

VIDEO BASED AUTOMATIC TRAFFIC COUNTER CUM CLASSIFIER

TECHNICAL DATASHEET

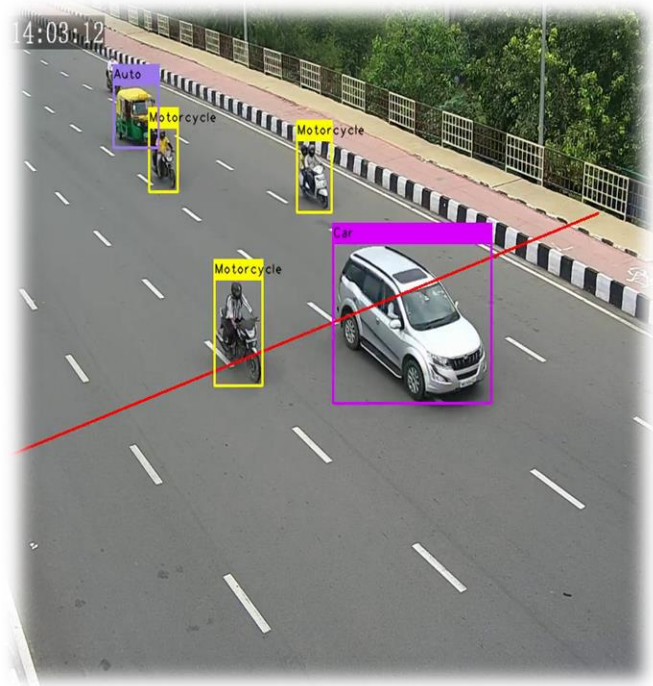


At a Glance

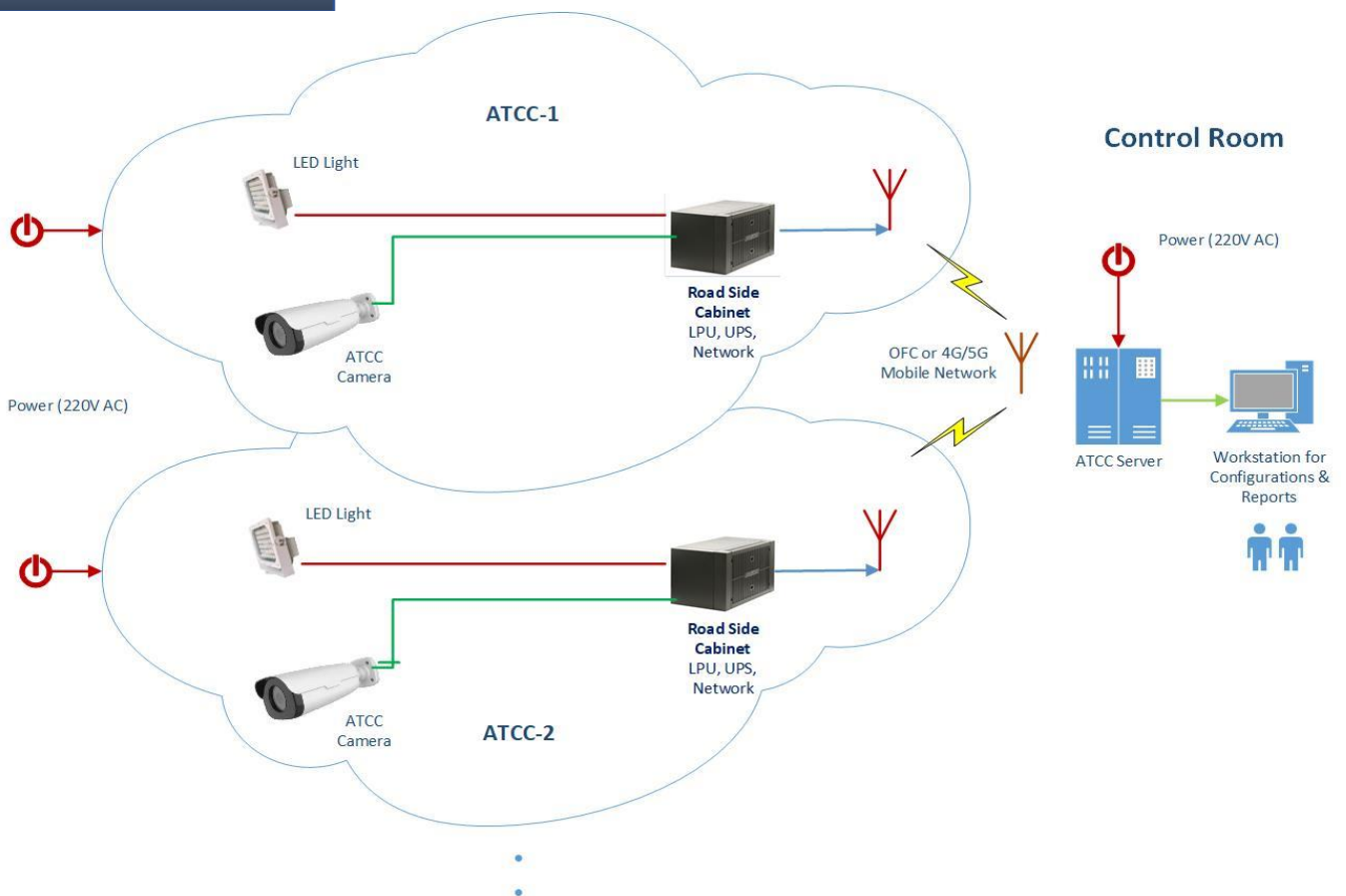
Vaaan's ATCC System possesses the functions such as vehicle counting, vehicle classification and integration with control center. It is a complete AI based video solution that provides high accuracy in real-time vehicle counting and classification. The system counts and classifies vehicles through live video feed taken from the IP/CCTV camera located at desired location.

Key Feature:

- Free Flow Traffic Count & Classification up to multiple lanes
- Accuracy for traffic count > 99%
- Typical accuracy for automatic vehicle classification > 95%
- Accuracy for vehicle classification (with human audit) > 99%
- Metadata: Lane ID, Timestamp, Flow Direction, Vehicle Image
- Robust to lighting, weather, shadows & surroundings
- 24/7 operation
- Minimal Maintenance



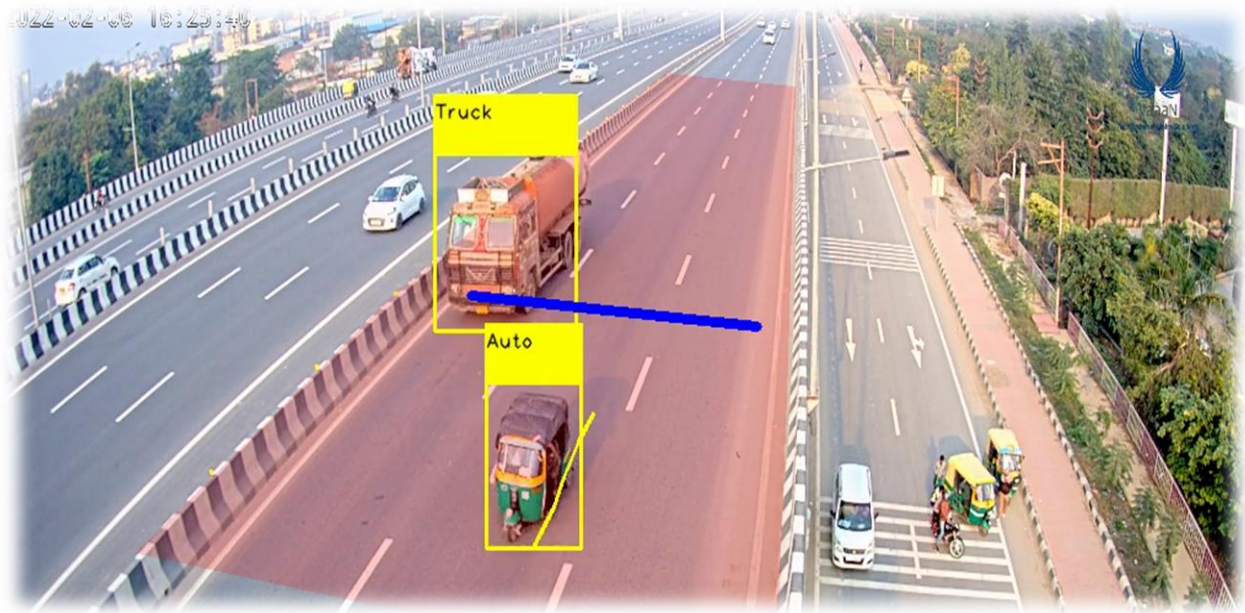
Typical ATCC Architecture



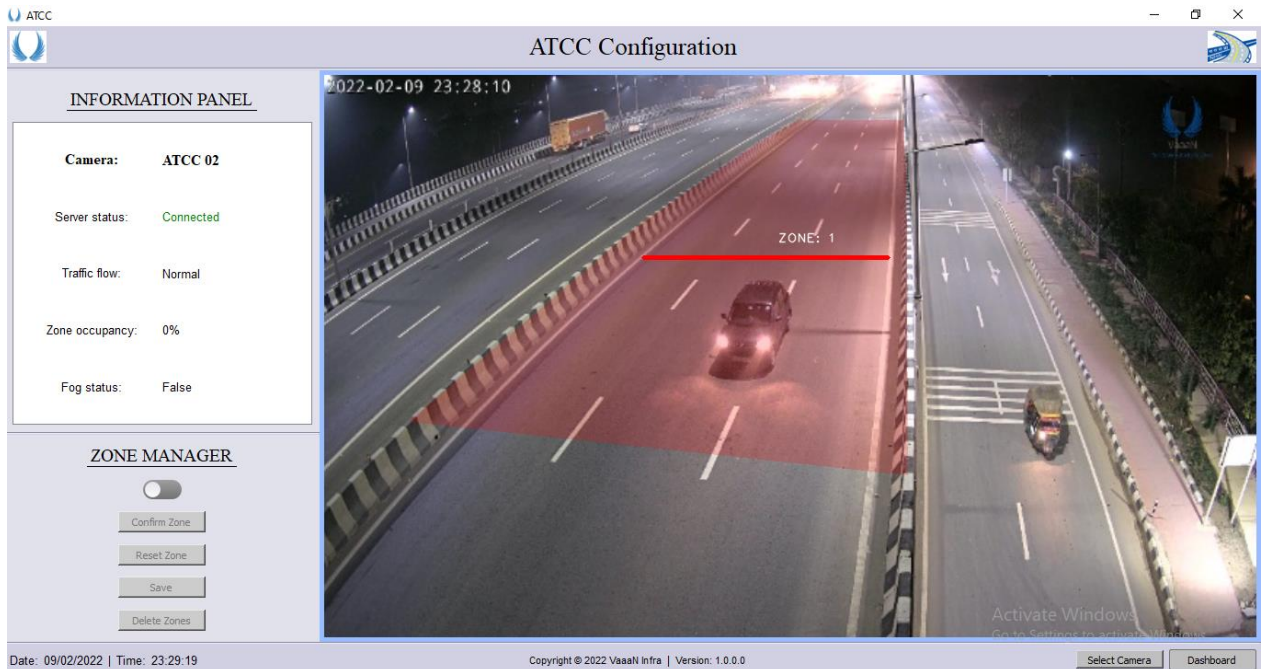
ATCC Technical Specifications

Camera	
Sensor	4K/ 10MP Ultra-high light-sensitive 4/3" sensor
Lens	12 – 48 mm Canon lens
Angle of view (H)	90°~ 21° (H); 49° ~ 12° (V)
Shutter	Auto/Manual, 1 ~ 1/45500s
Minimum Illumination	Color: 0.0005 Lux (F1.5, AGC ON); 0 Lux with IR
Iris	Auto/Manual, F1.5 ~ F3.4, DC-Iris
IR Range	up to 200m (656ft) IR range (Auto Switch)
WDR	>120dB
Video Compression	Ultra 265, H.265, H.264, MJPEG
Frame Rate	Main Stream: 2MP (1920*1080), > 60 fps
HLC / BLC	Should be supported
Network	1 RJ45 10M/100M Base-TX Ethernet
Power	AC 24V±25%, Max 21W, -P: PoE (IEEE 802.3at)
Environmental	-40°C ~ 60°C (-40°F ~ 140°F), Humidity: ≤95% RH
Ingress Protection	IP67
ATCC Processing Unit	
Processor	Intel Core i7-6700, 2.4 GHz
Operating System	Ubuntu Linux 18.04
Memory	16GB DDR4 ECC or Non-ECC SODIMM
Graphics	Nvidia RTX A2000 / RTX 2060 (6GB)
Storage	1TB SSD
Network	100 / 1000 Base-T Ethernet
I/O Ports	HDMI 1.4b x2; Audio x 2 (MIC-in, Line-out); USB 3.0 x 4; DB-9 x 1 for RS-232/422/485; 3 pin DC Power input x 1 (+, -, GND)

ATCC @ Site



Typical ATCC Module



ATCC Configuration Monitoring Module

AI ATCC Back-Office | localhost:5558/#/liveMonitor

Live Monitoring

Shift 3 :21:30 - 06:59 | ATCC 26+265 | All Lane

Transaction ID	Date Time	Location	Class	Lane	Camera Direction	Vehicle Image
134152	2022-02-09 23:36:06	ATCC 26+265	LCV	2	LHS	
134151	2022-02-09 23:35:41	ATCC 26+265	Two Wheeler	2	LHS	
134150	2022-02-09 23:35:42	ATCC 26+265	Car/Jeep	2	LHS	
134149	2022-02-09 23:35:32	ATCC 26+265	Car/Jeep	2	LHS	
134148	2022-02-09 23:35:12	ATCC 26+265	Car/Jeep	2	LHS	
134147	2022-02-09 23:35:21	ATCC 26+265	Car/Jeep	2	LHS	
134146	2022-02-09 23:35:09	ATCC 26+265	Car/Jeep	2	LHS	
134145	2022-02-09 23:35:06	ATCC 26+265	Car/Jeep	2	LHS	

Activate Windows
Go to Settings to activate Windows.

ATCC Live Monitoring

AI ATCC Back-Office | AXIS Q1798-LE Image | localhost:5558/#/unreviewed

Unreviewed Transaction

Reviewing Transaction: 133547 | Total Count : 80 | Close

Vehicle Image:

Classification: LCV

Remark: _____

Id	Date Time	Plaza	Lane	Class	Class Confidence (%)
133547	2022-02-09 21:43:20	ATCC 26+265	2	LCV	72

Prev Next Save Cancel

Id	Date Time	Plaza	Lane	Class	Class Confidence (%)	Vehicle Image
133589						
133582						
133580						
133568						
133566						
133561						
133560						
133547	2022-02-09 21:43:20	ATCC 26+265	2	LCV		
133539	2022-02-09 21:41:38	ATCC 26+265	2	LCV		

Activate Windows
Go to Settings to activate Windows.

Audit Module

AI ATCC Back-Office | localhost:5558/#/report

Report Management

Class-wise Traffic Count Report

From : 2/9/22, 10:00 PM | Site Name: | Lane No : A
 To : 2/9/22, 11:59 PM

Class	Total Vehicle
Two Wheeler	77
Three Wheeler	12
Car/Jeep	347
LCV	93
Truck/Bus	32
MAV	44
Total Reviewed Transaction	605
Total Unreviewed Transaction	136
Total Vehicle Count	741

Place: ATCC 26+265
 Lane: All Lane
 Report Type: Class wise Traffic Count Report

Clear Search

Activate Windows
Go to Settings to activate Windows

Report Module

Typical ATCC Classes

ID	Vehicle Class	Reference Image	ATCC Camera Profile
1	Two Wheelers (Motorized)		
2	Three Wheelers		
3	Four Wheelers		
4	Light Commercial Vehicle		
5	Trucks/Buses		
6	Multi Axle Vehicle		

VIDEO BASED AUTOMATIC TRAFFIC COUNTER CUM CLASSIFIER

TECHNICAL DATASHEET

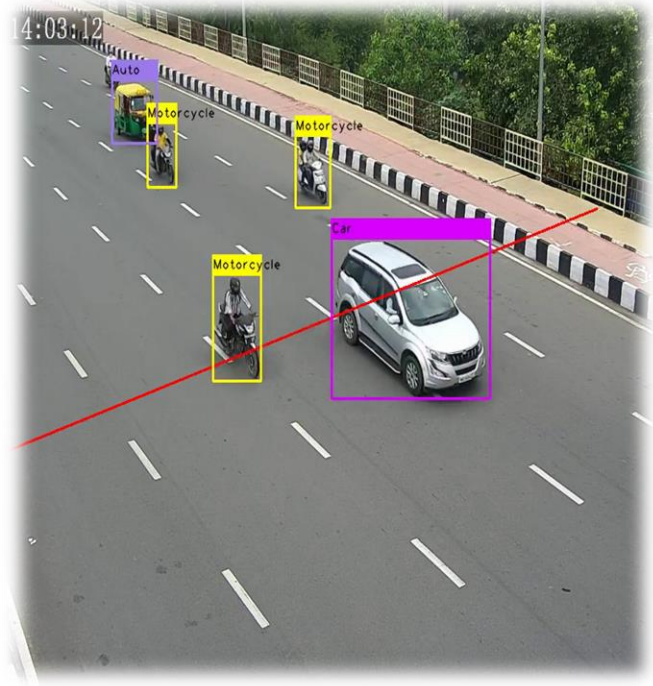


At a Glance

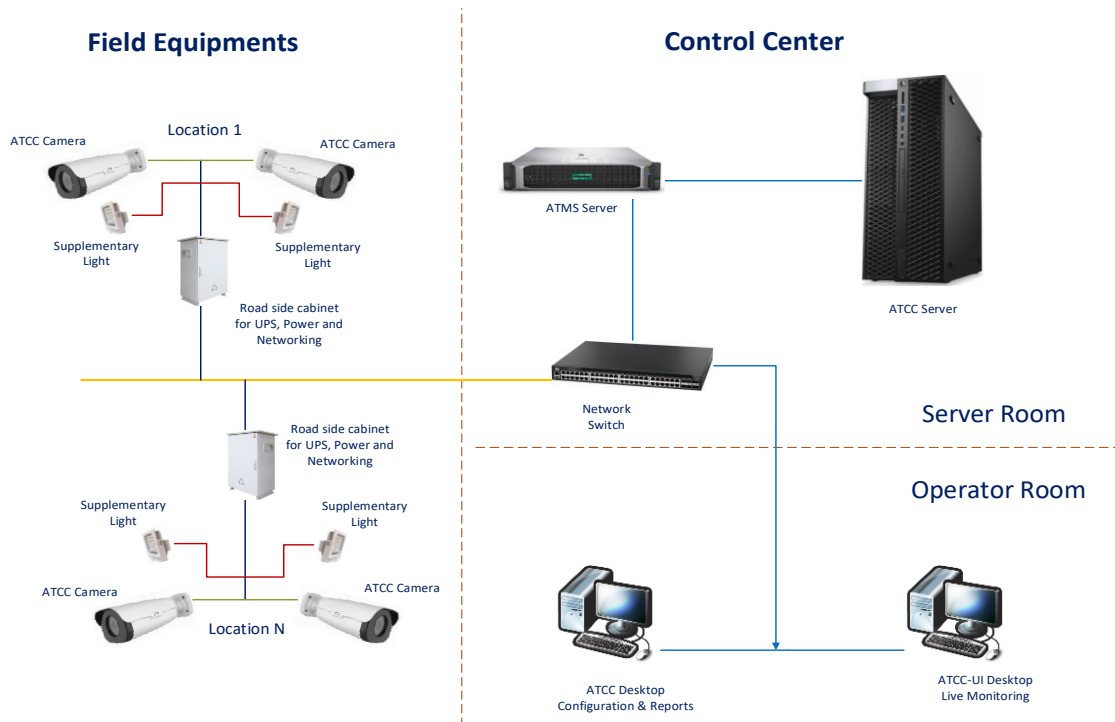
Vaaan's ATCC System possesses the functions such as vehicle counting, vehicle classification and integration with control center. It is a complete AI based video solution that provides high accuracy in real-time vehicle counting and classification. The system counts and classifies vehicles through live video feed taken from the IP/CCTV camera located at desired location.

Key Feature:

- Free Flow Traffic Count & Classification up to 4 lanes
- Accuracy for traffic count > 99%
- Typical accuracy for automatic vehicle classification > 95%
- Accuracy for vehicle classification (with human audit) > 99%
- Metadata: Lane ID, Timestamp, Flow Direction, Vehicle Image
- Robust to lighting, weather, shadows & surroundings
- 24/7 operation
- Minimal Maintenance



Typical ATCC Architecture



ATCC Camera (Typical Specifications)

Parameter	Specifications (6 Class)	Specifications (20 Class)
Sensor	1/1.8", 2 megapixel, progressive scan, CMOS	4K/ 10MP Ultra-high light-sensitive 4/3" sensor
Lens	6.5 ~ 143mm, AF automatic focusing and motorized zoom lens	12 – 48 mm Canon lens, AF automatic focusing and motorized zoom lens
Angle of view (H)	59°~ 3° (H); 34.6° ~ 1.6° (V)	90°~ 21° (H); 49° ~ 12° (V)
Shutter	Auto/Manual, 1 ~ 1/100000s	Auto/Manual, 1 ~ 1/45500s
Minimum Illumination	Color: 0.0005 Lux (F1.5, AGC ON); 0 Lux with IR	Color: 0.0005 Lux (F1.5, AGC ON); 0 Lux with IR
Iris	Auto/Manual, F1.5 ~ F3.4, DC-Iris	Auto/Manual, F1.5 ~ F3.4, DC-Iris
Day/Night	IR-cut filter with auto switch (ICR)	IR-cut filter with auto switch (ICR)
IR Range	up to 200m (656ft) IR range	up to 200m (656ft) IR range (Auto Switch)
WDR	>120dB	>120dB
Video Compression	Ultra 265, H.265, H.264, MJPEG	Ultra 265, H.265, H.264, MJPEG
Frame Rate	Main Stream: 2MP (1920*1080), > 60 fps	Main Stream: 2MP (1920*1080), > 60 fps
HLC / BLC	Should be supported	Should be supported
Compatible Integration	ONVIF (Profile S, Profile G, Profile T), API	ONVIF (Profile S, Profile G, Profile T), API
Network	1 RJ45 10M/100M Base-TX Ethernet	1 RJ45 10M/100M Base-TX Ethernet
Power	AC 24V±25%, Max 21W, -P: PoE (IEEE 802.3at)	AC 24V±25%, Max 21W, -P: PoE (IEEE 802.3at)
Environmental	-40°C ~ 60°C (-40°F ~ 140°F), Humidity: ≤95% RH	-40°C ~ 60°C (-40°F ~ 140°F), Humidity: ≤95% RH
Ingress Protection	IP67	IP67

ATCC Processing Unit

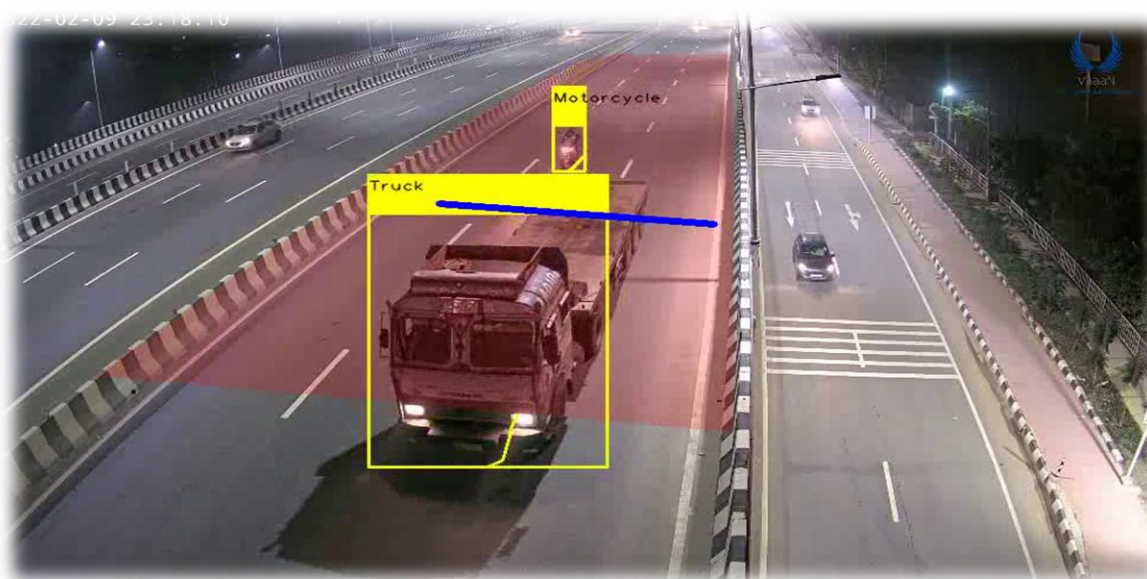
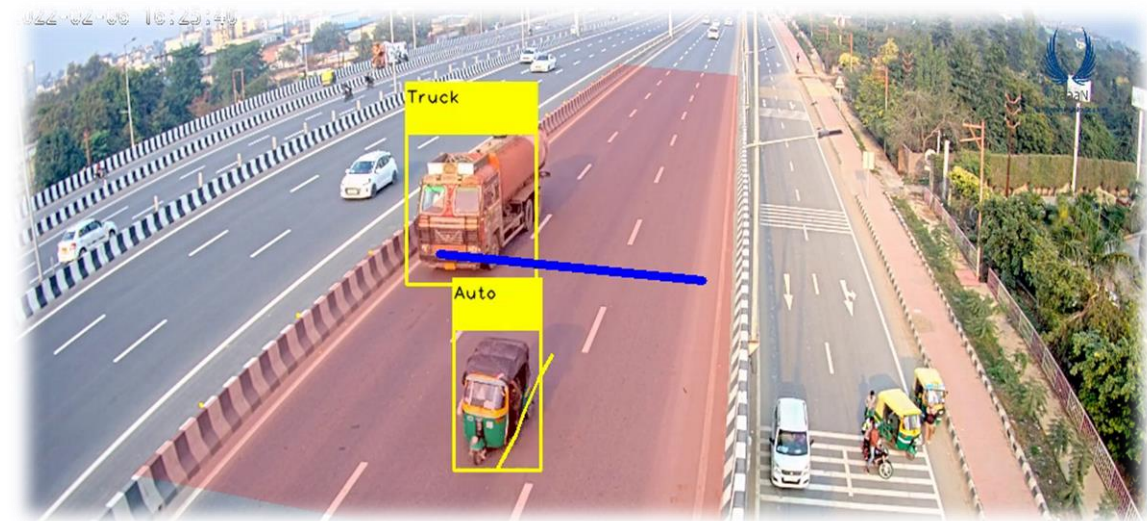
The compute requirement of ATCC Processing Unit at Control Centre is required to be optimally scaled as per number of Camera's/Locations it is required to handle. A typical ATCC Processing Unit for handling approximately 8 Video streams is as follows.

Parameter	Specifications
Processor	Intel Xeon Processor W-2295 18C 3.0GHz
Operating System	Ubuntu Linux 18.04
Memory	64GB 2x16GB DDR4 2933MHz RDIMM ECC Memory
Graphics	Nvidia Quadro RTX A4000 16GB
Storage	3.5" 8TB 7200rpm SATA Enterprise Hard Drive
I/O Ports	USB 3.1 Gen 1 Type A (6); Serial (1); RJ45 Network (1); PS2 (2); Audio Line out (1); Audio Line in/Microphone (1)

LED Light (Typical Specifications)








Supplementary LED Light (Typical Specifications)	
Power	100 W
Ingress Protection	IP66
Housing / Glass	Powered Coating Aluminium, Anti-Glare Toughened Glass
Input Voltage	>110-280 VAC 50Hz
LED Lumen Efficiency	160-180 Lumen per Watt
Temperature	-4 to 55 Degree Celsius

ATCC @ Site

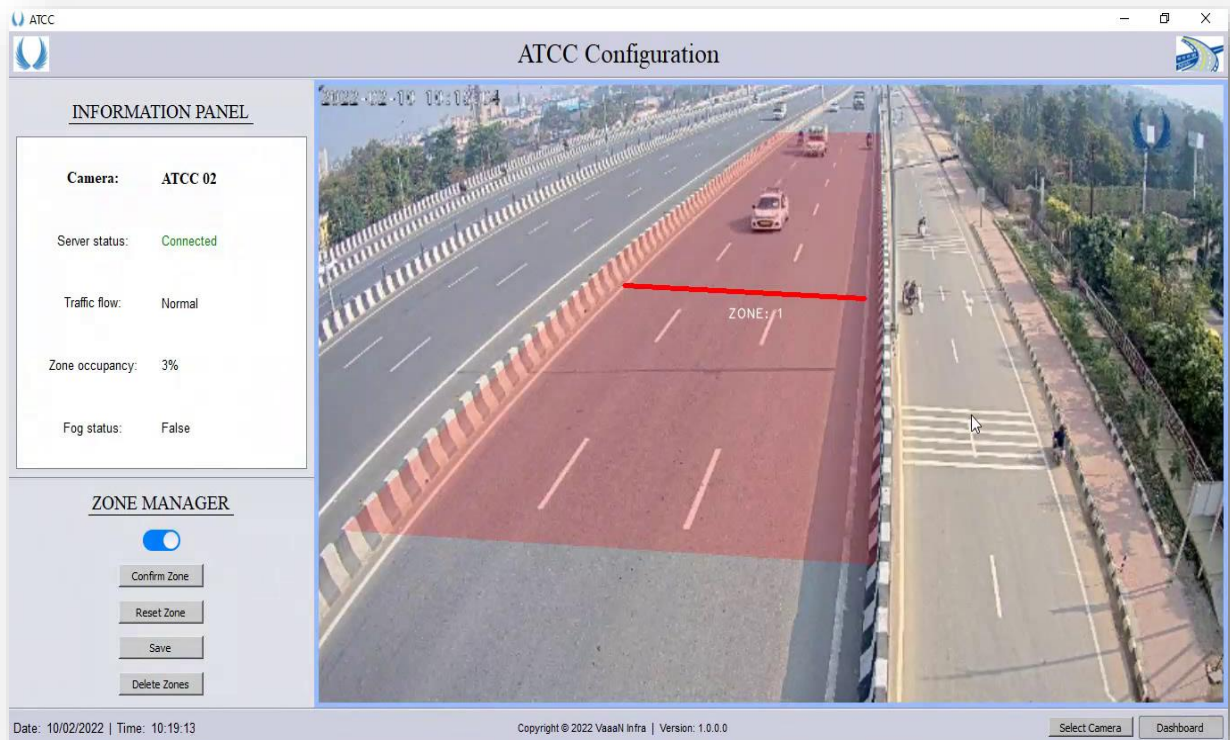


Typical ATCC Classes

ID	Vehicle Class (6)	Vehicle Class (20)	Reference Image	ATCC Camera Profile
1	Two Wheelers	Bicycle		
2		TwoWheeler		
3	Three Wheelers	Cycle_Rickshaw		
4		ThreeWheeler_Commercial		
5		ThreeWheeler_Passenger		
6	Car / Jeep	Car		
7		Ecco		
8		Traveller		
9	Light Commercial Vehicles	Tractor		
10		Tractor_with_Trailer		
11		Pickup		
12		TataAce		
13		LCVTruck		
14	Trucks / Buses	TwoAxle_Bus		
15		TwoAxle_Truck		

16	Multi Axle Vehicle	ThreeAxle_Bus		
17		ThreeAxle_Truck		
18		MAV_4to6Axle		
19		OSV_7to10Axle		
20		EarthMovingEquipments		

ATCC User Interface



ATCC Configuration

2022-02-09 04:02:14

INFORMATION PANEL

- Camera: ATCC 02
- Server status: Connected
- Traffic flow: Normal
- Zone occupancy: 3%
- Fog status: False

ZONE MANAGER

Confirm Zone

Reset Zone

Save

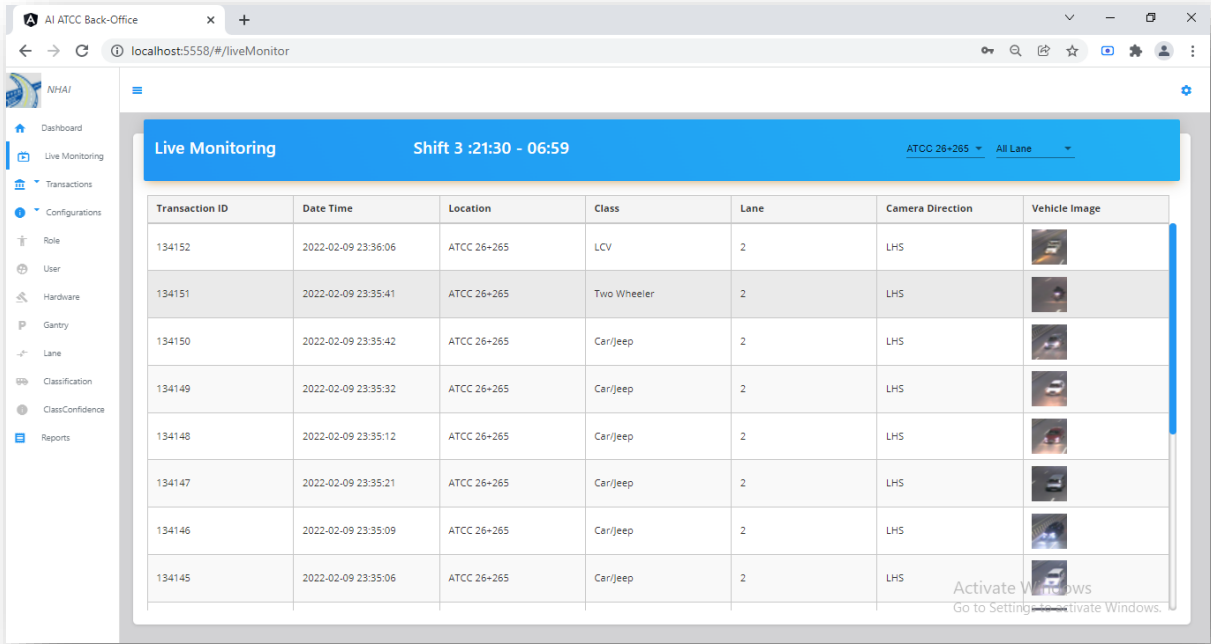
Delete Zones

Date: 10/02/2022 | Time: 10:19:13

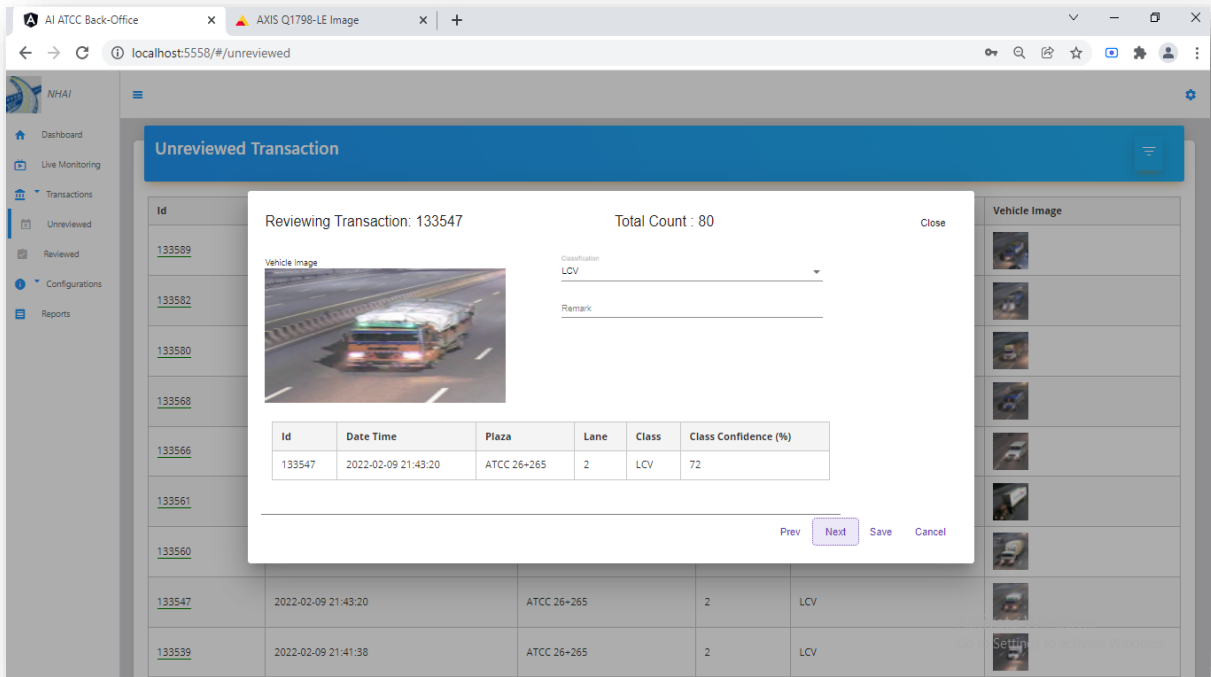
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Select Camera Dashboard

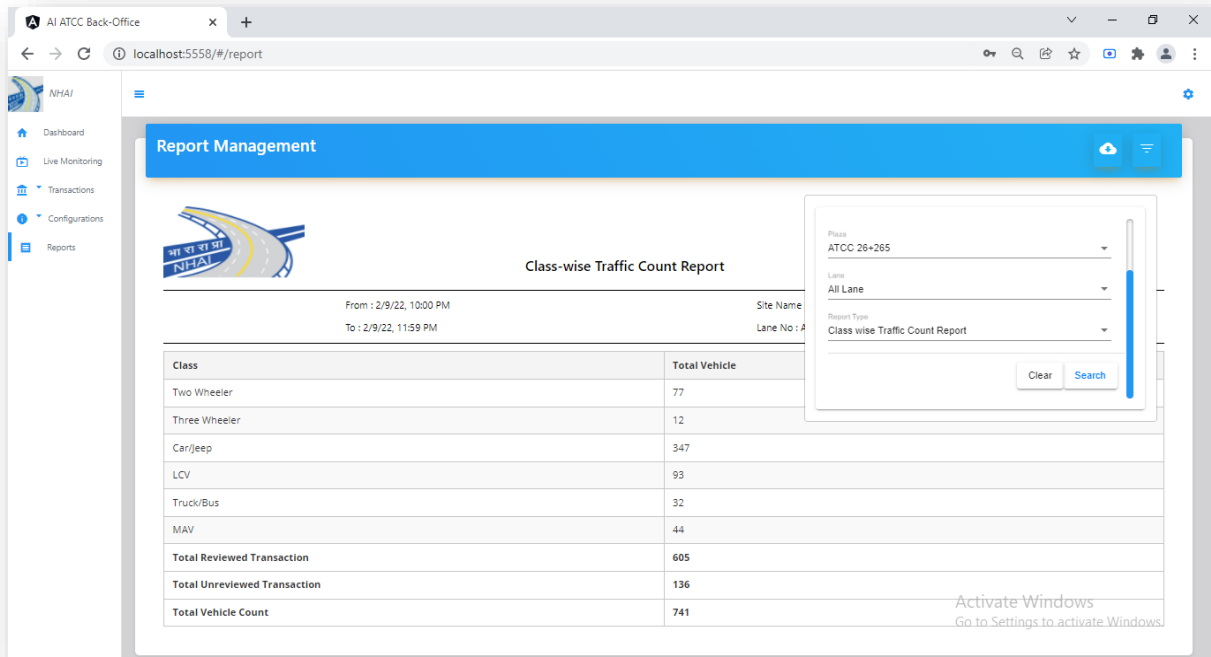
ATCC Zone/Line Configuration Module



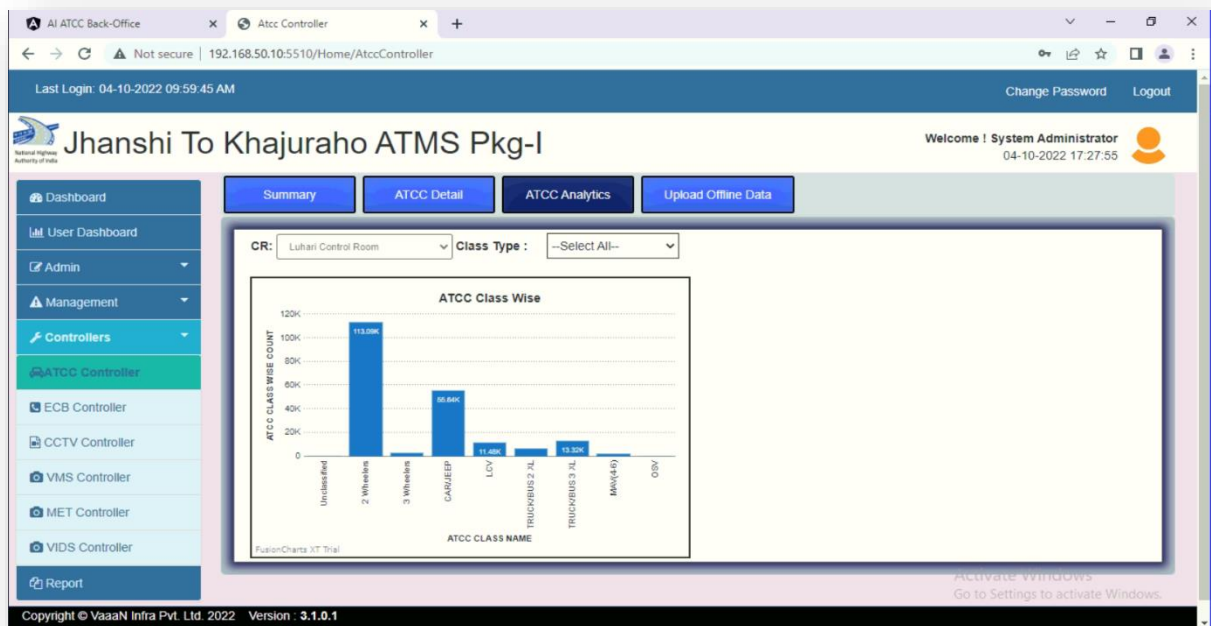
ATCC Live Monitoring



Audit Module



Report Module



ATCC Analytics – Integration with ATMS