POLIS
regio arnhem nijmegen

Annual
Conference
2020

VIRTUAL EVENT | 30 NOVEMBER-3 DECEMBER 2020

AI and IoT solutions for automated road inspections:
traffic signs and road surface

ASIMOB
advanced services in mobility

Traffic management

Monitoring for incident detection
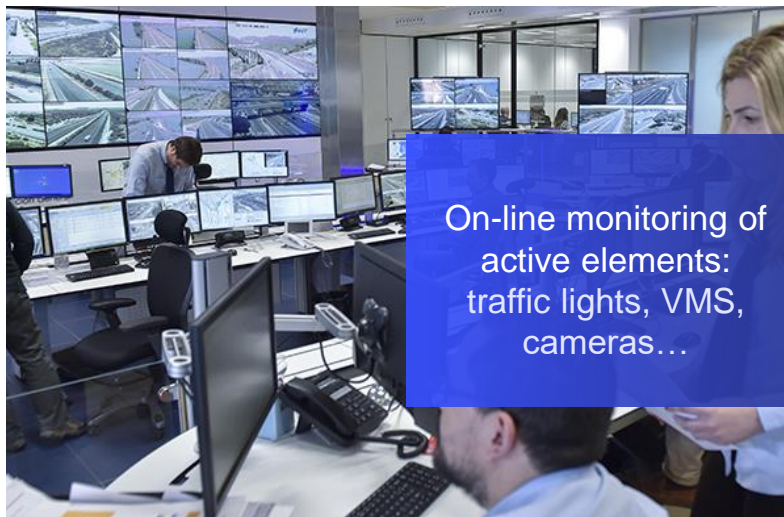
On-line monitoring of active elements: traffic lights, VMS, cameras…

Visual inspection of passive elements: traffic sings, road surface

Monitoring passive elements

Infrastructute inspetion and maintenance.

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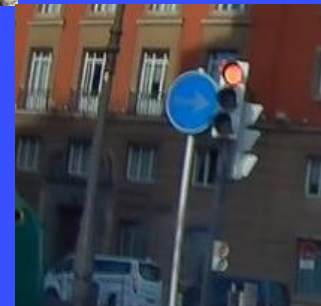Visual
inspections

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Not automated.
No evidence.

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Maintenance
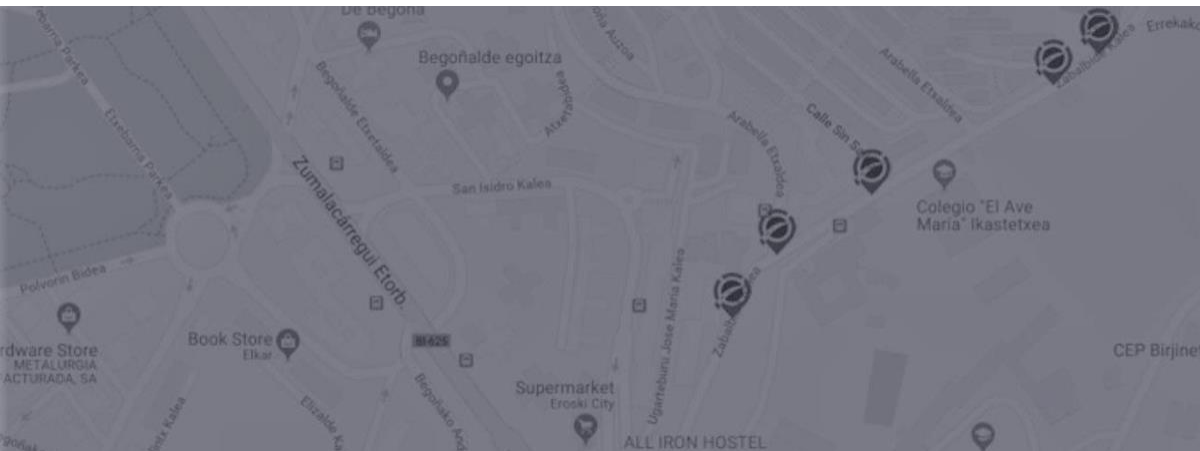costs

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Local/regional
Authority's responsibility

Limited
budgets

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ASIMOB's solution.

Automated risk detection

We generate and analyse data that saves lives

100% in-house developed SW

Location
San Sebastian
Elige una opción
Elige una opción

Types
Baches R
Baches Ba
Baches Sc
Baches G

IoT
Road data collection, geolocation and communication.

Machine Learning
Characterización of irregularities in the road surface

Computer Vision
Deep Learning AI to detect incidents in traffic signs.

Process for automating traffic sings and road Surface monitoring

Deployment and processing
——

Easy deployment in fleet vehicles

Dash-cam
Android device
OBD

AI processing in the Cloud

Computer Vision: detection and classification of traffic signs.

ML: Detection and classification of irregularities in the road surface.

2019/11/24 17:44:39   45.24KM/H N:43.26

Inventories and maintenance
Traffic sings

Elaborating and updation a traffic sing inventory is a labour-intense task.
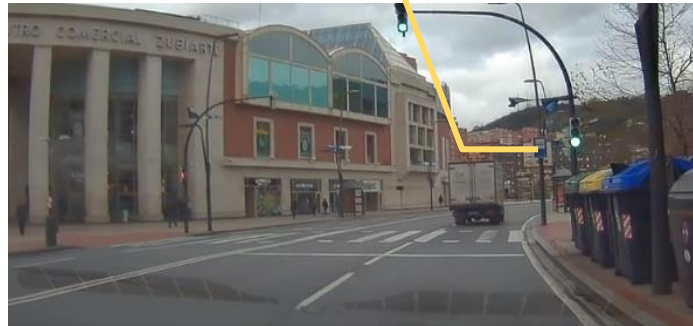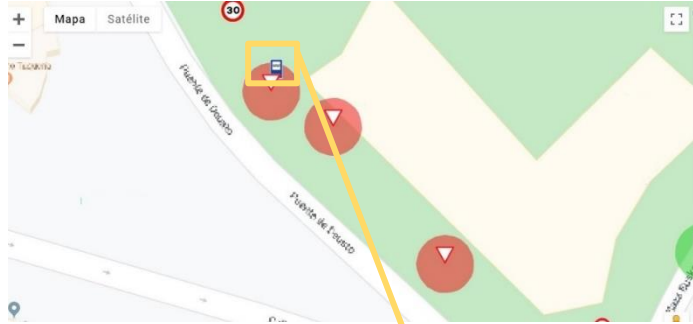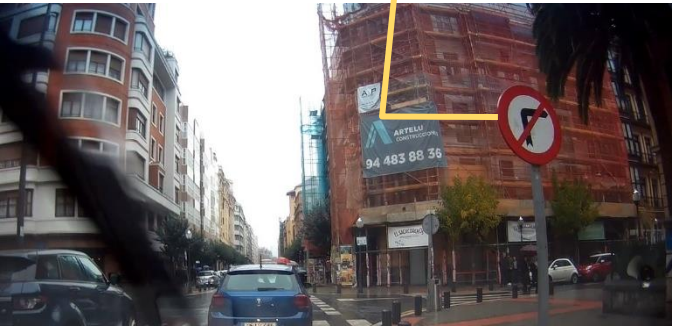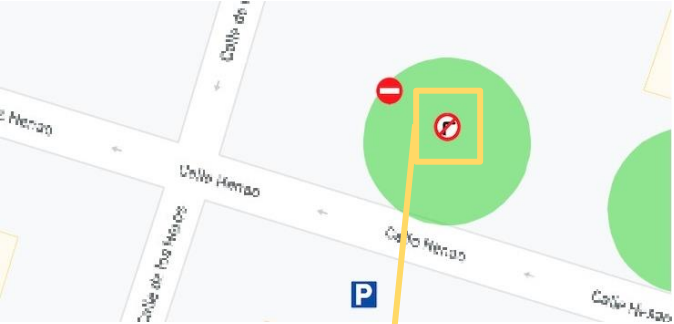
So, it is done once every several years.

And what happens in-between these updates? How are temporary signs controlled?

> 5% Traffic sings are not managed because of errors in inventories
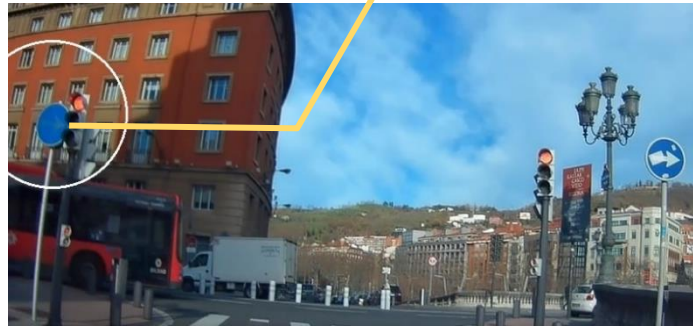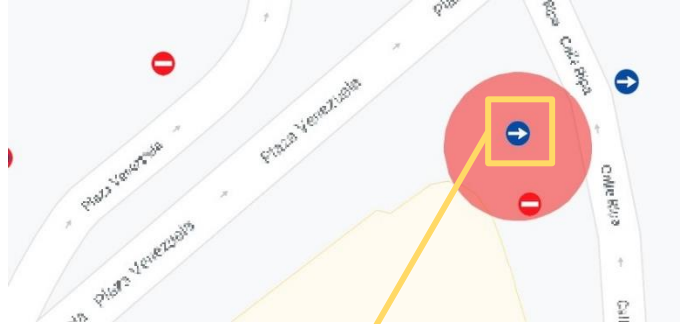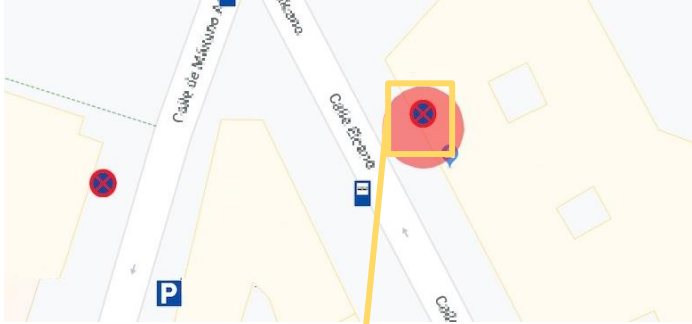
Traffic signs
Updating inventories

Traffic signs

Detecting sings that are not visible

Traffic sings

Supervising minor damages

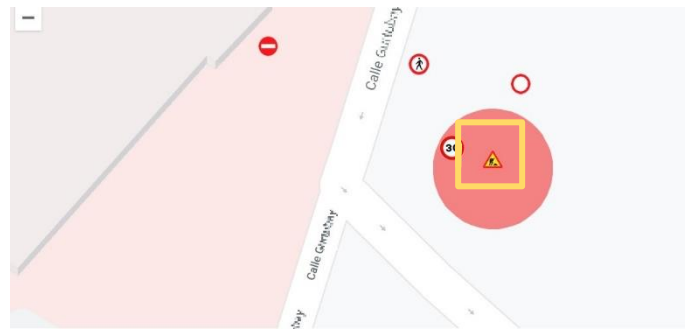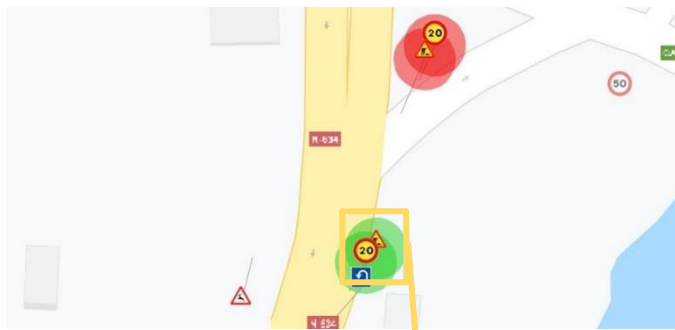Stickers or dirt

Bent or minor damage

Partially occluded

Location and video footage of the sign

Verifiyng Road Work signage

Traffic signs - Road works signage
Signage inconsistency

Ensuring good visibility

Road surface
Irregularities

Detecting early damage in the road surface that affects driving comfort. Tracking its evolution.

Potholes, damaged manholes or expansion joints…

Take decisions about road surface renewal.

**6 $** — saved in 5 years for every 1$ invested in repairing early damage this year*.

Road surface irregularities

Detection and evaluation

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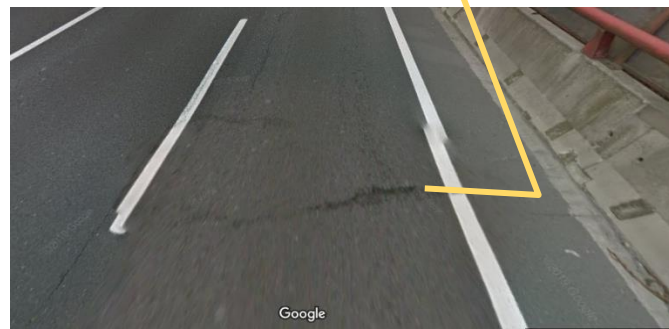
Automation for road/street maintenance

Automated inspections are more **effective**

Sistematic checks, generation of digital evidence..

Early detection of risks and degradation

Related to road infreastructure.

Integration of maintenance process in other systems

SmartCIty platforms, TMC, SCADA…

Digital transformation of road M&O

Automated process to manage traffic signs and road surface.

Thank you

ASIMOB
advanced services in mobility

Committed
to the SDO

| 5 IGUALDAD DE GÉNERO | 8 TRABAJO DECENTE Y CRECIMIENTO ECONÓMICO | 9 INDUSTRIA, INNOVACIÓN E INFRAESTRUCTURA | 11 CIUDADES Y COMUNIDADES SOSTENIBLES | 12 PRODUCCIÓN Y CONSUMO RESPONSABLES |

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