



**metricici**  
accurate recognition

**Get inspired**

**METRICI**  
**— CUSTOM INDUSTRIAL**  
**PROJECTS**  
**—**

**Case studies**

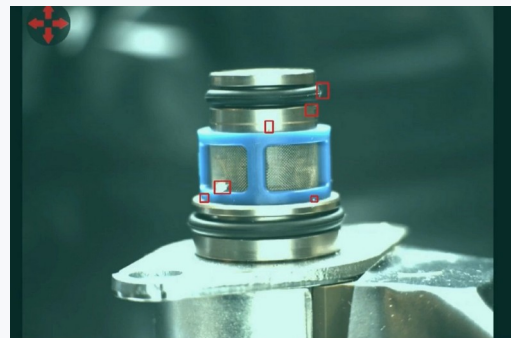
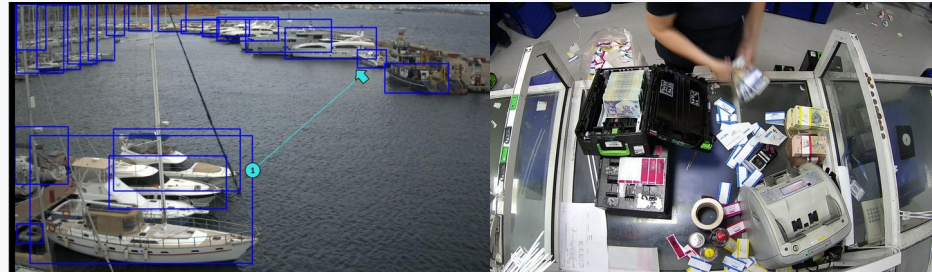
# CUSTOM PROJECTS

Metrici Custom projects starts from the fact that "Anything the **human eye can see** and distinguish, **Metrici can do it too**"

Based on Metrici capabilities to train the neuronal network so that it can **recognize any kind of object** in real time in a video stream

It began developing and implementing **custom projects** for clients that do not find any other resources to address their specific needs

Since custom software is developed for a single customer it can accommodate that customer's **particular expectations** which can not be satisfied by off-the-shelf software





# Services- Marinas management

Metrici is **watching the entrance and exits** in marinas

It is also **checking the docks**

Is **tracking the boats** that are **crossing** a virtual gate

An **event is recorded** with timestamp, direction, photo and other data

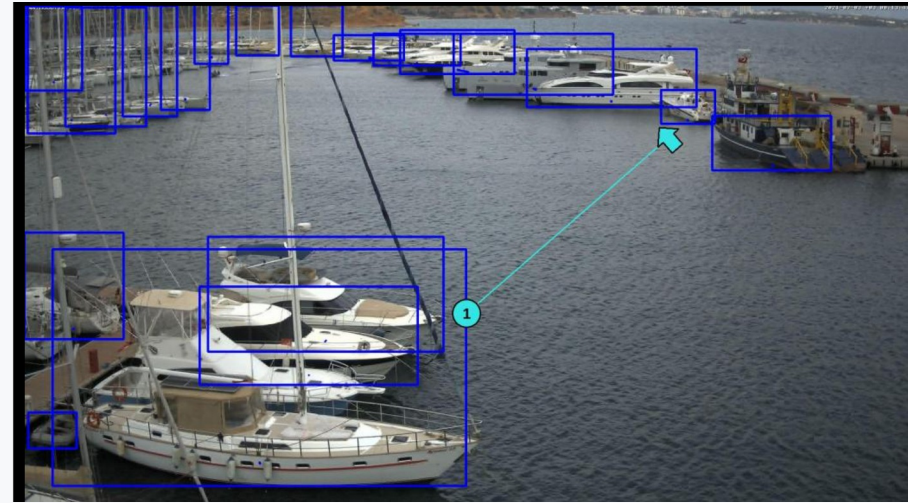
Each **boat is classified** according to its class, out **8 types**

It knows **how many boats** are inside the marina and what is the flow - **in and out count**

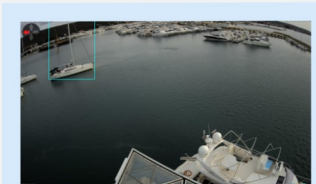
A secondary camera is used for Metrici to **read the name of the boat**

In some locations, Metrici **measures the length** of the boat using special developed algorithm based on GPS reading

Also, a **PPD engine** is used to monitor some docking spots to see availability



Direction	Gate	Ship Type	Length	Registered at	Location	Camera	
LEAVING	1	Catamaran	-	2022-11-17 12:15:03	D' Marin	Gocek Entrance1	
LEAVING	1	other	-	2022-11-17 12:08:06	D' Marin	Gocek Entrance1	
LEAVING	1	other	-	2022-11-17 12:01:07	D' Marin	Zea entrance	
COMING	1	Motor-yacht	-	2022-11-17 11:38:54	D' Marin	Zea entrance	
LEAVING	1	Motor-yacht	-	2022-11-17 11:25:52	D' Marin	Zea entrance	
rt	LEAVING	1	Motor-yacht	-	2022-11-17 11:24:46	D' Marin	Turgutreis entrance
LEAVING	1	Catamaran	-	2022-11-17 11:15:13	D' Marin	Gocek Entrance1	
LEAVING	1	Catamaran	-	2022-11-17 11:13:25	D' Marin	Gocek Entrance1	
LEAVING	1	Motor-yacht	7.44	2022-11-17 10:55:22	D' Marin	Tribunj entrance	
rt	COMING	1	Sailboat	16.18	2022-11-17 10:51:29	D' Marin	Dalmacija entrance
rt	LEAVING	1	Sailboat	24.88	2022-11-17 10:50:35	D' Marin	Dalmacija entrance
rt	COMING	1	Motor-yacht	-	2022-11-17 10:49:50	D' Marin	Turgutreis entrance
1	LEAVING	1	Motor-yacht	7.86	2022-11-17 10:49:34	D' Marin	Tribunj entrance
1	COMING	1	Catamaran	-	2022-11-17 10:48:15	D' Marin	Lefkas Entrance2
1	LEAVING	1	Catamaran	-	2022-11-17 10:47:28	D' Marin	Lefkas entrance3
1	COMING	1	Motor-yacht	-	2022-11-17 10:47:10	D' Marin	Lefkas Entrance2



Events For marinas 64-7

Today (12) This Week (111)

This Month (273)

Options for For marinas 64-7

EXPORT PDF

# Services-Bank Industry

- Human operators fill some money cassettes for ATMs
- Metrici **identifies the lids**, it **checks for labels**, **identifies them** to know **what kind of denomination** should be filled in that cassette
- **Tracks** what kind of **money are on the table** and what the operator is **loading inside** the cassette
- Metrici can **identify all Euro and Romanian banknotes**
- It **verifies** each load to make sure the operator fuels the cassettes with the right denomination
- In case of **mismatch**: the operator is loading a wrong banknote, an **alarm** is triggered
- **Video** (red light) and a strong **audio** signal **flag** the fact an **error was made**
- It also checks when the **lid is closed** and another operation begins





# Production- bottle packaging

## Dedicated AI training

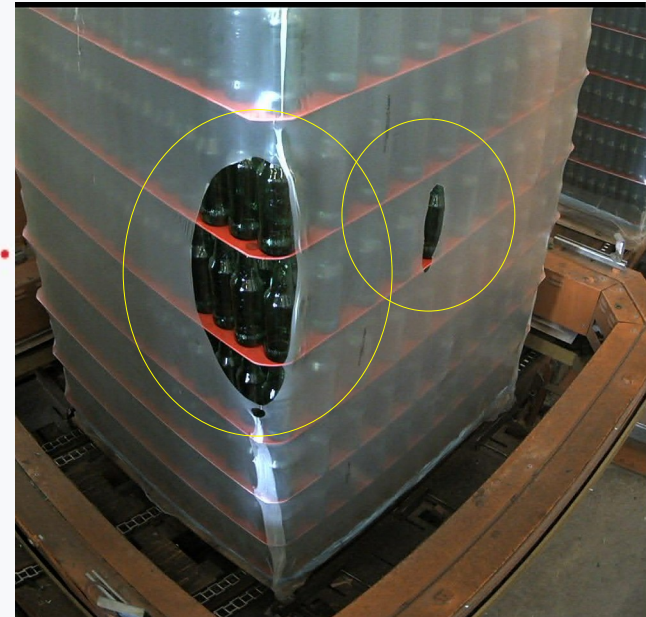
Metrici **detects and checks the bottle palettes** in a **glass factory**

It is looking at the **each row and corners** of the palettes

It verifies that each row **has all the bottles** and **none is missing**

After the palette is foiled up it also checks the foil to be in **one piece** and has **no cuts**

An **alarm** is triggered when a defect is seen - **bottles are missing or the foil is cut**



# Shipping - Industrial Port- Container Code Recognition

Access area monitoring in a **port shipping hub**

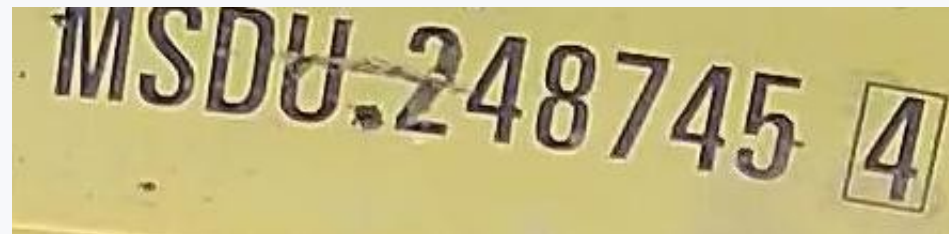
Metrici **checks all the trucks** entering/ exiting the area

When a vehicles **is detected** a **LPR reading** is triggered

This **trigger another** detection for **Container Code Recognition**

Metrici **seeks for the code**, it **reads it** and the two data are matched and saved in database

If **code is missing or not visible**, only LPR reading will be saved in database



# Food Industry - Bakery

## Dedicated AI training

Metrici checks a **conveyor belt line** along of which human operators make different **bakery products**

Metrici checks **what kind** of product out of **24 classes**

Using, **Line Counter engine** it also **checks how many** products **each operator** makes in a shift

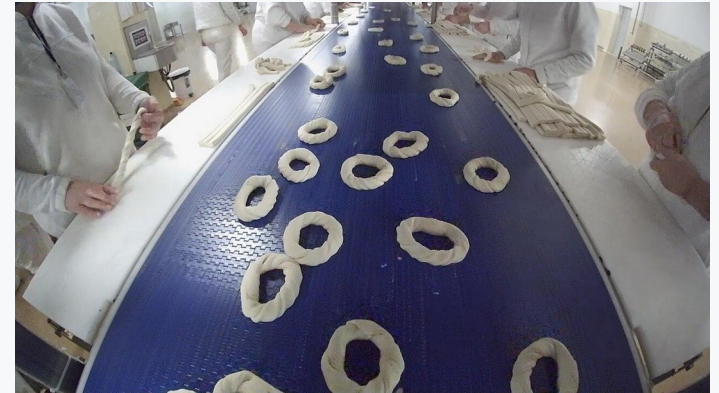
**Report the total of products for each shift as well as pieces made by each worker**

In a **second installment**, cameras in selling points are used to coordinate production with sales

Metrici monitors the selling windows and number of **sales for each product and quantity remained**

**When product is approaching out of stock, an alarm is sent to headquarters to deliver product**

**Monitoring of pedestrian traffic** around the stores to see **conversion rate** of passers-by into buyers





# Production line - auto industry

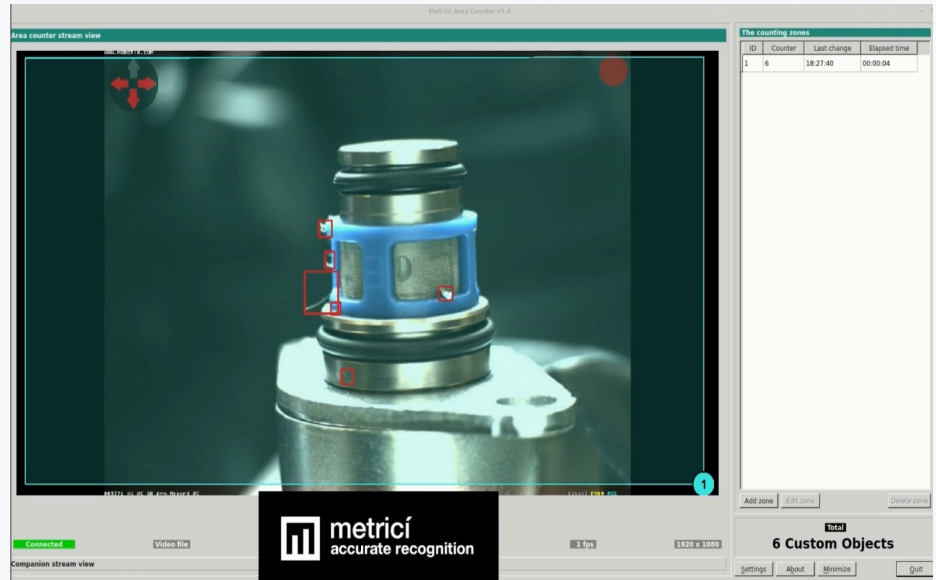
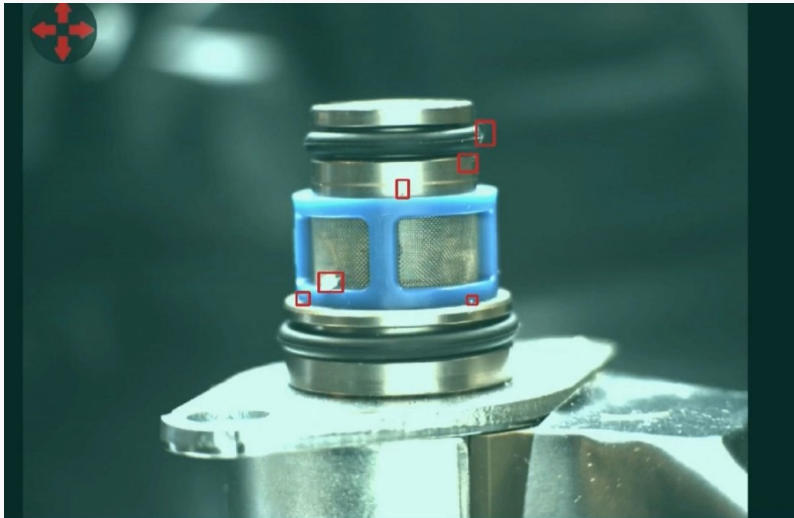
Dedicated AI training

**Production line** in auto industry

**Fuel filters production** monitoring

Metrici **checks for defects** of the products

An **alarm is triggered** when one or more are detected





# Services- Waste disposal

## Garbage trucks company monitoring

Metrici permanently checks what **kind of garbage** is loaded into trucks out of **three classes**

Metrici Line Counter is used to **count and record** events (**each garbage load**) as they are happening

A **GPS** is also used as **each event** is stored in database along the **exact location**

For example, two bags were loaded at this exact location with these coordinates

The operator wants to know **where and what quantity** of garbage was loaded to properly invoice clients

Also, it checks to see if the operators **are not loading prohibited** or a **bigger quantity** than permitted



# Services & Construction & Maintenance

## - Safety Equipment

Hard working environment monitoring - construction sites, production lines, heavy machines operators

Metrici **distinguish** between **helmets**, **harness** and **safety vests**

Metrici **Area Counter** and **people detection** capabilities are used

Metrici **checks for humans** in the area. It verifies that each one has **helmet**, **harness** or **vest**

In the Metrici interface, one can set **when to trigger an alarm**: **no vest**, **no helmet**, **no harness** or **any combination of those**

The top screenshot shows a worker in a blue uniform, white helmet, and yellow safety vest. A green bounding box is drawn around the worker. The 'The counting zones' table is empty.

ID	Counter	Last change	Elapsed time
2	0	10:55:20	00:00:00

The bottom screenshot shows a worker in a blue uniform and white mask, but without a helmet or safety vest. A red bounding box is drawn around the worker. The 'The counting zones' table shows one entry.

ID	Counter	Last change	Elapsed time
2	1	09:40:04	00:02:05

The status bar at the bottom of the interface shows 'Connected', 'AXIS MJPEG HTTP', 'metrici', '2592 x 1944', and 'Total 1 Unequipped'.



# Production - Textile industry

**Textile industry production line monitoring using Area Counter**

**Fabric roles** production

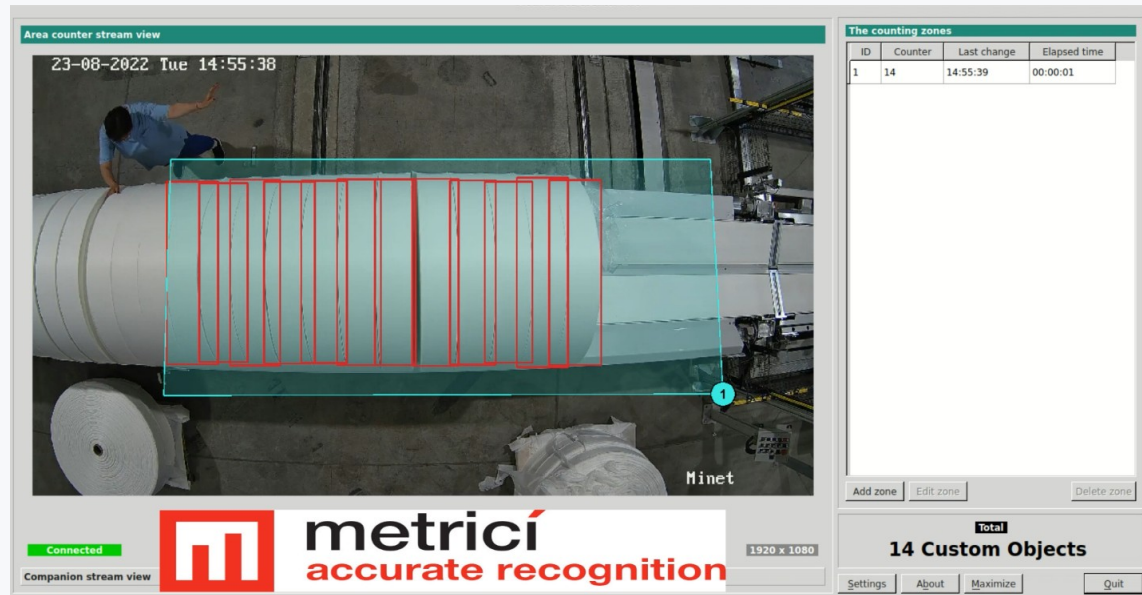
Metrici **identifies** roles

It **counts** how many fabric roles are on the production line at any given time

**Productivity rate** measurement

**Production speed** measurement

**Reports** hourly/daily/monthly pieces



The screenshot displays the Metrici software interface for textile production monitoring. The main window shows a live video stream titled "Area counter stream view" with a timestamp of "23-08-2022 Tue 14:55:38". A person is visible in the background working with a large roll of white fabric. A red rectangular counting zone is overlaid on the fabric roll, with a blue circle containing the number "1" in the bottom right corner. The interface includes a "Companion stream view" button, a "Connected" status indicator, and the Metrici logo with the tagline "accurate recognition". The resolution is shown as "1920 x 1080".

**The counting zones**

ID	Counter	Last change	Elapsed time
1	14	14:55:39	00:00:01

**Total**  
14 Custom Objects

Buttons: Add zone, Edit zone, Delete zone, Settings, About, Maximize, Quit

# Production - Automotive industry

**Car seats production** company

Metrici **watches the production** line using **Area Counter**

**Special AI training**

It identifies what **kind of mold** is on the production line out of **over 35 classes**

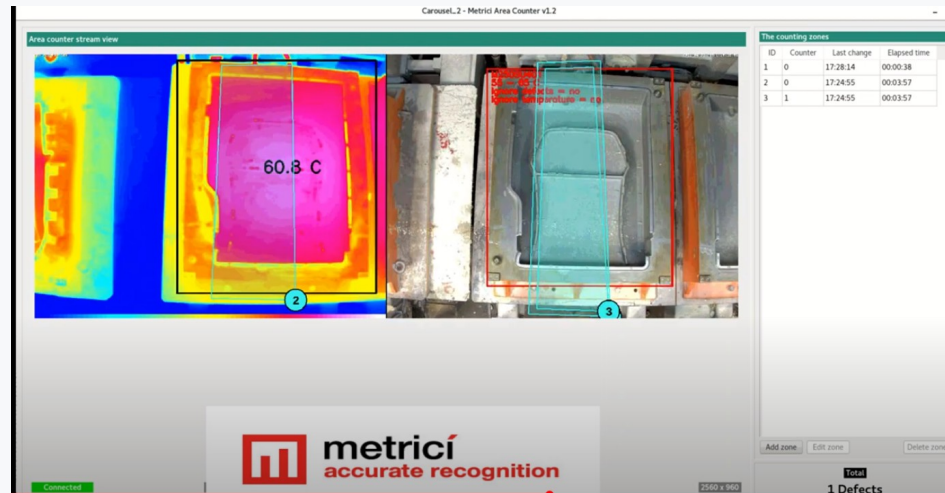
Secondly, it **checks for defects: presence or not** of special **magnets and wires** inside the mold - placed by human operators

Thirdly, it **triggers another detection** on a **thermal camera**

Metrici **measures the temperature**

It verifies that temperature is **good according to the class** of the mold

If anything wrong: temperature **outside the range** or **wires missing**, an **alarm** is triggered and production is stopped



Metrici **instructs the robotic arm to not pour** the foam into the mold - as a defect would result

Result: **reduce number of defects which were** due to human errors



# Production - Automotive industry

## Car detailing and interior parts automotive industry

Metrici checks the production line with Area Counter

### Dedicated AI training

It identifies what **kind of piece** is on the conveyor belt out of **over 20 different classes**

**Counts** how many there are in any given time

In a **second detection area**, it checks on **what kind of shelf** they are - **other 20 classes**

Does an **OCR reading** to verify the shelf is the **“pair” one** with the pieces and not from another type of piece

If anything **wrong** an **alarm is triggered** and the robotic arm gets a **command to not paint** the pieces

Access to **number of pieces** per day, **production quantity and quality check**

The screenshot displays the Metrici software interface, which is used for monitoring and controlling the production line. It features two main detection areas, each with a live video feed and a corresponding data table.

**Top Detection Area:** Shows a conveyor belt with pieces. The software identifies pieces with yellow bounding boxes and labels them as 'Label: MKO\_DCT\_1A' and 'Label: MKO\_DCT\_1B'. The table on the right shows the following data:

ID	Counter	Last change	Elapsed time
1	0	13:56:04	00:54:10
2	0	14:50:13	00:00:01

**Bottom Detection Area:** Shows a robotic arm with shelves. The software identifies shelves with green bounding boxes and labels them as 'Label: MKO\_DCT\_1A' and 'Label: MKO\_DCT\_1B'. The table on the right shows the following data:

ID	Counter	Last change	Elapsed time
1	0	18:25:27	00:01:40
2	24	18:26:24	00:00:42

The interface also includes a logo, the text 'metrici accurate recognition', and a counter showing '24 Pieces'.

# Production - Chemical industry

Dedicated AI training

Metrici is watching a **cable car line using three different solutions**

1. A detection engine is analyzing the images in **search for bearings**

When bearings are detected **another engine** is triggered to **measure their temperature** using a thermal camera

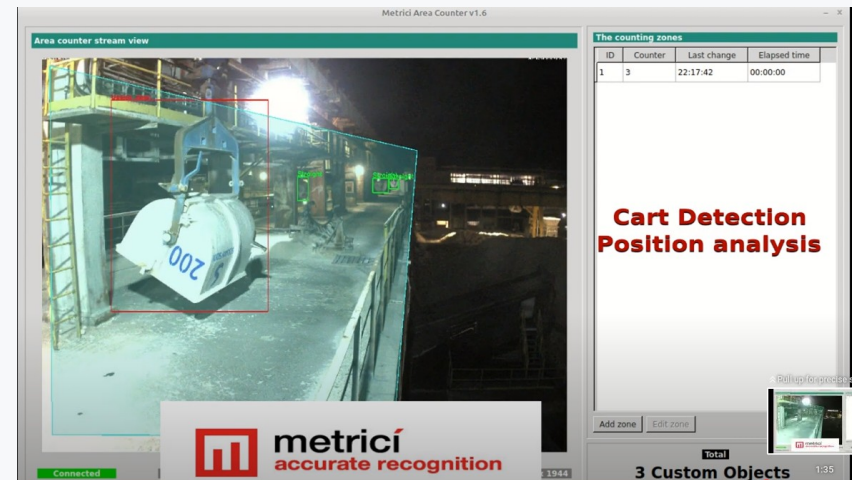
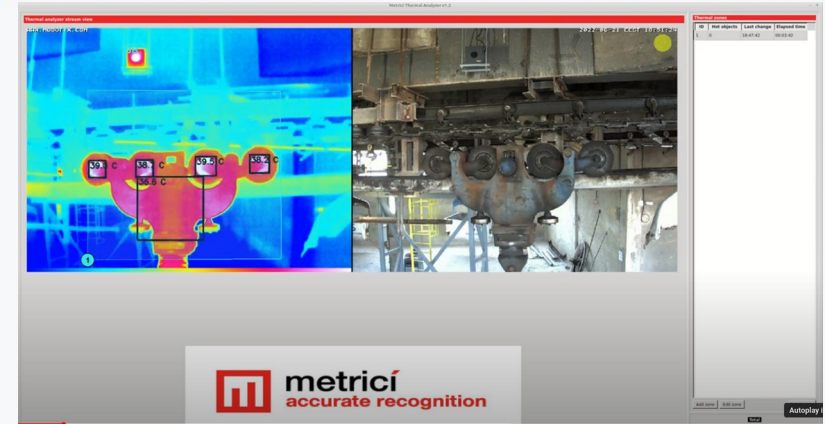
If **overheat** is detected, an **alarm** is triggered

2. In another point of the funicular, Metrici is **looking for the transportation carts**

It **verifies the position** of each one

If **upside-down** after a certain point, an **alarm** is triggered to stop the line

3. Another engine does an **OCR** on the cart to register its **identification number**





# Services -Amusement parks

## Metrici Area Counter and People detection

### Amusement ride equipment

Metrici detects the seats and each seats line has a detection area attached

Each time the ride is activated, Metrici begins detection

Metrici checks how many people are using the amusement ride

Reports and statistics on how many people for each ride/ daily/monthly etc

Comparison between tickets sold and actual number of people

The screenshot displays the Metrici software interface. On the left is a navigation menu with options like 'Area Counter', 'Parou general', 'Numar evenimente', 'Flux obiecte', 'Live', 'Raportare', 'Alarme', 'Setari', and 'Setari generale'. The main area features a table with columns: Zona, Contor, Obiecte, Data schimbării, Timp, Locație, and Camera. The table lists multiple rows of data for 'Orasul copilor' at 'Extreme cyclon'. Below the table is a pagination bar showing '421 evenimente area counter' and a page number '7'. On the right, there are camera feeds showing the ride's interior with yellow seats. Below the feeds are statistics: 'Evenimente pentru area counter 1,4', 'Astazi (0)', 'Saptamana aceasta (30)', 'Luna aceasta (392)', and 'Optiuni pentru area counter 1,4'.

Zona	Contor	Obiecte	Data schimbării	Timp	Locație	Camera
1-1	0	People	2023-01-08	16:03:33	Orasul copilor	Extreme cyclon
1-4	0	People	2023-01-08	16:03:33	Orasul copilor	Extreme cyclon
1-2	2	People	2023-01-08	16:03:33	Orasul copilor	Extreme cyclon
1-3	0	People	2023-01-08	16:03:33	Orasul copilor	Extreme cyclon
1-2	0	People	2023-01-08	14:52:26	Orasul copilor	Extreme cyclon
1-3	0	People	2023-01-08	14:52:26	Orasul copilor	Extreme cyclon
1-1	0	People	2023-01-08	14:52:26	Orasul copilor	Extreme cyclon
1-4	0	People	2023-01-08	14:52:26	Orasul copilor	Extreme cyclon
1-1	0	People	2023-01-08	14:52:22	Orasul copilor	Extreme cyclon
1-4	3	People	2023-01-08	14:52:22	Orasul copilor	Extreme cyclon
1-2	0	People	2023-01-08	14:52:22	Orasul copilor	Extreme cyclon
1-3	0	People	2023-01-08	14:52:22	Orasul copilor	Extreme cyclon
1-2	0	People	2023-01-08	14:21:05	Orasul copilor	Extreme cyclon
1-3	0	People	2023-01-08	14:21:05	Orasul copilor	Extreme cyclon
1-1	0	People	2023-01-08	14:21:05	Orasul copilor	Extreme cyclon
1-4	0	People	2023-01-08	14:21:05	Orasul copilor	Extreme cyclon
1-1	2	People	2023-01-08	14:21:01	Orasul copilor	Extreme cyclon

This screenshot shows a similar view to the one above, but with a different set of camera feeds. The table and navigation elements are consistent. The camera feeds show a different angle of the ride's interior. The statistics on the right are: 'Evenimente pentru area counter 1,1', 'Astazi (0)', 'Saptamana aceasta (31)', 'Luna aceasta (390)', and 'Optiuni pentru area counter 1,1'.

# Services -Amusement parks

## Metrici Area Counter and People detection

## Ferris wheel installment

Metrici is actively **searching for the capsules** of the Ferris wheel and **detects them**

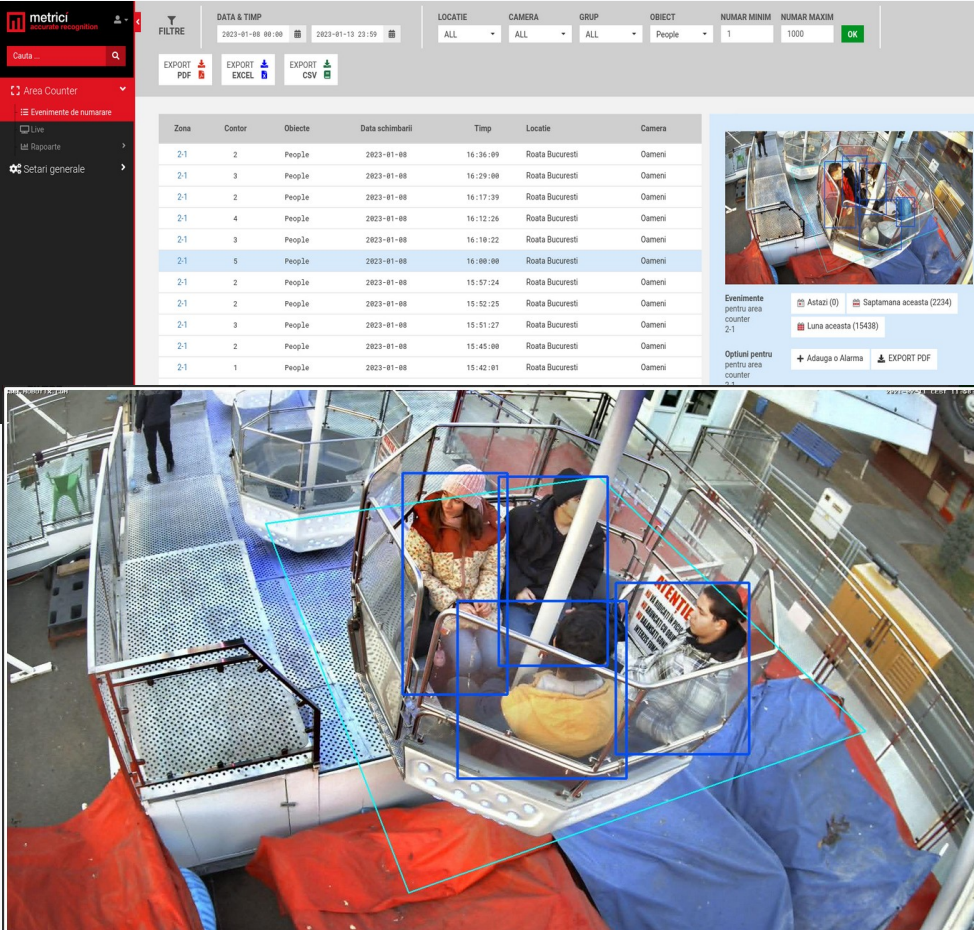
For each capsule, it **detects and records** and **how many people are in**

It **ignores people outside** the capsules

Reports on number of clients for each turn

Number of people per capsule and total

Statistics and income comparison between number of clients and tickets sold



The screenshot displays the Metrici software interface. On the left is a dark sidebar with navigation options: 'Căutare', 'Area Counter', 'Evenimente de numărare', 'Live', 'Raportare', and 'Setări generale'. The main area features a table with columns: Zona, Contor, Obiecte, Data schimbării, Timp, Locație, and Camera. Below the table are filters for 'DATA & TIMP', 'LOCATIE', 'CAMERA', 'GRUP', 'OBIECT', 'NUMAR MINIM', and 'NUMAR MAXIM'. There are also 'EXPORT PDF', 'EXPORT EXCEL', and 'EXPORT CSV' buttons. A camera view on the right shows a Ferris wheel capsule with people inside, overlaid with blue bounding boxes for detection. Below the camera view are event statistics for 'Astăzi (0)', 'Saptamana aceasta (2234)', and 'Luna aceasta (15438)', along with options for 'Adauga o Alarma' and 'EXPORT PDF'.

Zona	Contor	Obiecte	Data schimbării	Timp	Locație	Camera
2-1	2	People	2023-01-08	16:36:09	Roata Bucuresti	Oameni
2-1	3	People	2023-01-08	16:29:00	Roata Bucuresti	Oameni
2-1	2	People	2023-01-08	16:17:39	Roata Bucuresti	Oameni
2-1	4	People	2023-01-08	16:12:26	Roata Bucuresti	Oameni
2-1	3	People	2023-01-08	16:10:22	Roata Bucuresti	Oameni
2-1	5	People	2023-01-08	16:00:00	Roata Bucuresti	Oameni
2-1	2	People	2023-01-08	15:57:24	Roata Bucuresti	Oameni
2-1	2	People	2023-01-08	15:52:25	Roata Bucuresti	Oameni
2-1	3	People	2023-01-08	15:51:27	Roata Bucuresti	Oameni
2-1	2	People	2023-01-08	15:45:00	Roata Bucuresti	Oameni
2-1	1	People	2023-01-08	15:42:01	Roata Bucuresti	Oameni