COS AI

APMS
Automatic Parking Management System

Exclusively for Parking Management

OPERATING PRINCIPLE OF APMS:

The Automatic Parking Management system (APMS) works with the Aid of the State-of-the-Art AI based deep learning technology by COS AI. In this system IP/CSI camera, Main Display, Occupancy Display, Occupancy Camera, LPU's, etc., is deployed for detection cars. There is Security cabin both at entry & exit point, to address any issues (if occurs) that requires manual intervention. The Central Command Centre (CCC) is Provided with a Server and a Wall mount Display to monitor the entire APMS. The vacant and occupied parking is monitored by the dedicated occupancy cameras, such that one camera for every 4 car parking slots. The parking occupancy is monitored and broadcast on the CCC and LED display simultaneously.
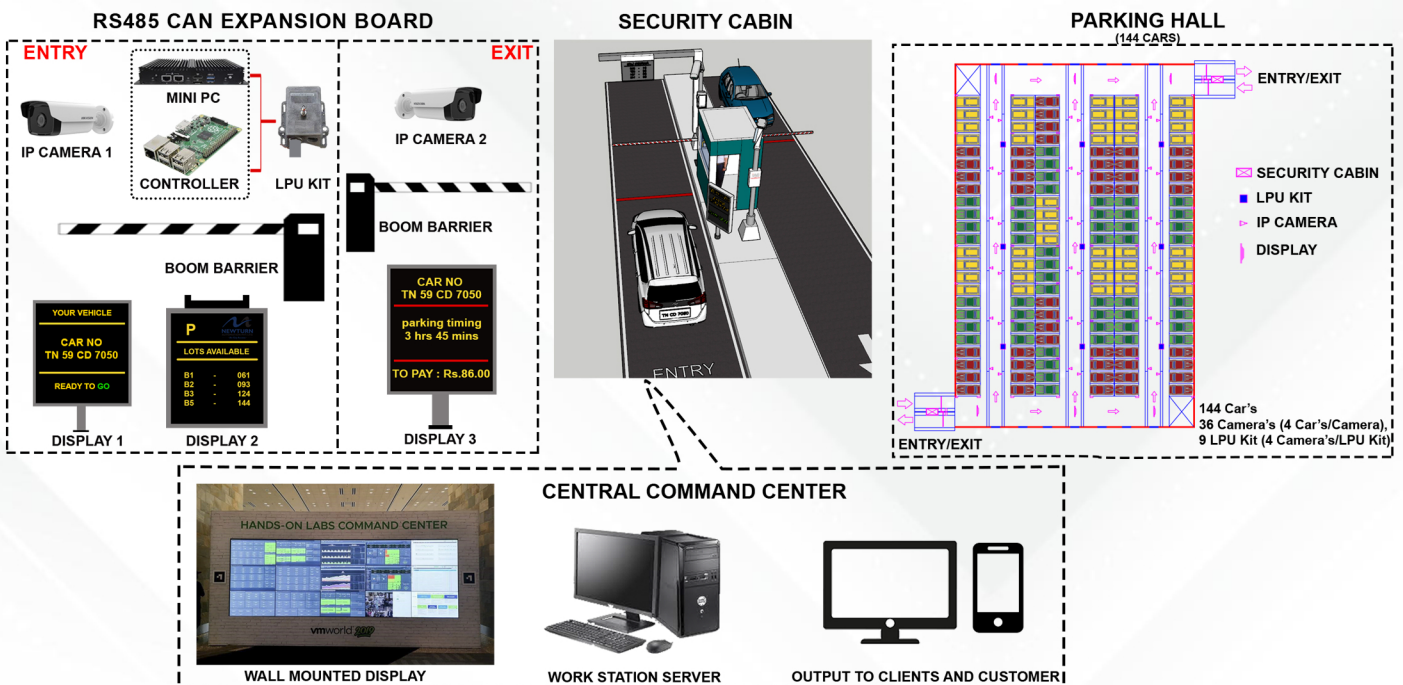
Application - Malls, Residential Apartments, Offices, Hospitals, etc where Parking Fee collection is needed.
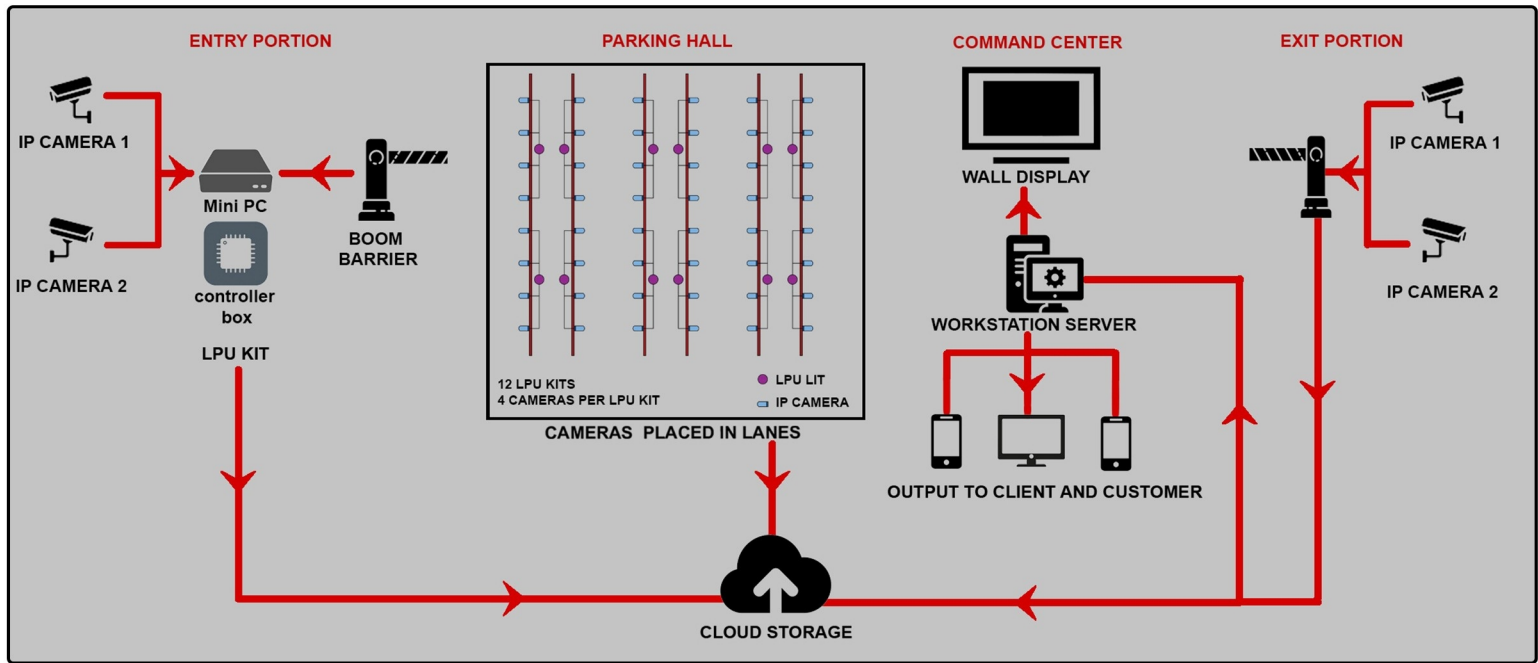
ENTRANCE OPERATION:

In this system, IP/CSI camera is deployed for detection of License plate of the cars, which is processed by the Mini PC (Own ANPR API) and signal is issued to the RS485, for operating the Boom barrier. Once the car enters the parking zone, there is a Large display to show the Number Plate of the vehicle entering the parking area and list all available vacant parking slots, lane-wise. Apart from this, an LED Display is placed at each lane to show the available vacant parking slot specific to that lane alone.

EXIT OPERATION:

Once the Car approach the Exit point, the IP/CSI Camera recognizes the License plate number with the help of Mini PC process and sends the data to the data centre to calculate the parking fee, which is then displayed on the LED screen at the exit point. Parking Fee is collected either through UPI or direct cash. Once fee is paid, server sends signal to the controller RS485, to open the Boom Barrier and the car exits from the parking hazel free.

RS485 CAN EXPANSION BOARD

ENTRY — EXIT

IP CAMERA 1
MINI PC
IP CAMERA 2
CONTROLLER — LPU KIT
BOOM BARRIER
BOOM BARRIER

DISPLAY 1
YOUR VEHICLE
CAR NO
TN 59 CD 7050
READY TO GO

DISPLAY 2
P
LOTS AVAILABLE
B1 : 061
B2 : 093
B3 : 124
B5 : 144

DISPLAY 3
CAR NO
TN 59 CD 7050
parking timing
3 hrs 45 mins
TO PAY : Rs.86.00

SECURITY CABIN

ENTRY

PARKING HALL
(144 CARS)

ENTRY/EXIT

⊠ SECURITY CABIN
■ LPU KIT
▷ IP CAMERA
✎ DISPLAY

ENTRY/EXIT

144 Car's
36 Camera's (4 Car's/Camera),
9 LPU Kit (4 Camera's/LPU Kit)

CENTRAL COMMAND CENTER

HANDS-ON LABS COMMAND CENTER
vmworld

WALL MOUNTED DISPLAY   WORK STATION SERVER   OUTPUT TO CLIENTS AND CUSTOMER

COS AI Deployment Architecture

ENTRY PORTION — PARKING HALL — COMMAND CENTER — EXIT PORTION

IP CAMERA 1 / IP CAMERA 2 → Mini PC / controller box → BOOM BARRIER → LPU KIT

12 LPU KITS / 4 CAMERAS PER LPU KIT — ● LPU LIT — ▭ IP CAMERA — CAMERAS PLACED IN LANES

WALL DISPLAY — WORKSTATION SERVER — OUTPUT TO CLIENT AND CUSTOMER

IP CAMERA 1 / IP CAMERA 2

CLOUD STORAGE

APMS - INDICATIVE LIST OF KEY COMPONENTS
(Rough Estimation for parking of 144 cars)

SI.NO.	ATMS Components	Units	Qty	Remarks
1	6.0m pole with 1m arm at 5.0m with solar powered Amber flasher light	No's	2	By client
2	4.0k 8.0MP IP Camera (for ANPR)	No's	4	-
3	GPU powered local processing unit for detecting ANPR	No's	2	-
4	Controller (RS485) to Link LPU unit and Boom barrier	No's	2	-
5	Boom barrier	No's	4	By client
6	LED Display	No's	6	By Client
7	Security Cabin	No's	2	By client
8	Occupancy Display	No's	6	By Client
9	Wide angle Camera - 1 camera for 4 cars	No's	36	-
10	LPU Kit - 1 LPU Kit for 3 camera	No's	12	-
11	Central Command Centre(CCC)	No's	1	By Client

ENTRY PORTION

IP CAMERA — SECURITY CABIN — DISPLAY 2 — BOM BARRIER — DISPLAY 1 — VEHICLE — EXIT — ENTRY

YOUR VEHICLE / CAR NO / TN55 CD 7050 / READY TO GO

EXIT PORTION

IP CAMERA — SECURITY CABIN — BOOM BARRIER — DISPLAY 3 — VEHICLE

CAR NO / parking timing 1hrs 40 mins / TO PAY Rs.86.80
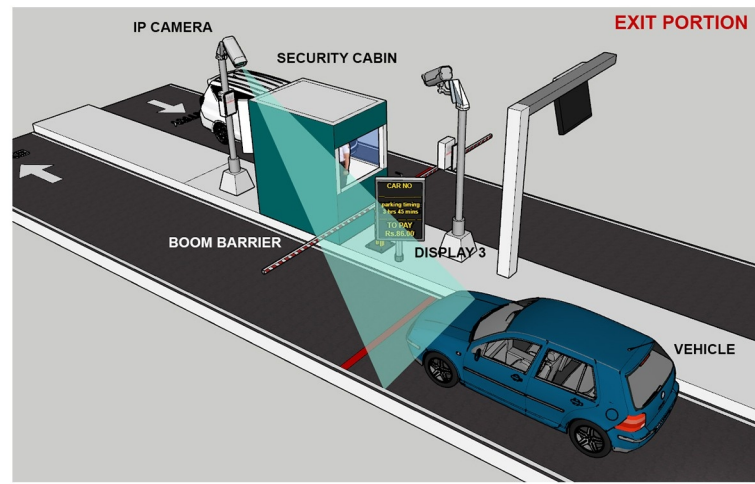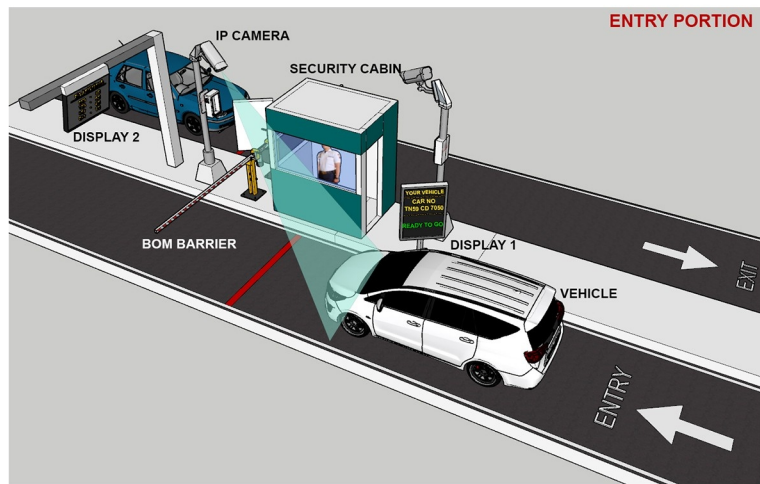
Terms & Conditions

★ The calculation is done on the assumption that camera detects 4cars.

★ The equipment at the entrance and exit can be connected to the CCC through wire also instead of Cloud or WAN.

★ Internal and external wiring, lighting provisions taken suitable according to the site

COS AI – AI Powered Intelligent Transportation System Provider

• **Automatic Parking Management System** - Our customized solution offers seamless parking management, ensuring a hassle-free experience for both operators and users.

• We also provide customized AI-based services in ITS for our clients.

Please contact us or visit **www.cosai.in** for more information.

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