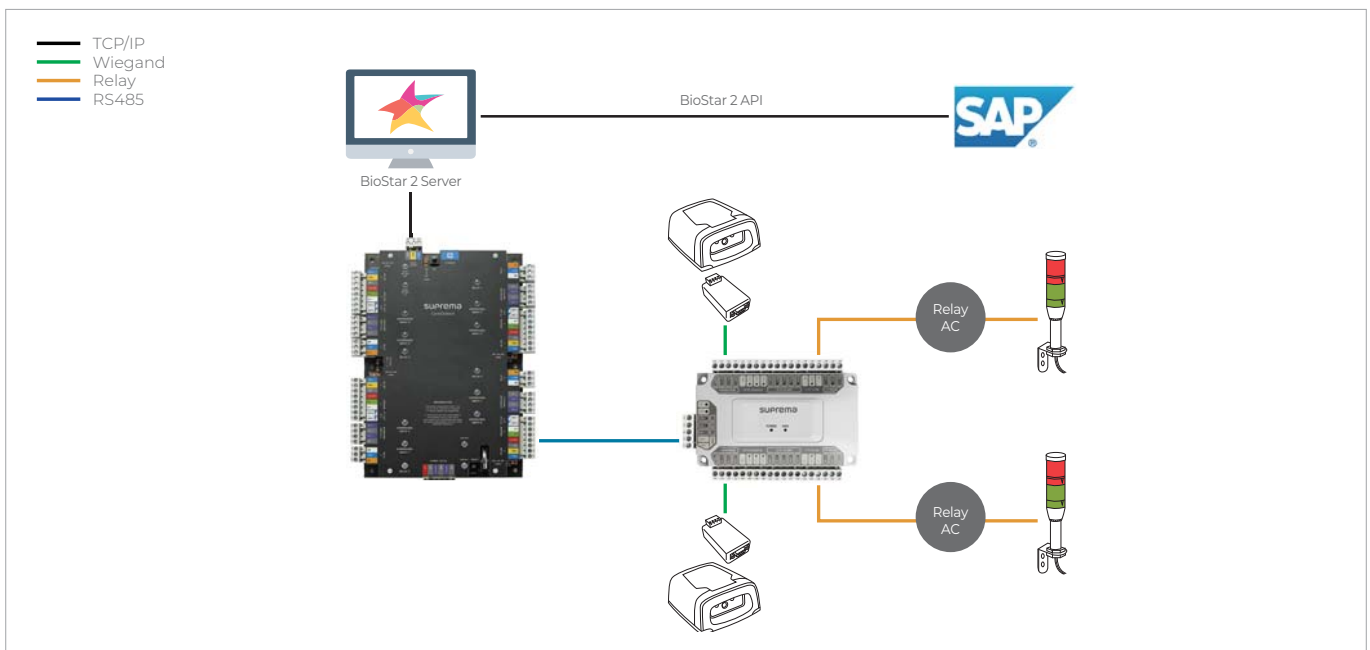
CoreStation
SETUP MANAGER
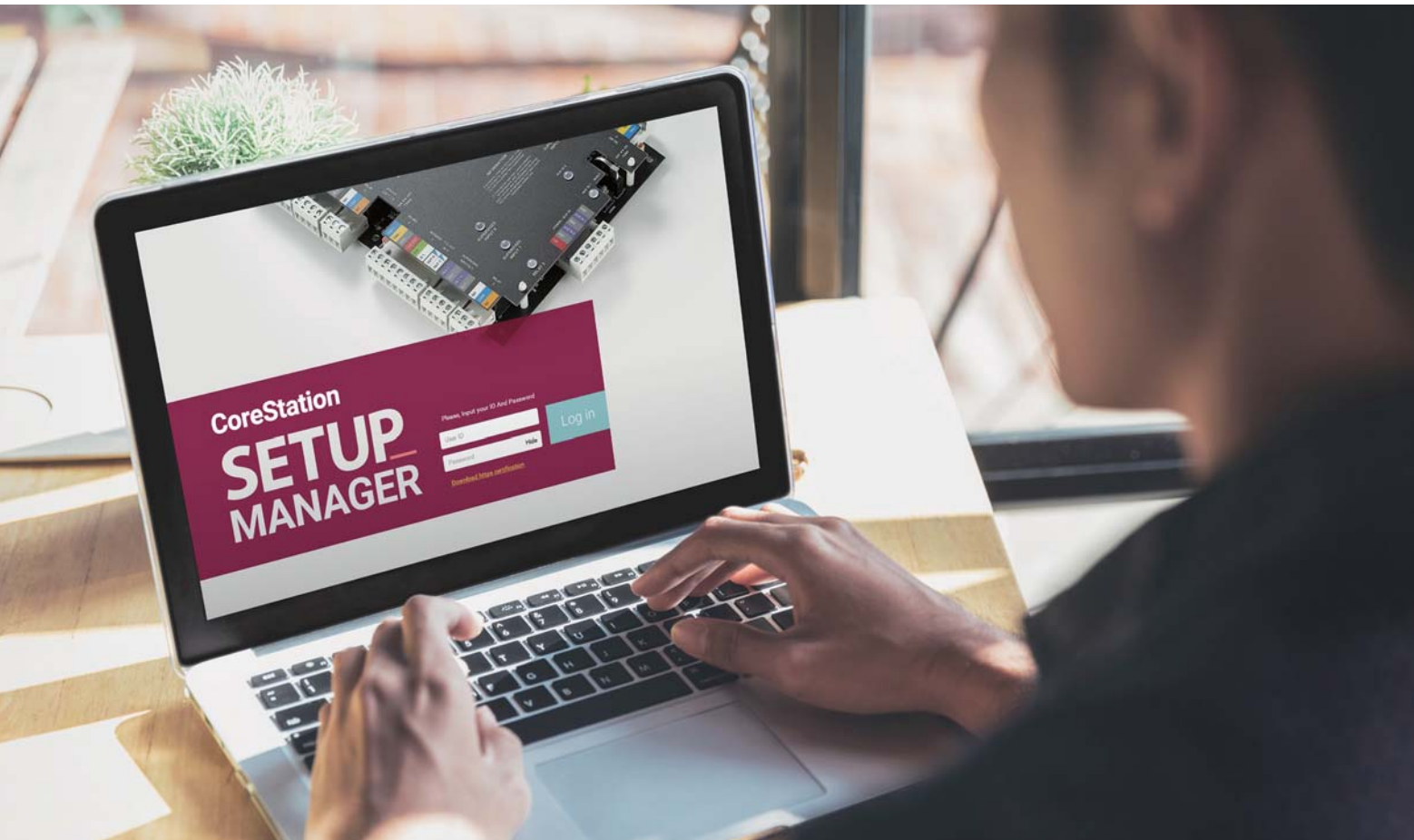
Easy network settings via user friendly interface
- No Ethernet connection to set controller IP
- Save a lot of time in first stage of BioStar2 or OEM's software setting

Slave device settings of CoreStation
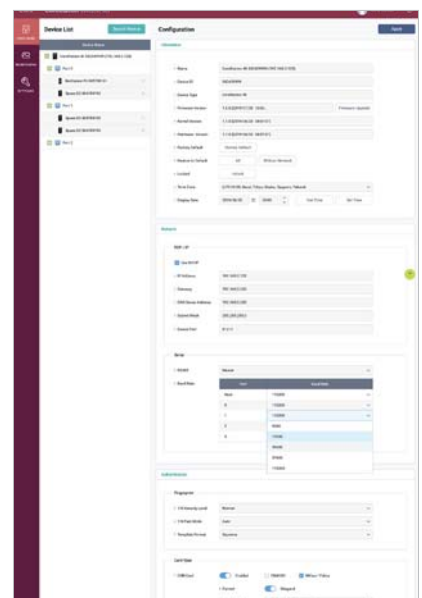- Checking slave device connection to CoreStation

Offline firmware upgrade
- Enable to upgrade firmware locally without Ethernet connection

Easy monitoring status
- Diagnose in/output, relay and wiegand reader status

CoreStation
Package

+
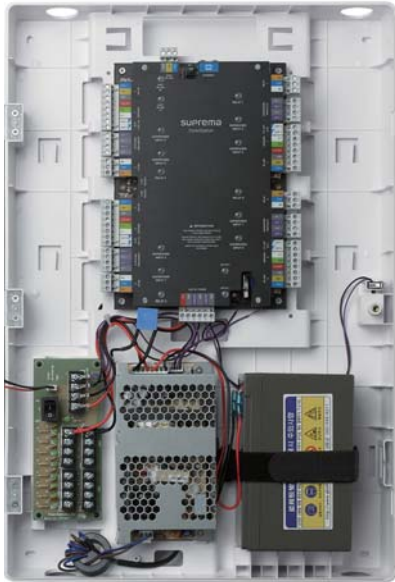
4 Door Controller Package
CS40 with Enclosure + PSU (1ea) BioStar2 STD S/W (1ea) Mifare CARD 1k (100ea)

Package with Reader Option
BER2-OD (4ea) XPD2-MDB (4ea) XPD2-GDB (4ea) XPD2-GKDB (4ea)

Package with Door Module Option
DM-20 (4ea)

CoreStation
Demo Kit

CoreStation Demo Kit
CS40 KIT CASE, CS40, XPD2-GKDB, BER2-OD, DM-20

CoreStation
Intelligent Biometric Controller

Features
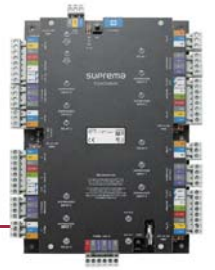
Centralized Biometric Access Control
- Centralized storage of biometric and access group data
- Complete controller functionalities with fingerprint matching
- Multi-port interface for fingerprint/RF readers
  - Supports locks, sensors, RTE, and alarm devices

Enterprise-level Capacity
- Max 500,000 users (1 million fingerprint templates)
  - 500,000 RF cards / 5,000,000 event logs / 500,000 PIN
- High-speed fingerprint matching
  - Max 400,000 match/sec (genuine matching)

Improved Security
- No Ethernet connection to the door reader
- No data storage at the door reader
- Secured communication between server and CoreStation (TLS 1.2)

System Flexibility and Scalability
- Controls up to 132 access points with extension modules (DM-20)
- Elevator Control (OM-120)
- Supports OSDP (Open Supervised Device Protocol)
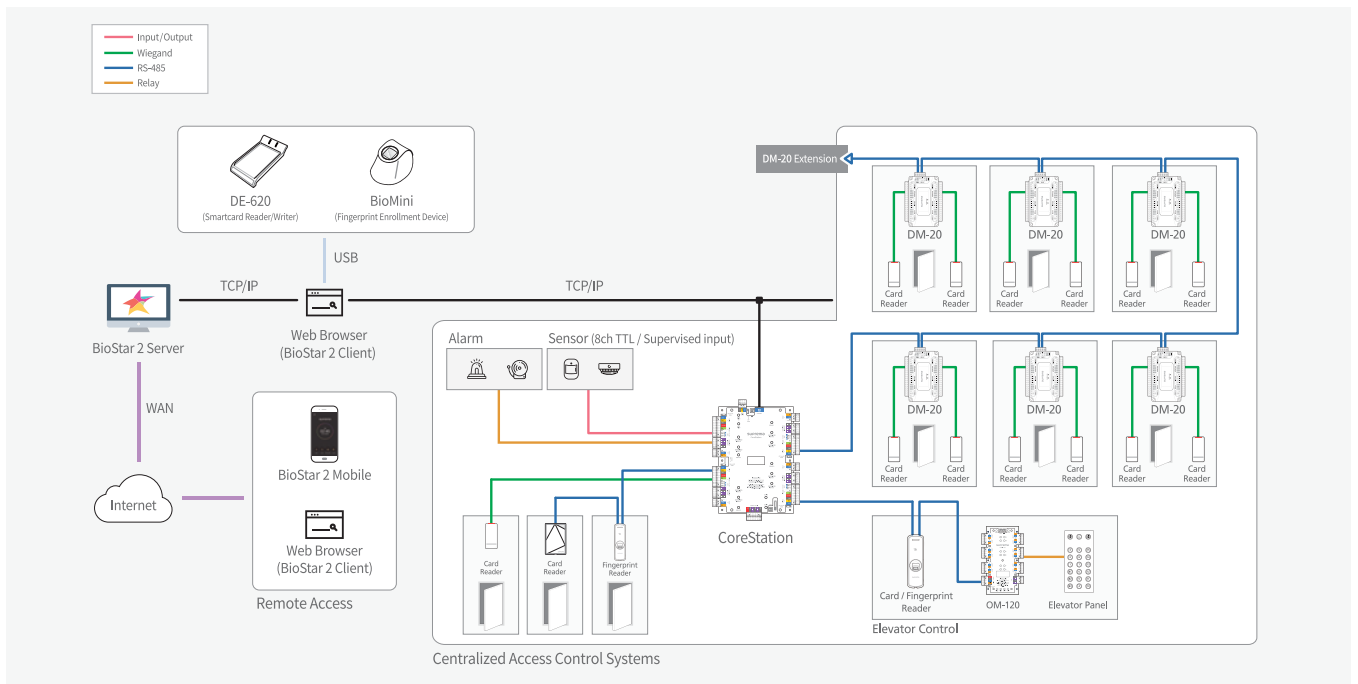
Fully Compatible with BioStar 2
- Easy operation and configuration
- Comprehensive access control and time & attendance functionalities

Specifications

Model Name	CS40
CPU	1.4 GHz Octa Core
Memory	8GB Flash + 1GB RAM
Max. User * Based on one finger enrollment per user	500,000 (1:1), 100,000(1:N)
Max. Template	1,000,000(1:1), 200,000(1:N)*
Max. Logs	5,000,000(text)
Serial Comm. Protocol	OSDP V2
Ethernet	10/100Mbps, auto MDI/MDI-X
RS-485	5ch
Wiegand	4ch
Relay	4 relays
TTL Input	8ch (Supervised input selectable)
TTL Output	8ch
AUX Input	2ch (AC Power Fail, Tamper)
Operating Temperature	0°C ~ 50°C
Dimensions (WxHxD, mm)	150 x 214 x 21 mm
Power	DC 12V
Certification	CE, FCC, KC, RoHS, WEEE, REACH
Connectivity	Max. Slave Devices (RS-485)	Max. 64 devices (Max. 31 devices per port)
	Max. Wiegand Devices	Max. 132 devices (with DM-20)

* Two templates per finger

System Configurations

Input/Output
Wiegand
RS-485
Relay

DE-620 (Smartcard Reader/Writer)
BioMini (Fingerprint Enrollment Device)

USB

TCP/IP

BioStar 2 Server

Web Browser (BioStar 2 Client)

TCP/IP

DM-20 Extension

DM-20   DM-20   DM-20

Card Reader   Card Reader   Card Reader   Card Reader   Card Reader   Card Reader

Alarm   Sensor (8ch TTL / Supervised input)

DM-20   DM-20   DM-20

Card Reader   Card Reader   Card Reader   Card Reader   Card Reader   Card Reader

WAN

BioStar 2 Mobile

Web Browser (BioStar 2 Client)

Remote Access

Internet

Card Reader   Card Reader   Fingerprint Reader

CoreStation

Card / Fingerprint Reader   OM-120   Elevator Panel

Elevator Control

Centralized Access Control Systems

BioEntry R2, XPass D2

Specifications

Model Name	BER2-OD	XPD2-MDB	XPD2-GDB	XPD2-GKDB
RF Option	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa
Mobile Card	NFC	NFC/BLE	NFC/BLE	NFC/BLE
Template	SUPREMA / ISO 19794-2 / ANSI 378	-	-	-
Sensor Type	Optical Sensor (OP6)	-	-	-
Extractor / Matcher	MINEX certified & compliant	-	-	-
CPU / Memory	1.0 GHz / 32MB Flash + 32MB RAM	80 MHz / 256 KB Flash + 64 KB RAM	80 MHz / 256 KB Flash + 64 KB RAM	80 MHz / 256 KB Flash + 64 KB RAM
RS-485	1ch (OSDP compatible)	1ch (OSDP compatible)	1ch (OSDP compatible)	1ch (OSDP compatible)
Wiegand	-	1ch output	1ch output	1ch output
IP rating	-	IP67	IP67	IP67
IK rating	-	IK08	IK08	IK08
Installation type	-	Mullion	Gangbox	Gangbox
Dimensions (WxHxD, mm)	50 x 164 x 37.5	48 x 144.7 x 27	80 x 130 x 25	80 x 130 x 25
Tamper / LED	1 tamper output Multiple colors LED	1 tamper output Multiple colors LED	1 tamper output Multiple colors LED	1 tamper output Multiple colors LED
Power	DC 12V	DC 12V	DC 12V	DC 12V
Operating Temperature	- 20°C ~ 50°C	-35°C ~ 65°C	-35°C ~ 65°C	-35°C ~ 65°C
Operating Humidity	0% ~ 80%, non-condensing	0% ~ 95%, non-condensing	0% ~ 95%, non-condensing	0% ~ 95%, non-condensing
Certificates	CE, FCC, KC, RoHS, REACH, WEEE	CE, FCC, KC, RoHS, REACH, WEEE, SIG	CE, FCC, KC, RoHS, REACH, WEEE, SIG	CE, FCC, KC, RoHS, REACH, WEEE, SIG

	Output Module(OM-120)	Door Module(DM-20)	I/O Module(Secure I/O 2)
Overview	12 relays, 1 RS-485	2 wiegand, 4 relays, 6 outputs, 8 inputs, 1 RS-485	1 relay, 2 inputs, 1 RS-485
	*Connects to CS40 via RS-485 *Elevator control up to 192 floors	OSDP Supported	
	CE, FCC, KC, RoHS, REACH, WEEE	CE, FCC, KC, RoHS, REACH, WEEE	CE, FCC, KC, RoHS

For more information about Suprema's global branch offices,
visit the webpage below by scanning the QR code.
https://www.supremainc.com/en/about/contact-us.asp