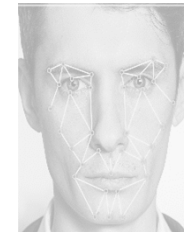




# MATRIX FACE RECOGNITION



# Why MATRIX Face Recognition?

# Higher Productivity



Office Employee  
Productivity



Field User  
Productivity



Productivity of  
HR and Admin



Productivity of  
Manufacturing Unit

# Higher Security



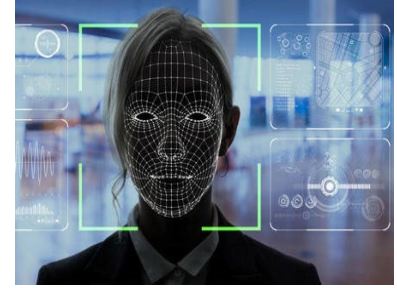
People Security



Physical Asset  
Security



Data Security



Prevent  
Unauthorized Entry  
in Sensitive Areas

# Higher Discipline



No Time Theft



No Extra Break Hours



No Tail-Gaiting



No Excuses Due to  
Poor Performance of  
Finger/Palm Reader









No Manual Attendance  
Correction








On-Time Field  
Meetings

# Conventional FR v/s Matrix COSEC FR

Conventional FR		Matrix COSEC FR
Image Processing (Template based)		Deep Learning Technology
Issues with Varying Height of Users		Consistent Performance for Varying Heights
High Identification Time for More Users		Consistent Performance Regardless of Users
Poor Performance in Sunlight or Low Light		Stable Performance Under Varying Lights
Fixed Deployment		Multiple Deployment Methods
No location Tracking		Location Tracking through GPS

# Conventional FR v/s Matrix COSEC FR

Conventional FR		Matrix COSEC FR
Difficult to Use		Simple to Use and Deploy
Immobility		Mobility
Disparate		Centralized
Inflexible		Flexible
Inaccurate		Accurate

# COSEC FR Applications



Time-Attendance



Access Control



Visitor Management



# COSEC Face Recognition Differentiators

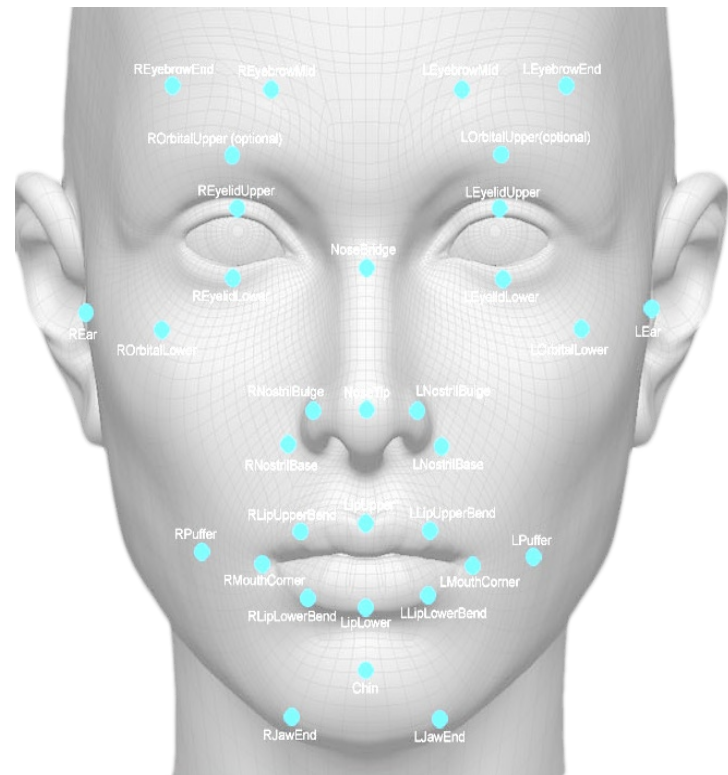
# Deep Learning Technology



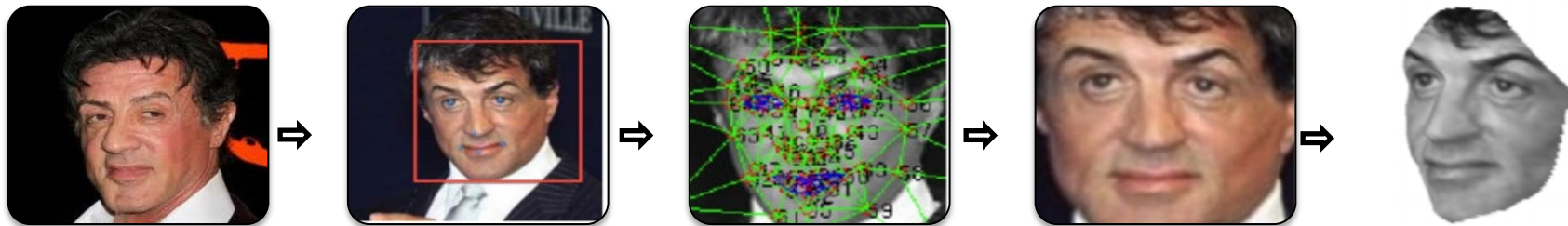
Deep Learning Algorithm



Convolutional Neural Network based  
Matching



# Deep Learning Technology - Working



## Image Capturing

Image Capturing  
from Real-time  
Video Stream

## Face Detection

Face Detection and  
Extraction with  
Reference Nodal  
Points

## Face Alignment

Face Frontalization  
by 2D/ 3D  
Alignment of  
Convolutional  
Layers

## Face Representation

Pixels are  
Transformed into  
Feature Vectors -  
Templates

## Face Matching

Similarity Score  
**98%**

# Better User Experience



No Long Queues



Walk, Look and Go



Perform Special Functions from  
Device UI/UX



Very High Throughput



# Works with Different Usage Scenarios



Low Light Condition up to 30 Lux



Direct Light



Different User Heights



20% Covered Face



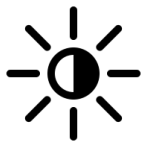
# Higher Accuracy



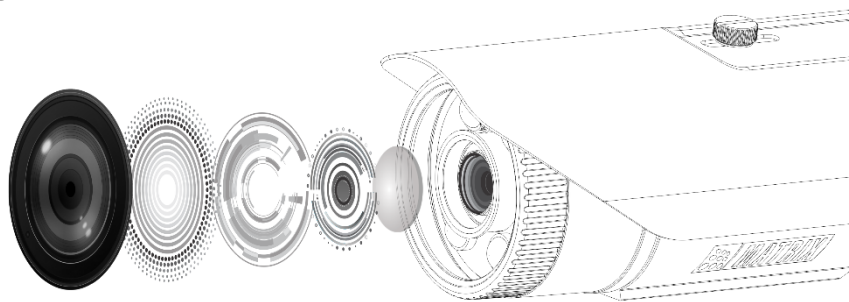
Industry Grade Surveillance Camera



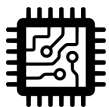
Exceptional Colored Image at Low Light



Stable Performance at Varying Light Conditions



# Higher Speed



High Speed Processor



No Template based Matching



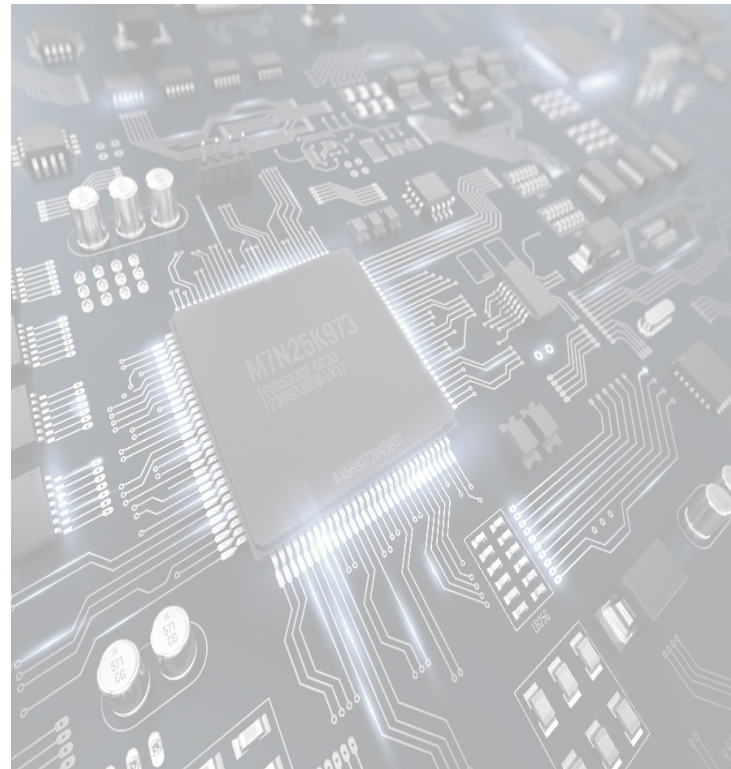
Identification in <1 Second



Look and Go



Same Identification Speed Irrespective of Users



# Higher Capacity



1,00,000 Templates (1:1)



30 Face Angles per User



50,000 Users



5,00,000 Events





# Future Ready Connectivity



3G/4G/VoLTE



Wi-Fi



Bluetooth



USB



PoE

# Works in Challenging Conditions



IK10 Design: Vandal Resistant



IP65/66 Design:  
Stands Still in Harsh Environment



Tamper Detection

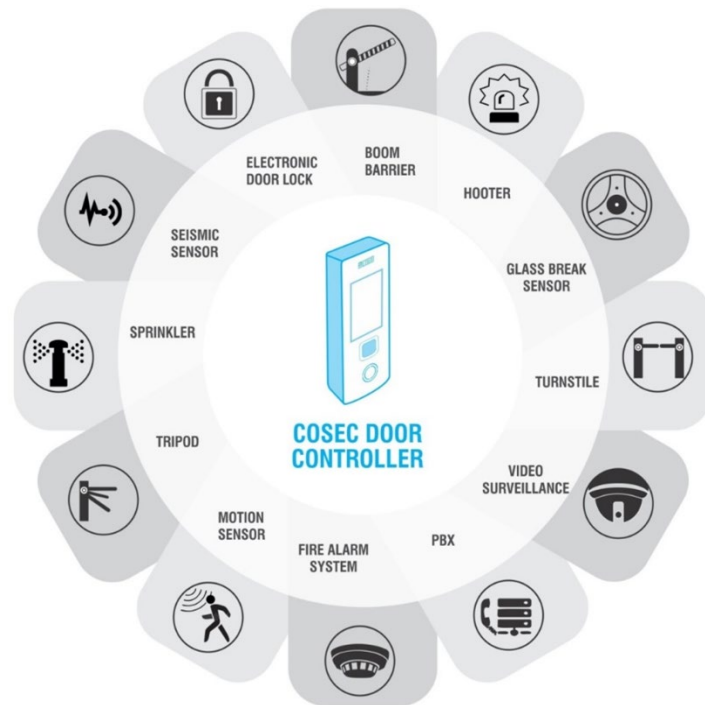


**MATRIX**  
TELECOM | SECURITY



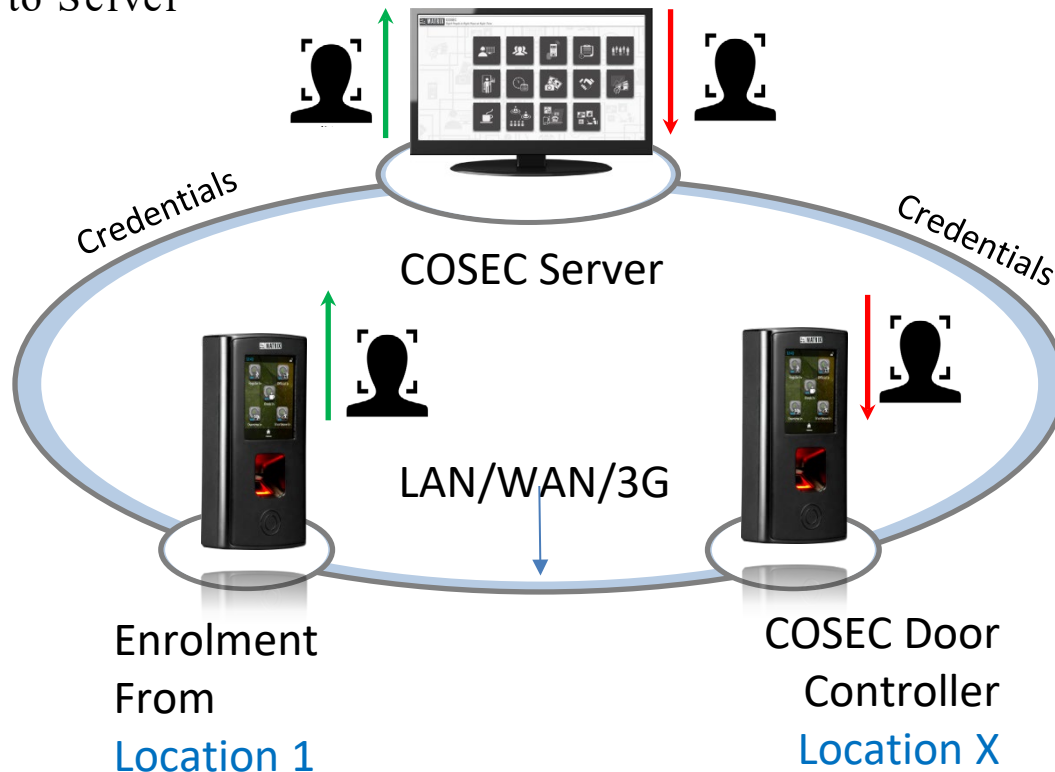
# Access Control Interface

- Connect Door Lock on Any Interface Device
- Door Relay and Door Sense Port
- Auxiliary Input and Output Port
- Exit Reader and Exit Switch Port



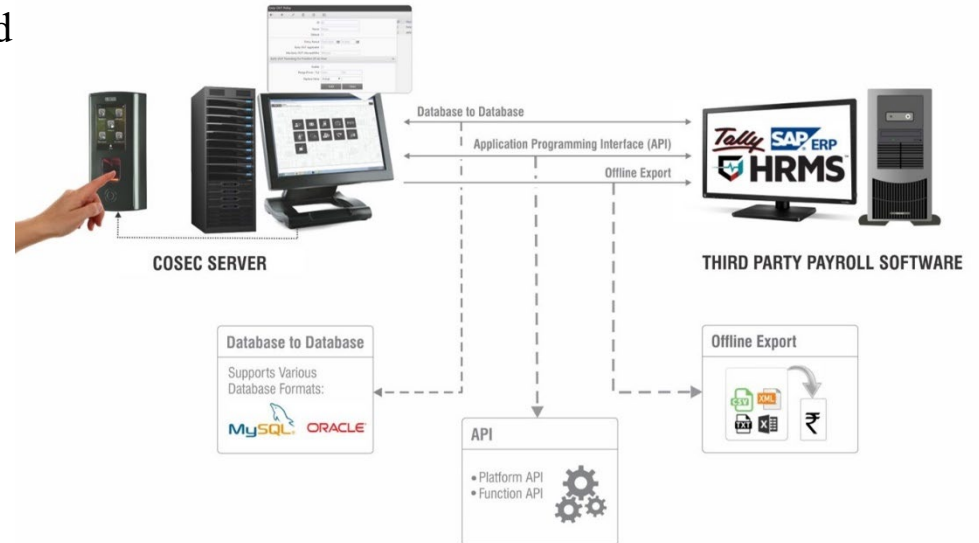
# Auto Push Technology

- Real-time Data Transfer to Server
- No Data Loss
- No Manual Download



# Ready Device API

- Integration with Third Party Software through API
- Device Configuration, User Configuration, Enrolment & more
- No Matrix COSEC Software required



# GPS Tracking

- Capture Face while Attendance Marking
- Capture Real-time Location
- Matrix COSEC APTA Mobile Application
- Eliminate Masquerades



# Encrypted Communication



AES-256 Bit Encryption



SSL Enabled



Highly Reliable



Snoop-proof and Hack Proof



# Multiple Deployment Modes



## Device based FR

- Standalone
- Server based



## Tablet based FR - COSEC MODE

- Server based
- Standalone



## Mobile based FR - COSEC APTA



# Device based FR

- Works with Matrix IP Camera and Door Controller
- Two Deployment Scenarios:
  - Embedded Identification server
  - Windows Identification Server
- High Performance in Different Usage Conditions
  - Lighting Conditions
  - Varying Height
- Flexibility to Mount Camera based on Requirements
- 50,000 Users, 30 Face Angles per User
- Very Accurate and Fast



# Usage Scenario

Best Suited for Harsh Application Scenarios with Large Number of Users



Manufacturing  
Units



Government  
Organizations



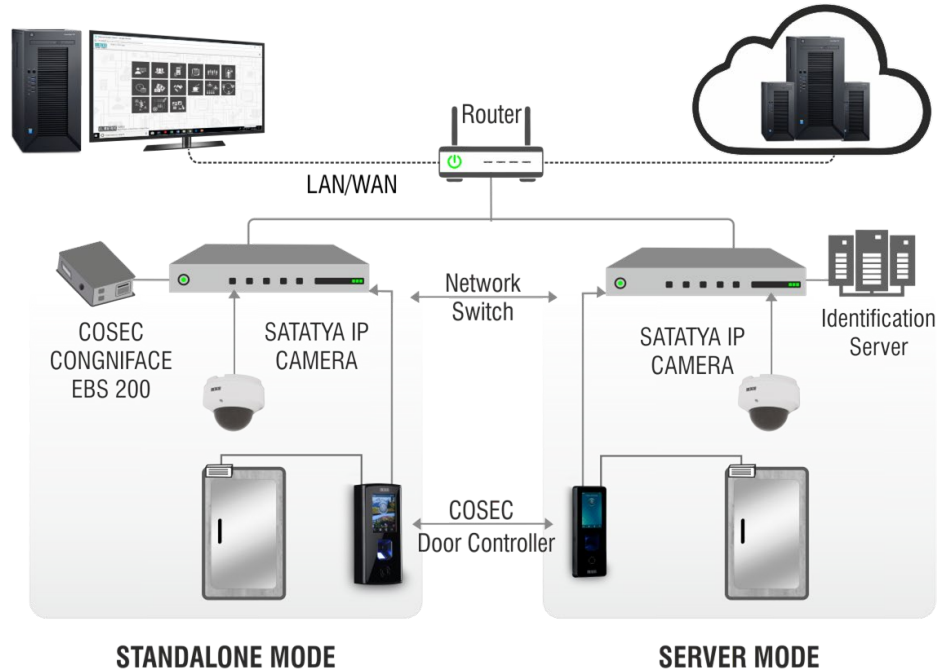
Hospitals



Construction Sites/  
Mining Sites

# Deployment

**COSEC CENTRA - ON-PREMISES (WEB BASED)** / **COSEC VYOM - CLOUD BASED**



## **COSEC DOOR CONTROLLER**

COSEC VEGA SERIES | COSEC DOOR FMX10 | COSEC ARGO SERIES

## **FACE RECOGNITION LICENSES**

COSEC CENTRA FR10/100/1000

COSEC VYOM FR UD 1K/10K/100K/1000K

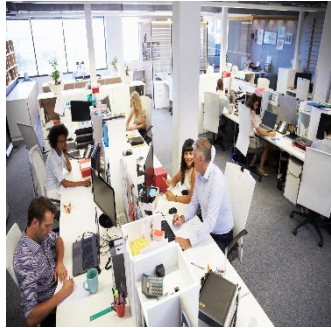
# Tablet based FR

- Works with Android based Tablet or Mobile
- Works on COSEC MODE Application
- Two Deployment Scenarios
  - Standalone Mode
  - Server Mode
- Flexibility to Carry Device for Mobile Sites
- 50,000 Users, 1,00,000 Templates
- GPS Tracking
- For Multiple Users on One Device (1:N)



# Usage Scenario

Best Suited for mobile Applications with Limited Connectivity



Corporate  
Offices



Construction  
Sites



Education  
Institutes  
(Classrooms)



Logistic  
Industry



Retail  
Outlet

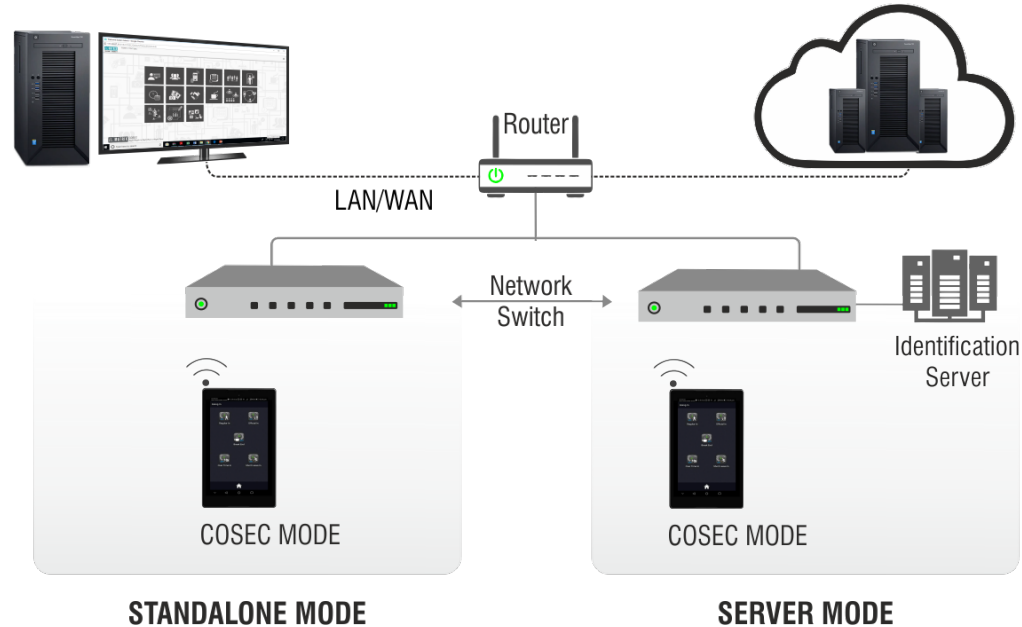
# Deployment

## TIME-ATTENDANCE - TABLET BASED FR SOLUTION

**COSEC CENTRA** - ON-PREMISES (WEB BASED)

/

**COSEC VYOM** - CLOUD BASED



### FACE RECOGNITION LICENSES

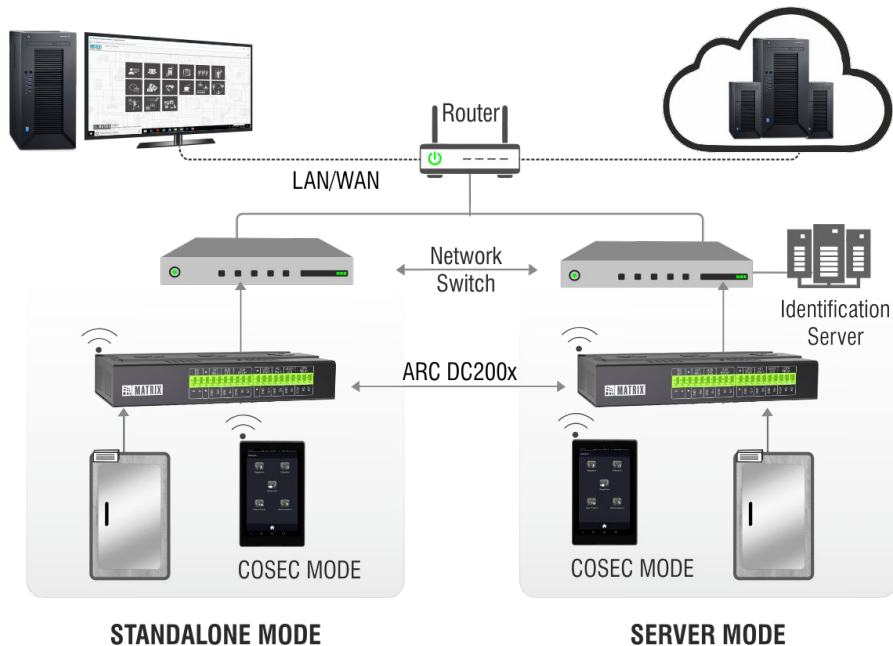
COSEC CENTRA FR10/100/1000

COSEC VYOM FR UD 1K/10K/100K/1000K

# Deployment

## ACCESS CONTROL - TABLET BASED FR SOLUTION

COSEC CENTRA - ON-PREMISES (WEB BASED) / COSEC VYOM - CLOUD BASED



### FACE RECOGNITION LICENSES

COSEC CENTRA FR10/100/1000

COSEC VYOM FR UD 1K/10K/100K/1000K



# Mobile based FR

- Matrix COSEC APTA Application
- Capture Face while Attendance Marking
- Capture Real-time Location
- One Mobile One User (1:1)

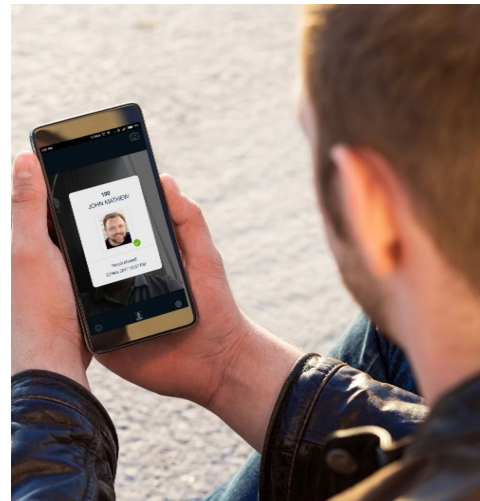




# Usage Scenario



Field Employees



Mobile Users

**FACE RECOGNITION LICENSES**  
COSEC CENTRA FR10/100/1000  
COSEC VYOM FR UD 1K/10/100K/1000K

# Matrix COSEC FR Deployment

## COSEC CENTRA- On Premise Solution



## COSEC VYOM- On Cloud Solution



# Certifications



CE



FCC



RoHS



IP65



IK08

# Success Stories

## Project Highlights

Applications: On-Premise Time-Attendance, Contract Workers Management

Users: 500

Devices: 2, Device based Face Recognition

Technology  
Credential: Face  
Connectivity: PoE

Location: 1

Base Location: Kolkata, India

## Matrix Offerings

- Centralized Solution
- Resolved Finger Identification Issues
- Face Recognition for Contract Workers and Employees
- Products offered:
  - COSEC CENTRA PLATFORM
  - COSEC CENTRA TAM
  - COSEC CENTRA CWM
  - COSEC CENTRA FR
  - COSEC COGNIFACE Solution

## Project Highlights

Applications: Cloud based Time-Attendance

Users: 1,000 Employees

Devices: Tablet Based Face Recognition

Technology  
Credential: Face  
Connectivity: PoE

Location: 1

Base Location: Mumbai, India

## Matrix Offerings

- Device-less Time-Attendance
- Required Centralized Solution on Cloud
- Saved Server, Backend Infrastructure and Maintenance Cost
- Products offered:
  - COSEC VYOM
  - COSEC VYOM TAM
  - COSEC VYOM FR
  - COSEC MODE

Project Highlights:	Matrix Offerings
Applications: On-Premise Time-Attendance	<ul style="list-style-type: none"> <li>• Centralized Solution</li> <li>• Time-Attendance with Face as User Credential</li> <li>• Contactless Solution</li> <li>• Products offered: <ul style="list-style-type: none"> <li>• COSEC CENTRA PLATFORM</li> <li>• COSEC CENTRA TAM</li> <li>• COSEC CENTRA FR</li> <li>• COSEC COGNIFACE Solution</li> </ul> </li> </ul>
Users: 500 Employees	
Devices: 8, Device based Face Recognition	
Technology Credential: Face Connectivity: PoE	
Location: 1	
Base Location: Delhi, India	

## Who Are We

**1 Million+**  
Customers

**2,500+**  
Partners

**60+**  
Products

**50+**  
Countries



A blue rectangular button with rounded corners, containing the text "Stay Tuned & Subscribe" in white. The button is suspended by two thin lines from a central black dot above it.

Stay Tuned & Subscribe



@Matrix Comsec

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MatrixComSec

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@Matrix\_Comsec

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@MatrixComSec

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**www.**[MatrixAccessControl.com](http://www.MatrixAccessControl.com)

# THANK YOU!



[www.MatrixComSec.com](http://www.MatrixComSec.com)