SCI-COM Software India Pvt. Ltd.

Company Profile

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About Us

SCICOM Software Pvt. Ltd.

Design and development of Machine Vision Systems, Factory Automation and Control Solutions and Software Testing and Validation Services

SCICOM software provides product engineering, software solutions and products to following industries – *Automotive and Transportation, FMCG, Industrial goods, Pharmaceutical and Chemical, Arms and Defense, Food processing and Medical*.

SCI-COM offers **Engineering Software Services** in the field of digital image processing, numerical analysis and scientific computing.

We at SCI-COM apply right combination of professional experience, creativity and hard-work to deliver custom solutions at remarkable reliability and efficiency.

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Clients

ARAI
Progress through Research

KLA Tencor

wipro

WÖHR

ifm

FIE
Group

BAJAJ

Chitale

上海佳万智能科技有限公司
SHANGHAI JOYWIN INTELLIGENT TECHNOLOGY CO.,LTD

Badve Group

SCHOTT
KAISHA

IMAGION
Software Solutions

Mahindra

Allengers
Passion for excellence

Key Competencies

Machine Vision

- ✓ Presence/Absence – *Count no. of part, Inspect for shortage*
- ✓ Irregularity, Flaw & Damage – *Foreign Object Detection, Defect Detection (Shape, Size, Color, Texture, Pattern, etc.)*
- ✓ Dimension and Position Measurement – *Edge Measurement, Distance Measurement, Location and Orientation, Error Proofing*
- ✓ Data Reading – *Printed Text, Barcode, QR, Dot Peen, Alpha-Numeric Codes*

Security and Surveillance

- ✓ City Surveillance – *Video Analytics, Access Control, Pedestrian Surveillance, License Plate Recognition*
- ✓ ATM Security System – *Face Detection, Remote Monitoring*
- ✓ Virtual Fence – *Intrusion Detection, Object Tracking*
- ✓ X-Ray Imaging **–** *Baggage Scanners*

Key Competencies

Industrial Automation and Control

- ✓ Automated Car Parking System – *Combo-Lift Parking, Tower Parking*
- ✓ Automotive Data Loggers – *Online Vehicle Tracking, Monitoring of Automobile data (Distance, Acceleration, Temperature, Vibrations, etc.)*
- ✓ Control Panel Design – *Electrical Design and Panel Development*
- ✓ Design/Development of SCADA systems

Software Development and Testing

- ✓ Image Processing Algorithms
- ✓ Fragment Analysis Software and Data Analysis
- ✓ Tensor Flow Development
- ✓ Software Validation of Automated Systems

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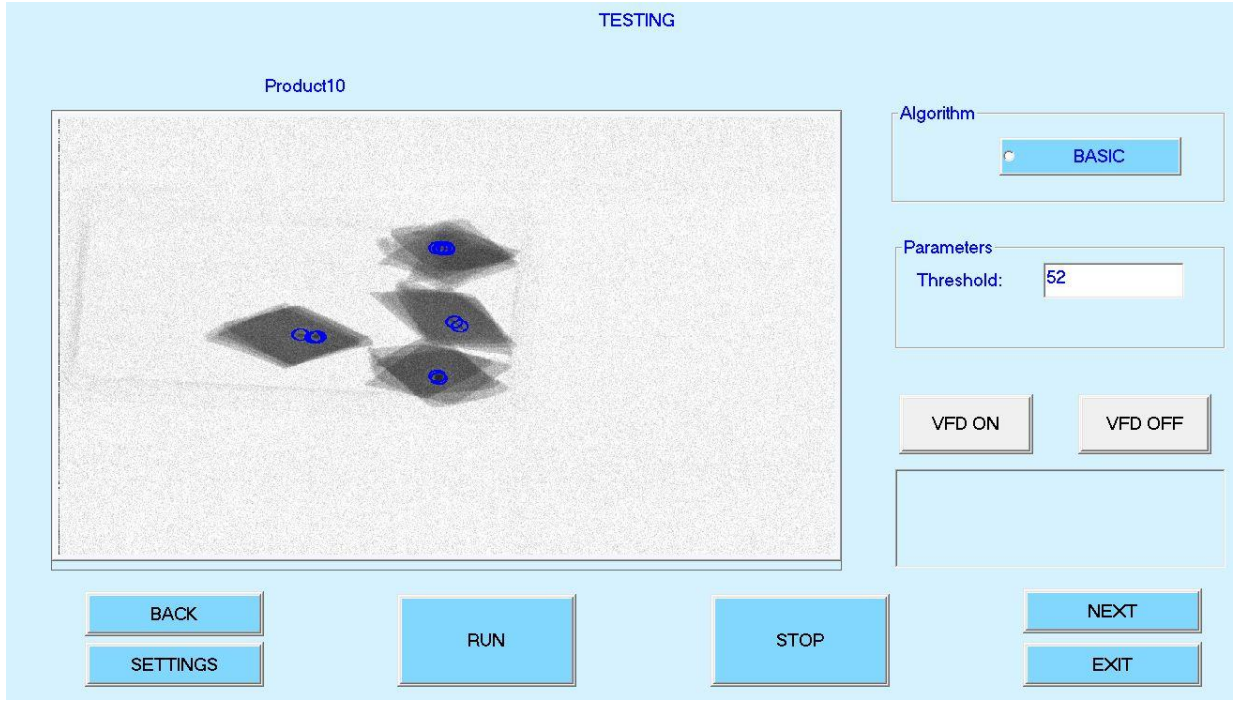
Our Innovations

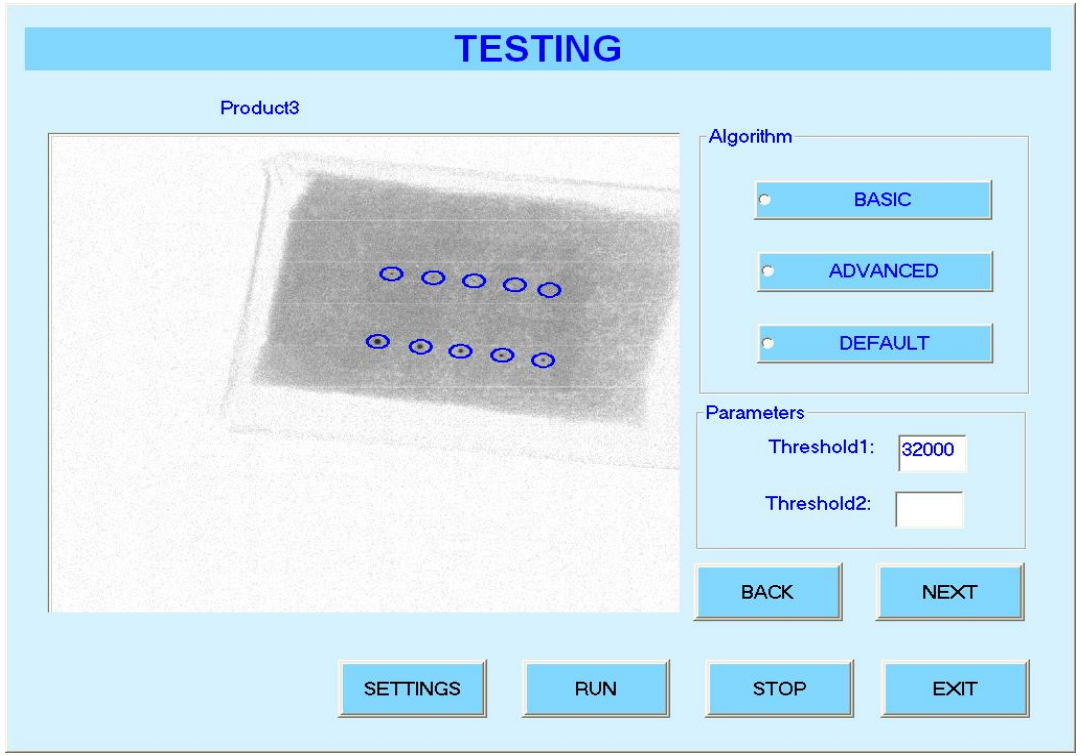
Food Inspection

Passing food packets through X-Ray machine

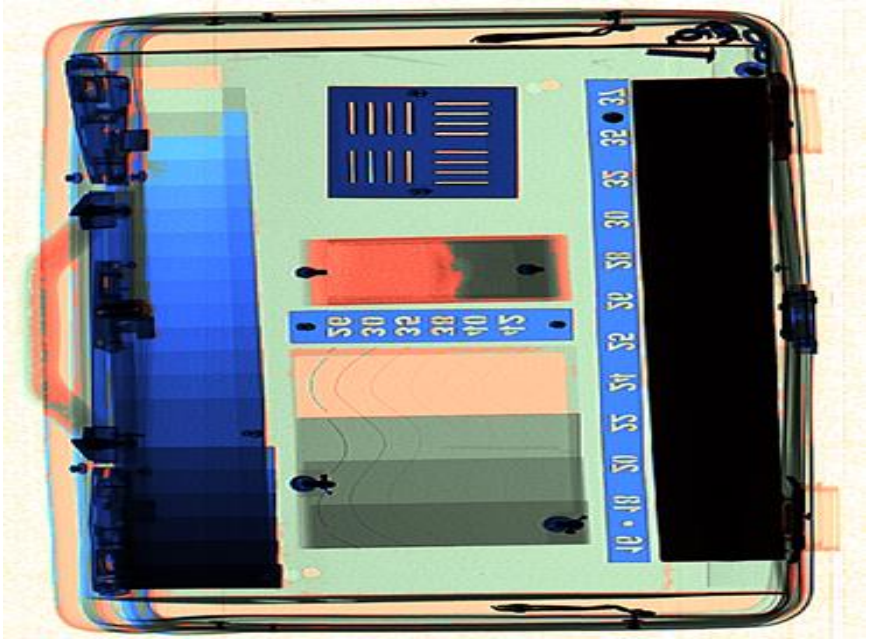


Defect detection up to size 0.8mm

X-Ray Based Inspection



Detection of metal contaminations in packed food packets.

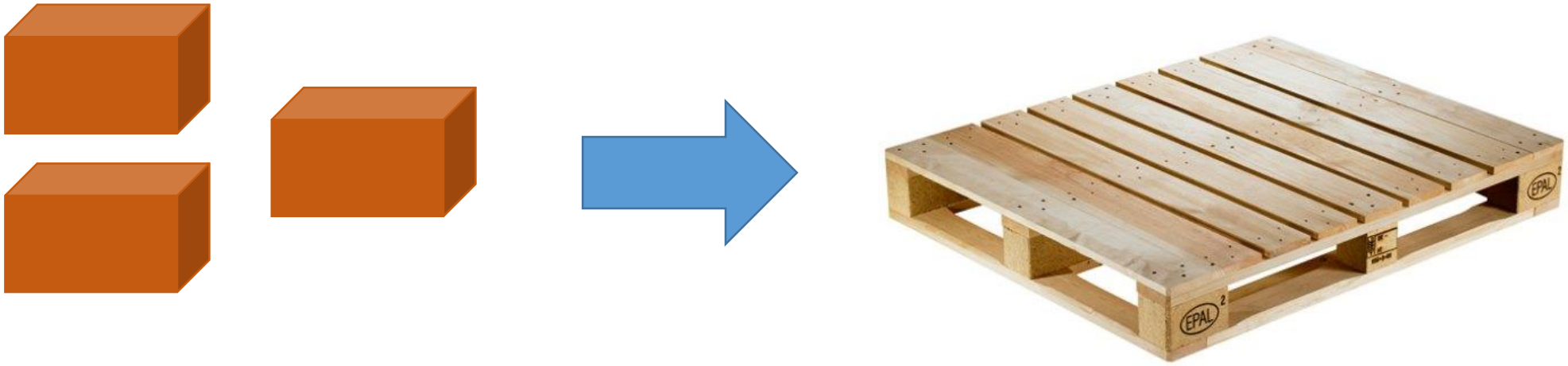


Determination of organic (Orange), inorganic (Green) and metals (Black) in a baggage.

Box Palletizing

Loading the boxes of different sizes on to a pallet or tray of fixed size

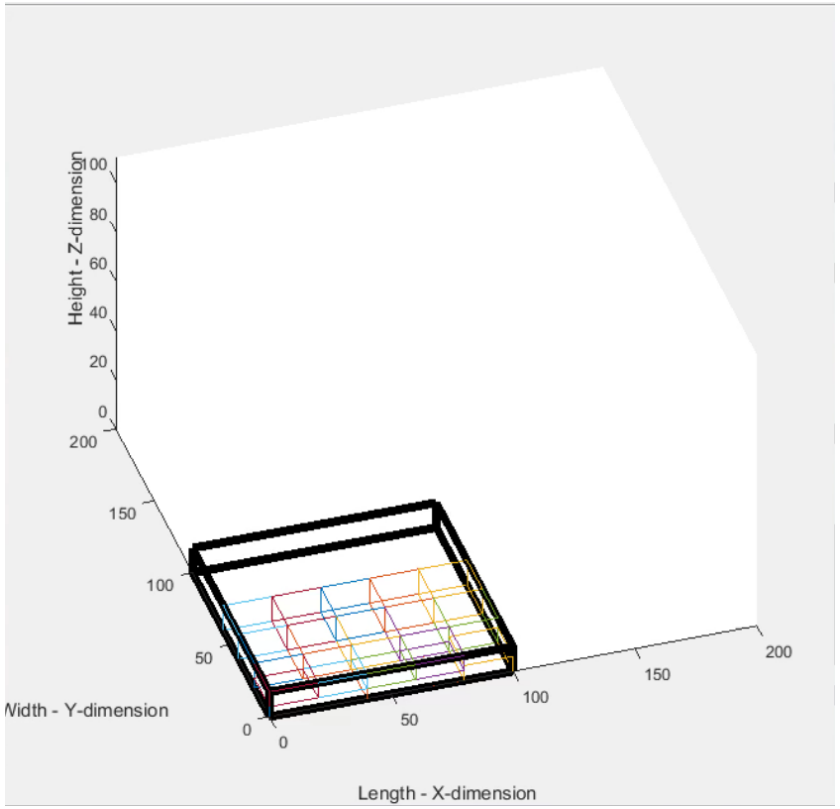
- Unused space should be small
- Optimized packing considering the constraints: height and weight of pallet



YouTube Link – https://youtu.be/EJaeGgunEqY

Box Palletizing

Output Display



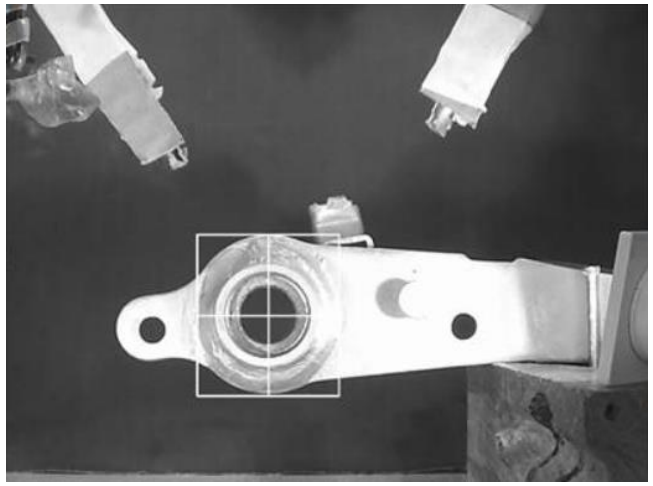
*** REPORT ***

ELAPSED TIME	: Almost 0 sec
TOTAL NUMBER OF ITERATIONS DONE	: 1
BEST SOLUTION FOUND AT ITERATION	: 1 OF VARIANT: 1
TOTAL NUMBER OF BOXES	: 17
PACKED NUMBER OF BOXES	: 17
TOTAL VOLUME OF ALL BOXES	: 58400
PALLET VOLUME	: 100000
BEST SOLUTION'S VOLUME UTILIZATION	: 58400 OUT OF 100000
PERCENTAGE OF PALLET VOLUME USED	: 58.400000 %
PERCENTAGE OF PACKED BOXES (VOLUME)	: 100.000000 %
WHILE PALLET ORIENTATION	: X=100; Y=100; Z= 10

NO:	PACKSTA	DIMEN-1	DMEN-2	DIMEN-3	COOR-X	COOR-Y	COOR-Z	PACKEDX	PACKEDY	PACKEDZ
1	1	40	20	4	0	0	0	40	20	4
2	1	40	20	4	40	0	0	40	20	4
3	1	20	20	6	80	0	0	20	20	6
4	1	20	20	6	60	0	4	20	20	6
5	1	20	20	6	40	0	4	20	20	6
6	1	20	20	6	20	0	4	20	20	6
7	1	20	20	6	0	0	4	20	20	6
8	1	20	20	10	0	20	0	20	20	10
9	1	20	20	10	20	20	0	20	20	10
10	1	20	20	10	40	20	0	20	20	10
11	1	20	20	10	60	20	0	20	20	10
12	1	20	20	10	80	20	0	20	20	10
13	1	20	20	10	0	40	0	20	20	10
14	1	20	20	10	20	40	0	20	20	10
15	1	20	20	10	40	40	0	20	20	10
16	1	20	20	10	60	40	0	20	20	10
17	1	20	20	10	80	40	0	20	20	10

Model Inspection for Metal Parts

Dimension detection for quality inspection



Detecting orientation of the text for catalytic converter

Detecting presence of all child parts and the welding quality for brake pedal

Glass Vial Inspection

To measure following parameters and defect following defect on-line for a glass Vial used in Pharmaceutical Applications.

<u>To Measure –</u>

- Body Diameter
- Total Height
- Height from base to shoulder
- Lip Height
- Neck Height
- Internal Diameter of mouth
- Outer Diameter of mouth

<u>Defect Detection –</u>

- Lip plus Neck Height
- Outer Diameter of thread (for Screw Vials)
- Thread Pitch (for Screw Vials)
- Cosmetic defects (Chips etc.)
- Foreign bodies inside the vial

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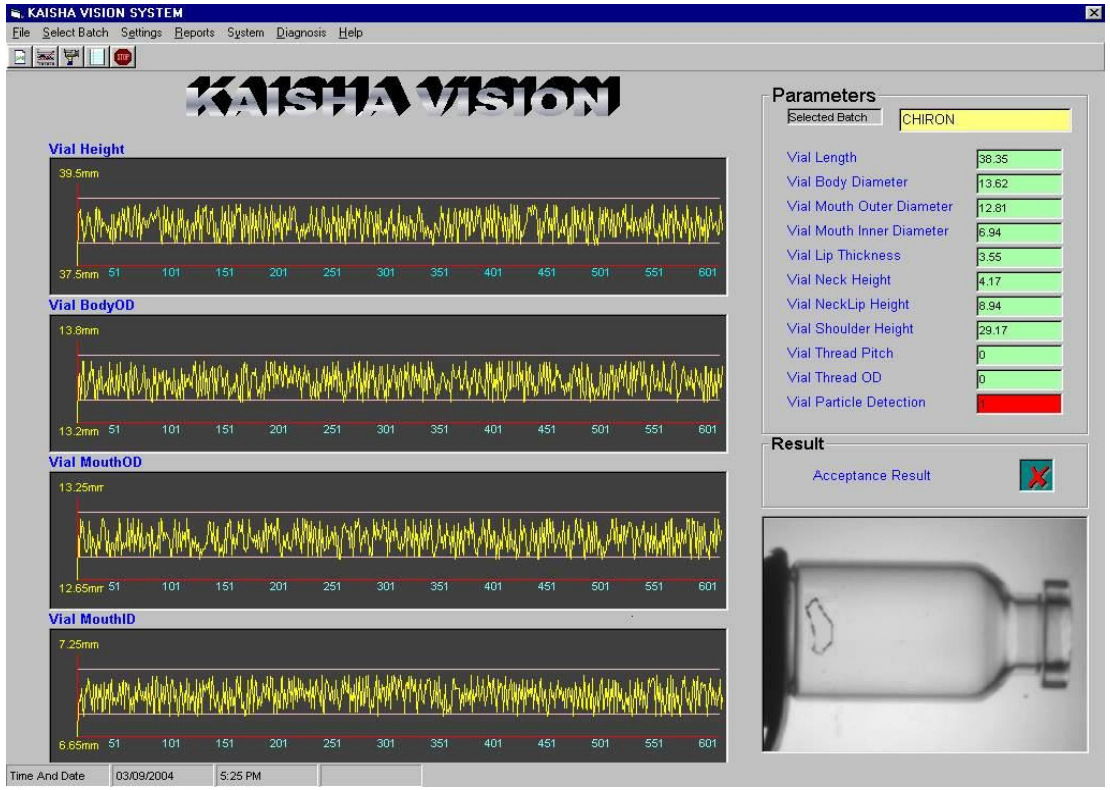
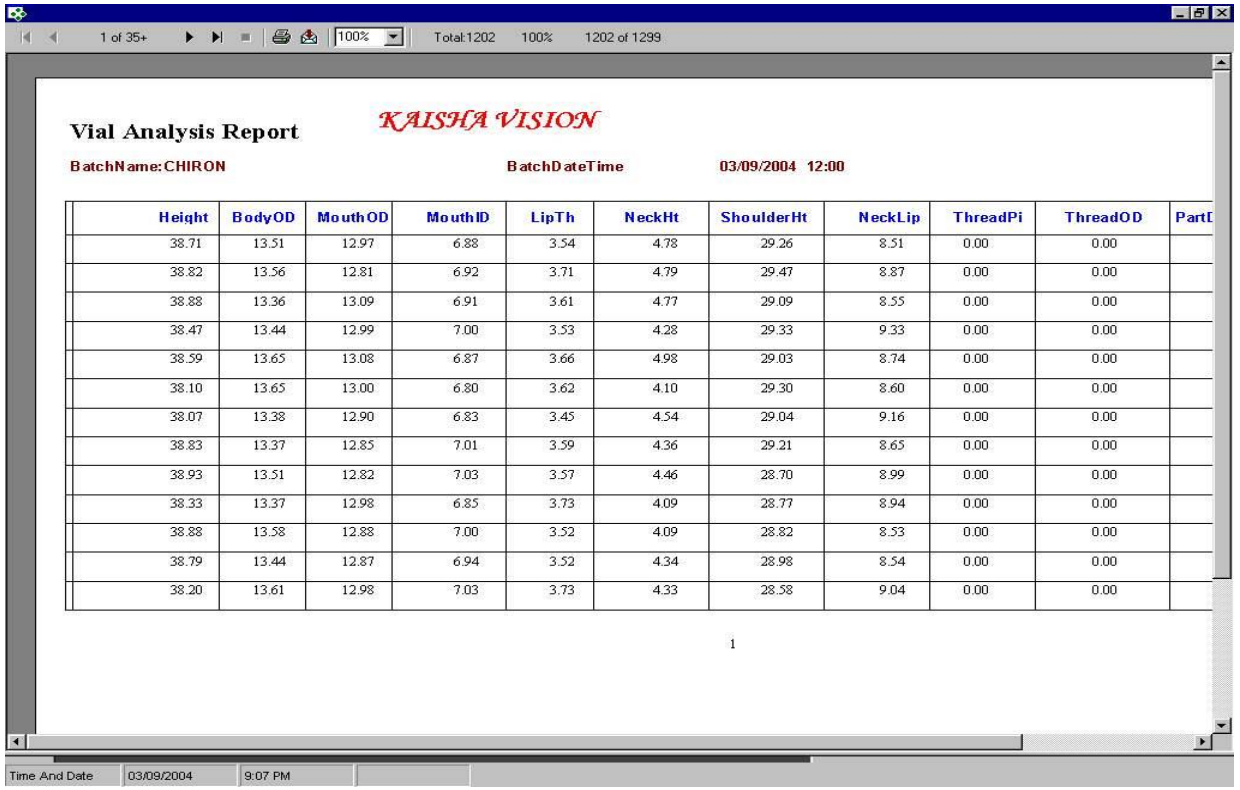
Glass Vial Inspection





Vial Analysis Report

KAISHA VISION

BatchName: CHIRON BatchDateTime 03/09/2004 12:00

Height	BodyOD	MouthOD	MouthID	LipTh	NeckHt	ShoulderHt	NeckLip	ThreadPi	ThreadOD	PartD
38.71	13.51	12.97	6.88	3.54	4.78	29.26	8.51	0.00	0.00	
38.82	13.56	12.81	6.92	3.71	4.79	29.47	8.87	0.00	0.00	
38.88	13.36	13.09	6.91	3.61	4.77	29.09	8.55	0.00	0.00	
38.47	13.44	12.99	7.00	3.53	4.28	29.33	9.33	0.00	0.00	
38.59	13.65	13.08	6.87	3.66	4.98	29.03	8.74	0.00	0.00	
38.10	13.65	13.00	6.80	3.62	4.10	29.30	8.60	0.00	0.00	
38.07	13.38	12.90	6.83	3.45	4.54	29.04	9.16	0.00	0.00	
38.83	13.37	12.85	7.01	3.59	4.36	29.21	8.65	0.00	0.00	
38.93	13.51	12.82	7.03	3.57	4.46	28.70	8.99	0.00	0.00	
38.33	13.37	12.98	6.85	3.73	4.09	28.77	8.94	0.00	0.00	
38.88	13.58	12.88	7.00	3.52	4.09	28.82	8.53	0.00	0.00	
38.79	13.44	12.87	6.94	3.52	4.34	28.98	8.54	0.00	0.00	
38.20	13.61	12.98	7.03	3.73	4.33	28.58	9.04	0.00	0.00	

1

Time And Date 03/09/2004 9:07 PM

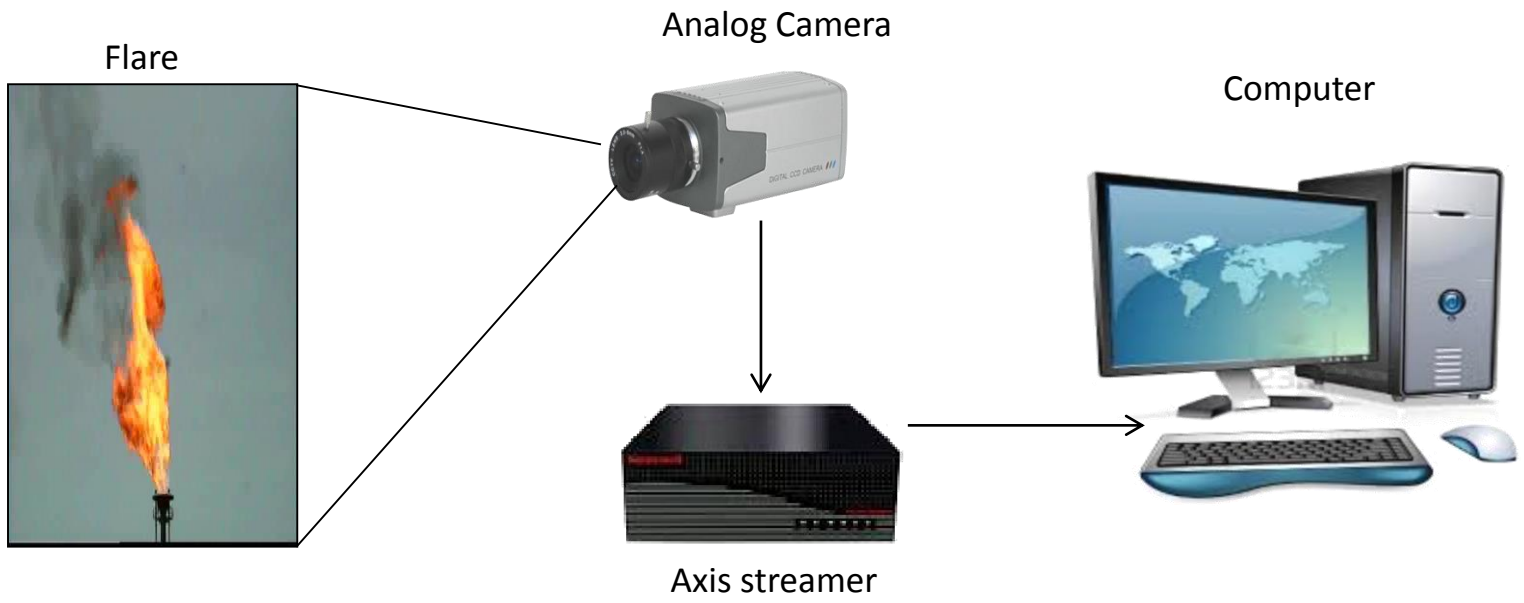
YouTube Link – https://youtu.be/MralA9zI3Oo

Flare Monitoring Software

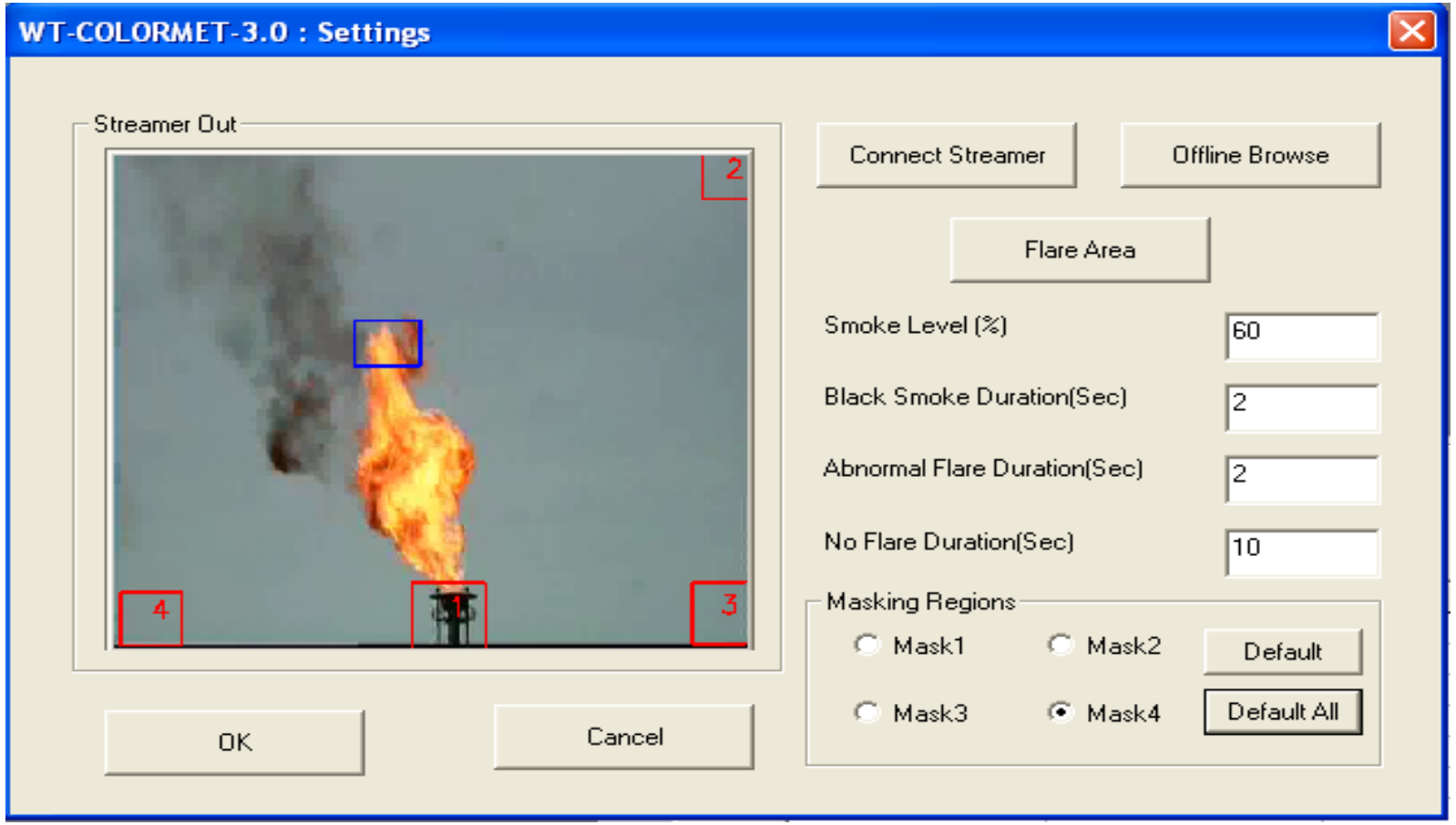
To develop a complete system for monitoring abnormal flares emitted from a refinery chimney.

Features:

- User can set parameters for detection of abnormal flare.
- Remote monitoring of flare through software.
- Real-time alerts.
- Capability to monitor flare area and graphical display of flare area.
- Detailed log of events along with time-stamp and image storage.



Flare Monitoring Software

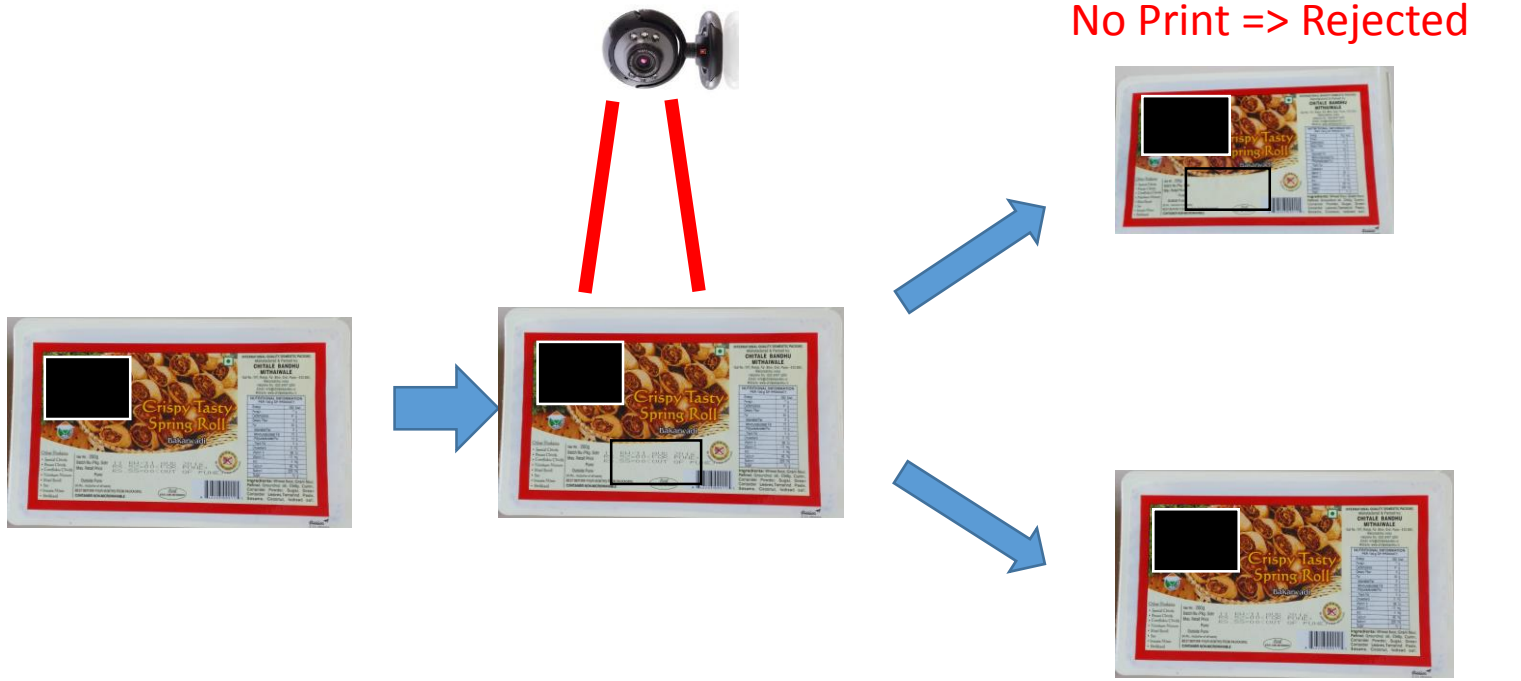


Food Packet Inspection

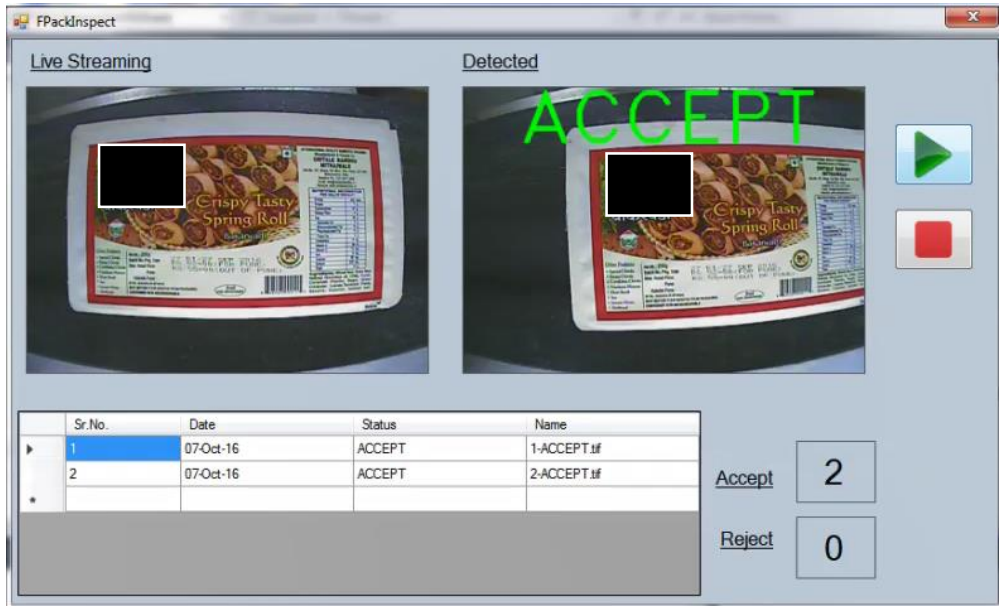
To verify printed details (manufacturing date, price etc.) on a food packet.

Features:

- Online checking of print
- Place of print to be checked can be variable
- Affordable and easy-to-use software



Food Packet Inspection



YouTube Link – https://youtu.be/0Dk5KJ4A9pU

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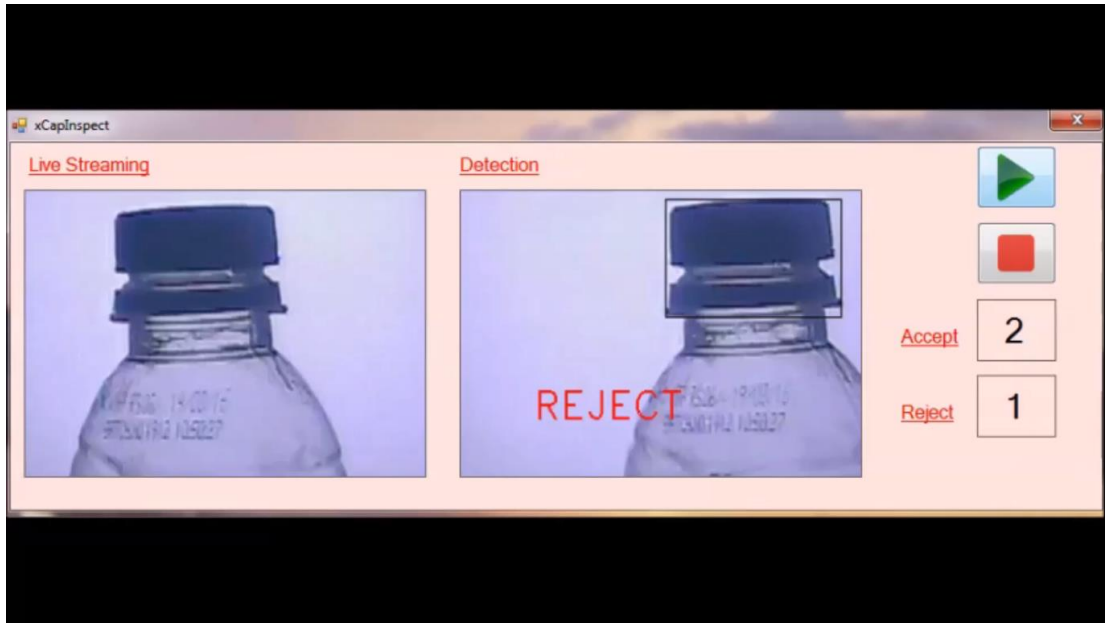
Bottle Cap Inspection

To verify the closure of bottle caps on line.



YouTube Link – https://youtu.be/AEA4qIBQIkU

Gino

A mobile application that counts the number of pipes loaded at any place

Image captured on camera

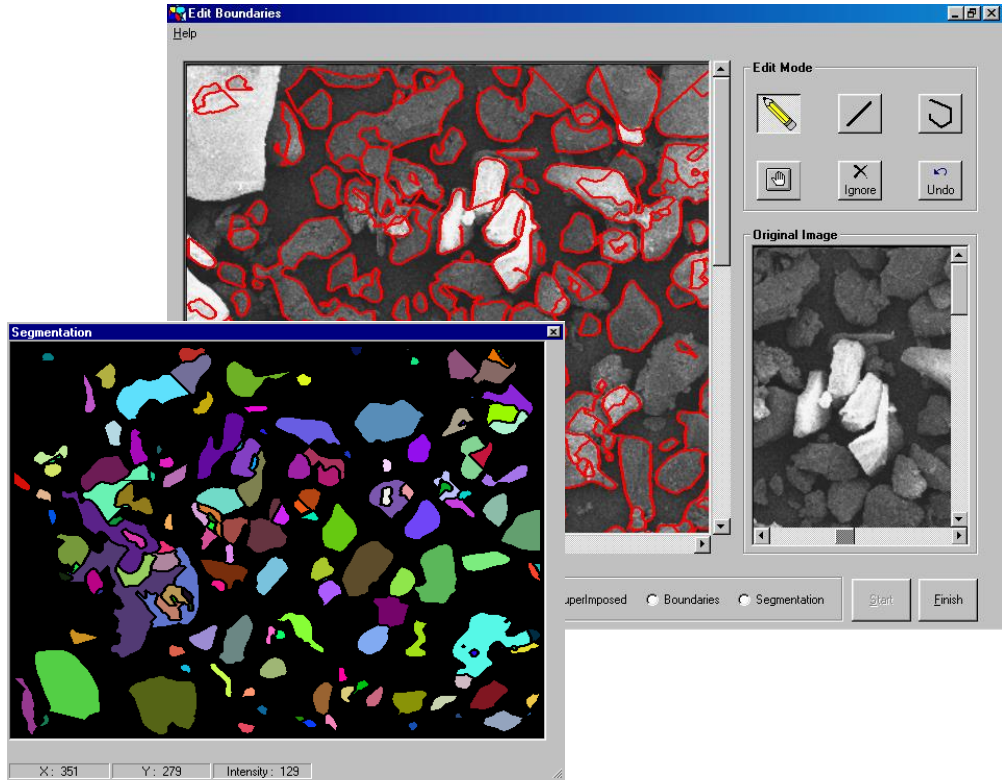
- Number of Pipes of Type 1 = 30
- Number of Pipes of Type 2 = 15

Fragment Image

To perform a quick size/shape analysis of fragments created by blasting operation.

Features:

- Analysis of the blast fragments – Image enhancement, Edge detection, Calibration and Geometric correction, Size and Shape Computation
- Networking option for creating fragment contours
- Generation of results in form of various Normal Distributions and Rosin-Rammler curve.
- Prediction of the blast design parameters and energy utilization.



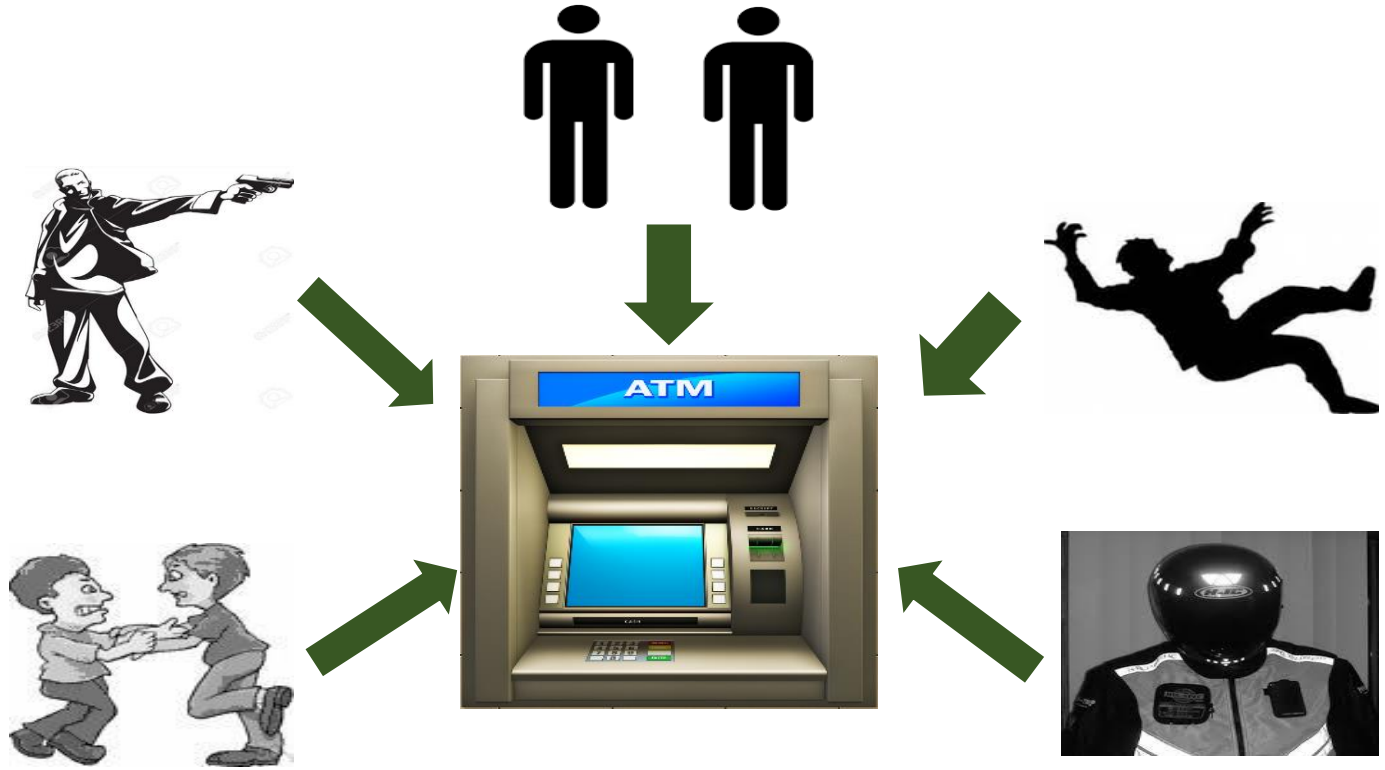
ATM Security System

On detection of suspicious event, Security System alerts ATM operator instantly instead of going through the video footage.

Features:

- Alerts on detection of multiple person, person fall, mask or scuffle.
- Easy to install and configure as per requirement.
- Remote Monitoring Capability
- Cost Effective Solution
- 24x7 Security

YouTube Link – https://youtu.be/TqX-7ltvkvk

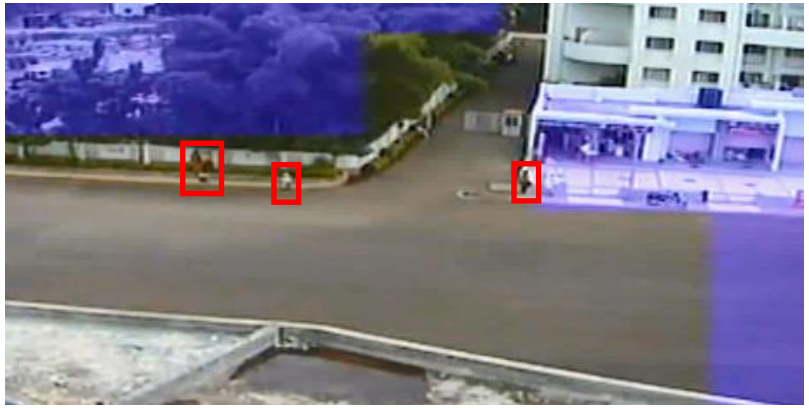


Object Tracking System

Camera tracks the target on Detection.

Features:

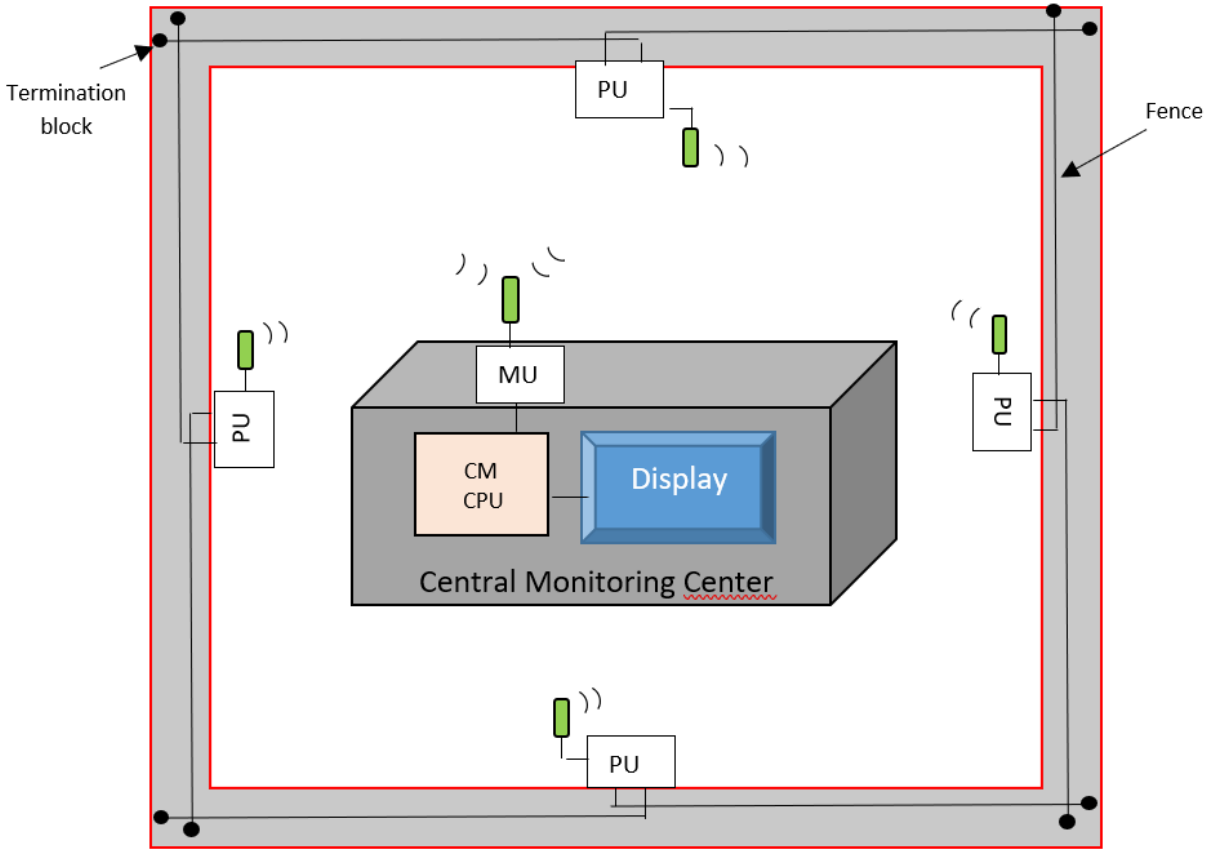
- Continuous Surveillance of the are under the scope of Camera
- Full Unmanned Pan and Tilt Control: PELCO-D Protocol
- Control Interface: Ethernet, IR Remote, Optional Joystick.



Area under surveillance

YouTube Link – https://youtu.be/vNVYg7n26p8

FenSe



- Outdoor Perimeter Security System
- Sensor cable is interfaced to a standalone Processor Unit (PU) laid near the fence for processing the disturbance signals received from the sensor cable and for generating alerts and sending the alerts wirelessly to the Central Monitor (CM) using Master Unit (MU) for display alerts and necessary action from security personnel

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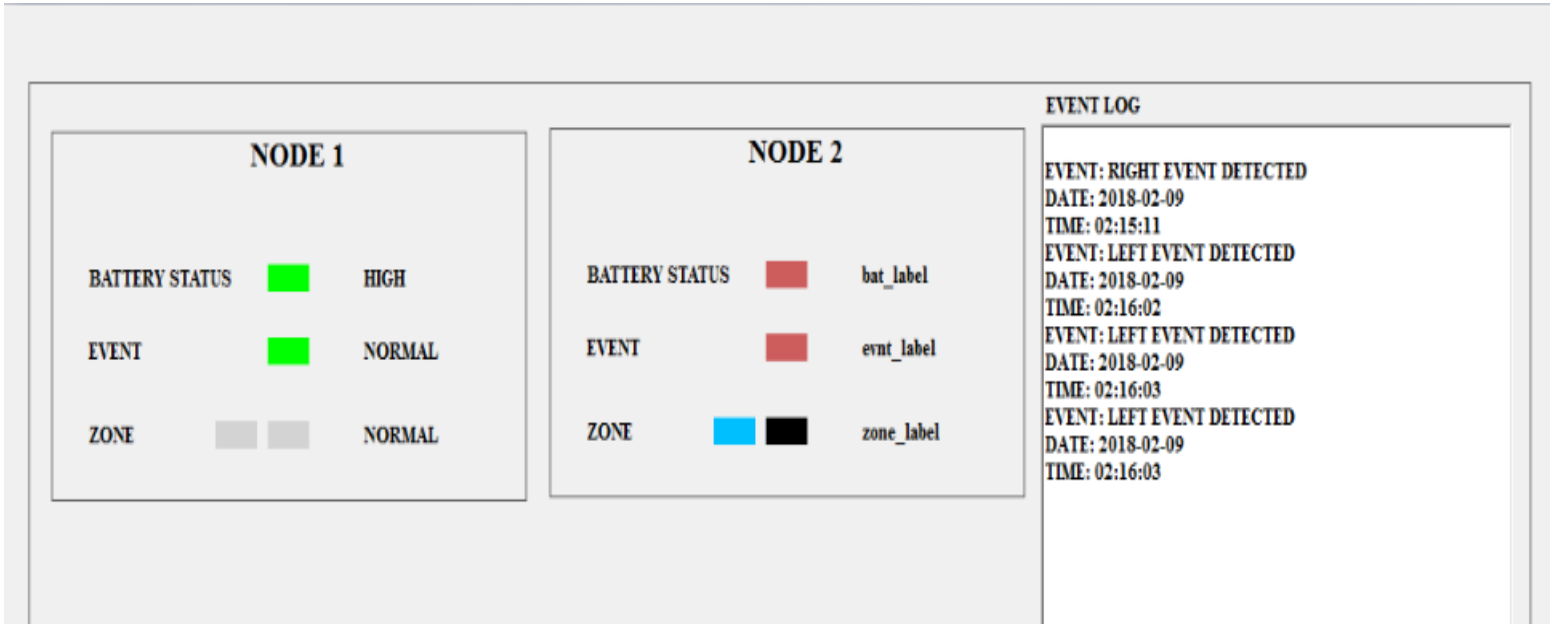
FenSe

Central Monitoring Software



Typical Applications:

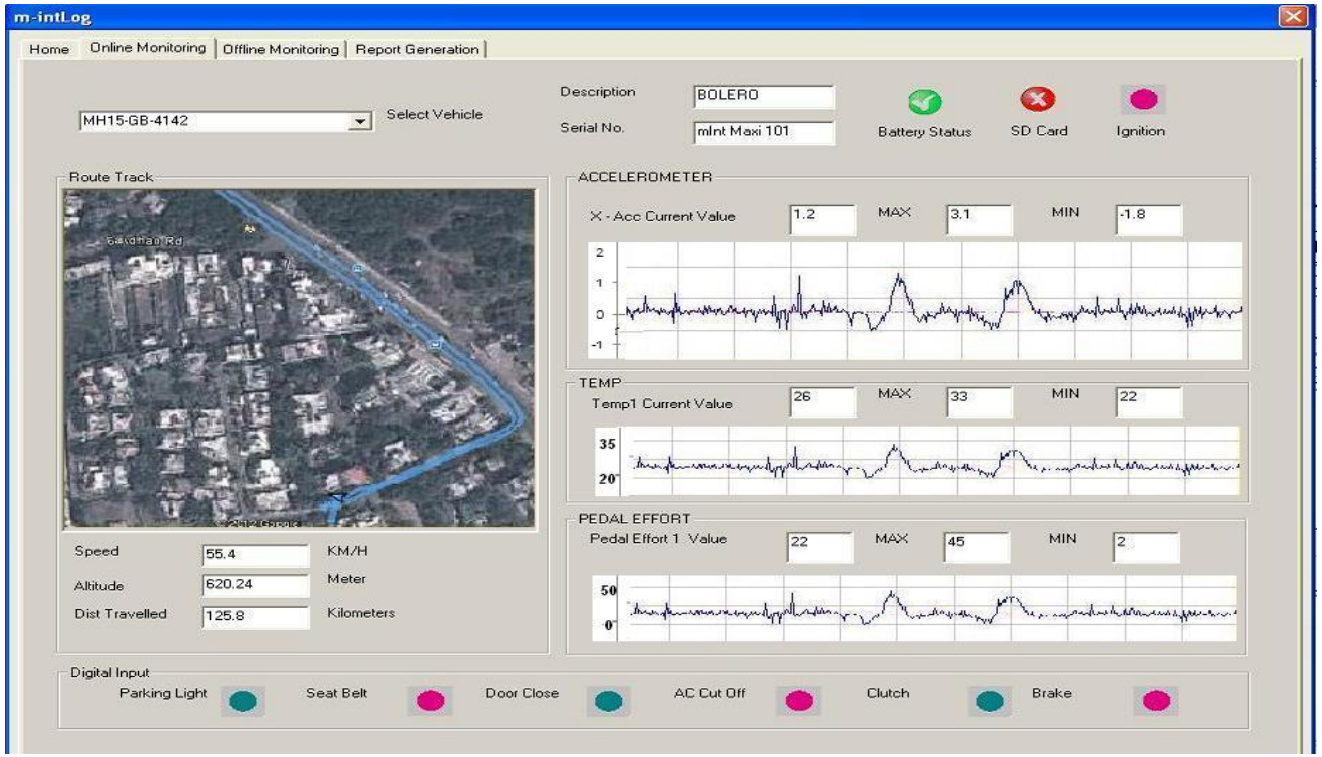
- Commercial and Industrial areas
- Government agencies and laboratories
- Military bases
- VIP residences
- Airports
- Gated Communities
- Data Centers
- Water, Electrical and Utility substations
- Radio, Cellular, Communication antennas
- Other fenced locations

Automotive Data Logger

Real time monitoring of different automotive parameters.

Features:

- Continuous data logging for 50 hrs.
- Data transmission on GPRS and onboard memory with time stamp.
- Data includes Vehicle speed, GPS based distance measurement, Acceleration & Deceleration, Temperature levels, Vibrations, Engine data such as Engine RPM,CAN data etc.
- PC connectivity through RS232 port
- Low power consumption less than 5W and protected for over voltage, current, Spikes, Noise, Reverse polarity connections



Automotive Data Logger

View Vehicle Detail							
AVLUnit Id	Latitude	Longitude	Date	Time	Speed (Km/hr)	Distance (Km)	Select
400398	1848.8753	7509.4583	11/06/2009	06:40:04 PM	51.300000	0.43	Plot on map
400398	1849.0013	7509.2552	11/06/2009	06:39:34 PM	51.700000	0.46	Plot on map
400398	1849.1375	7509.0326	11/06/2009	06:39:04 PM	58.000000	0.46	Plot on map
400398	1849.2949	7508.8267	11/06/2009	06:38:34 PM	58.700000	0.50	Plot on map
400398	1849.4655	7508.6033	11/06/2009	06:38:04 PM	60.500000	0.49	Plot on map
400398	1849.6300	7508.3882	11/06/2009	06:37:34 PM	52.100000	0.45	Plot on map
400398	1849.7822	7508.1922	11/06/2009	06:37:04 PM	55.300000	0.44	Plot on map
400398	1849.9327	7507.9977	11/06/2009	06:36:34 PM	58.300000	0.46	Plot on map
400398	1850.0786	7507.7885	11/06/2009	06:36:04 PM	53.700000	0.45	Plot on map
400398	1850.1899	7507.5641	11/06/2009	06:35:34 PM	55.300000	0.44	Plot on map
400398	1850.2898	7507.3339	11/06/2009	06:35:04 PM	48.600000	0.40	Plot on map
400398	1850.4174	7507.1481	11/06/2009	06:34:34 PM	50.800000	0.45	Plot on map
400398	1850.5687	7506.9486	11/06/2009	06:34:04 PM	53.600000	0.44	Plot on map
400398	1850.7708	7506.8131	11/06/2009	06:33:34 PM	52.800000	0.44	Plot on map
400398	1850.9754	7506.6832	11/06/2009	06:33:04 PM	54.800000	0.53	Plot on map
400398	1851.1985	7506.4951	11/06/2009	06:32:34 PM	47.300000	0.51	Plot on map

Combi-Lift Parking System

Designing of Control System for Automated multi-level Car Parking.

Features:

- Safety checks for door openings and undefined positions
- Continuous Error Monitoring
- Remote Accessibility

Software Development

Software Platforms:

- Visual Studio 2013
- .NET
- Xcode
- Qt

Testing Tools:

- UTILITY Framework
- PC-LINT
- SQUISH
- SIKULI
- AUTOIT
- WHITE
- SELENIUM

Language Expertise:

- PYTHON
- C/C++
- C#
- .NET
- VB Script
- QML

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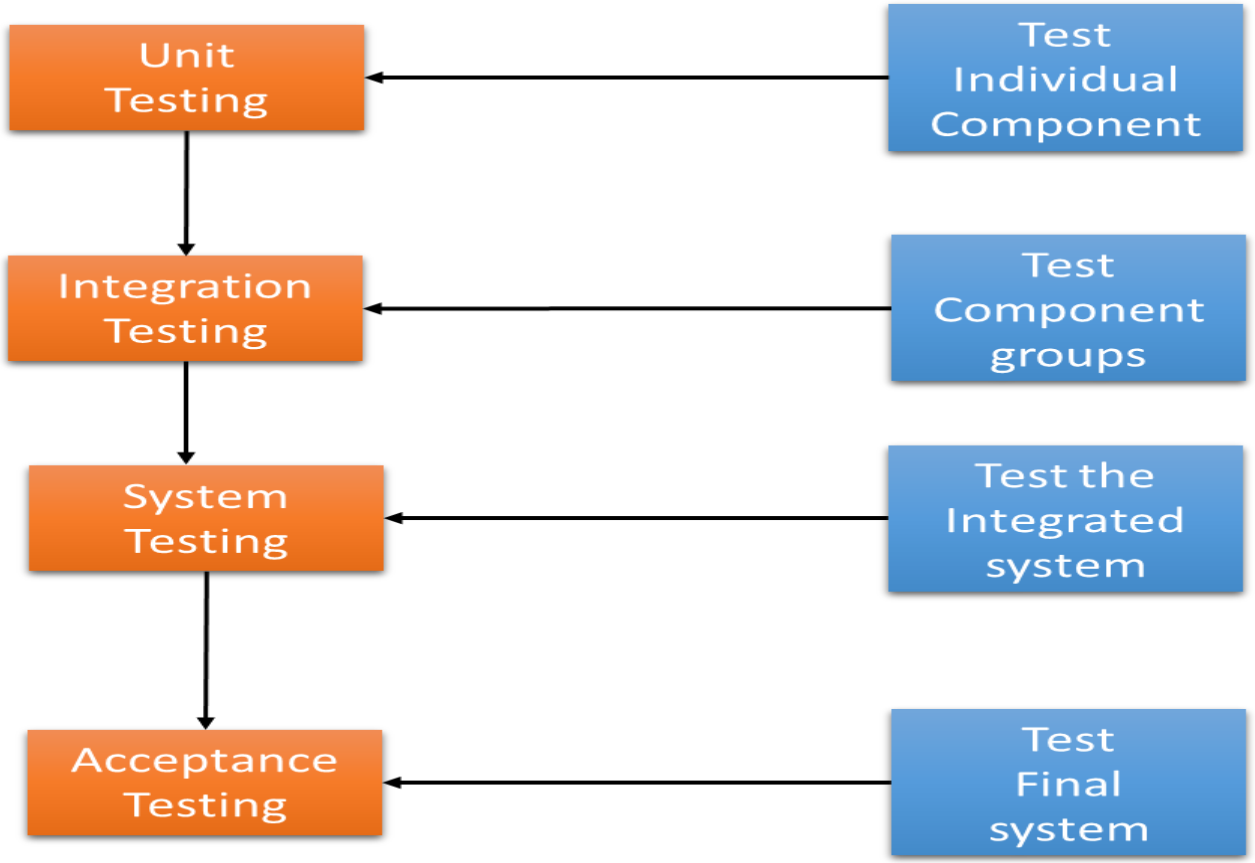
Software Testing

White Box

- Self testing: Part of coding phase
- Module-wise testing
- Unit test using unit testing tool

Black Box

- Integration testing
  - Negative testing
  - Boundary testing
  - Positive testing
- System testing



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