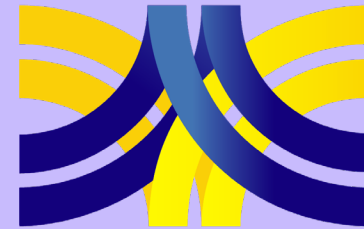


49th ASECAP DAYS

*Decarbonizing Road Infrastructure : Challenges,
Perspectives and Actions in Tough Economy*

ASECAP DAYS

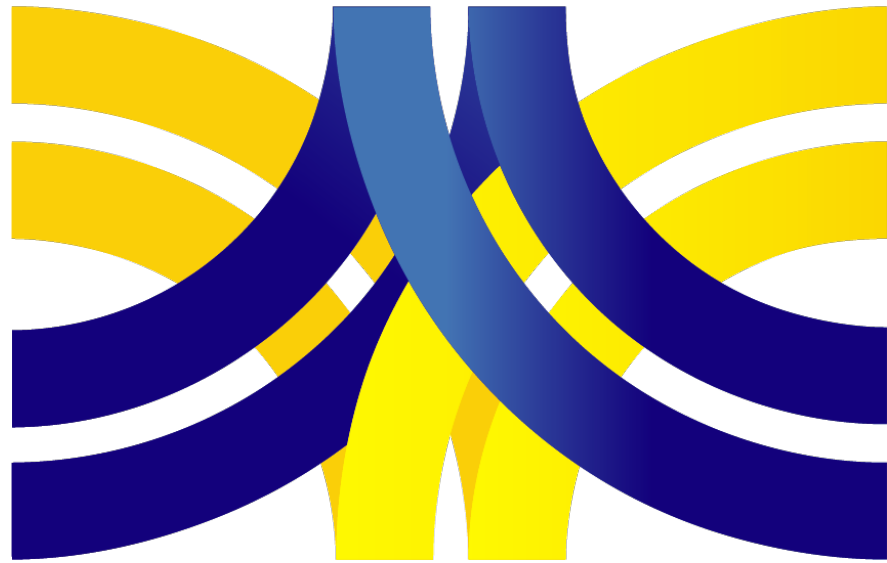


BRUSSELS 2022



Hotel Marriott Grand Place, Brussels
24 – 25 November 2022

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VERTICAL SIGNS AND ROAD MARKINGS LIFECYCLE MANAGEMENT IN THE ASCENDI NETWORK

Sara Sanches



AGENDA

/ 01 Ascendi Key Figures

/ 04 Data Analysis

/ 02 Framework

/ 05 Final Remarks

/ 03 Asset Management

/ 06 Future Development Perspectives

/ 01 Ascendi Key Figures

#1 Overview

/ Ascendi, a leader in the road infrastructure market, **manages infrastructure assets** and provides **toll collection** and **operation & maintenance** services.

/ With more than 20 years of consolidated experience, Ascendi is recognized by its **innovative capacity** and **operational efficiency**.

6 Motorway Concessions

630 Km in operation



/ 01 Ascendi Key Figures #2 Business Areas

Asset Management



/ Control of **6** Concessions

/ **\$3.6 Billion** Global investment in the 6 concessions CapEx

Operation & Maintenance



/ Road **Operation and Maintenance**

/ **Intelligent Transport Systems (ITS)**

/ **Maintenance Management**

Toll Collection



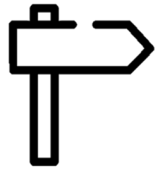
/ **2** traditional toll operations

/ **7** electronic toll operations

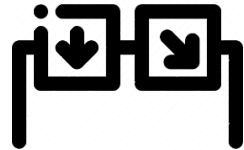
/ 02 Framework

#1 Inventory Database

Vertical Signs

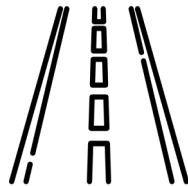


/ **30.000** support structures



/ **42.000** signs attached

Road Markings



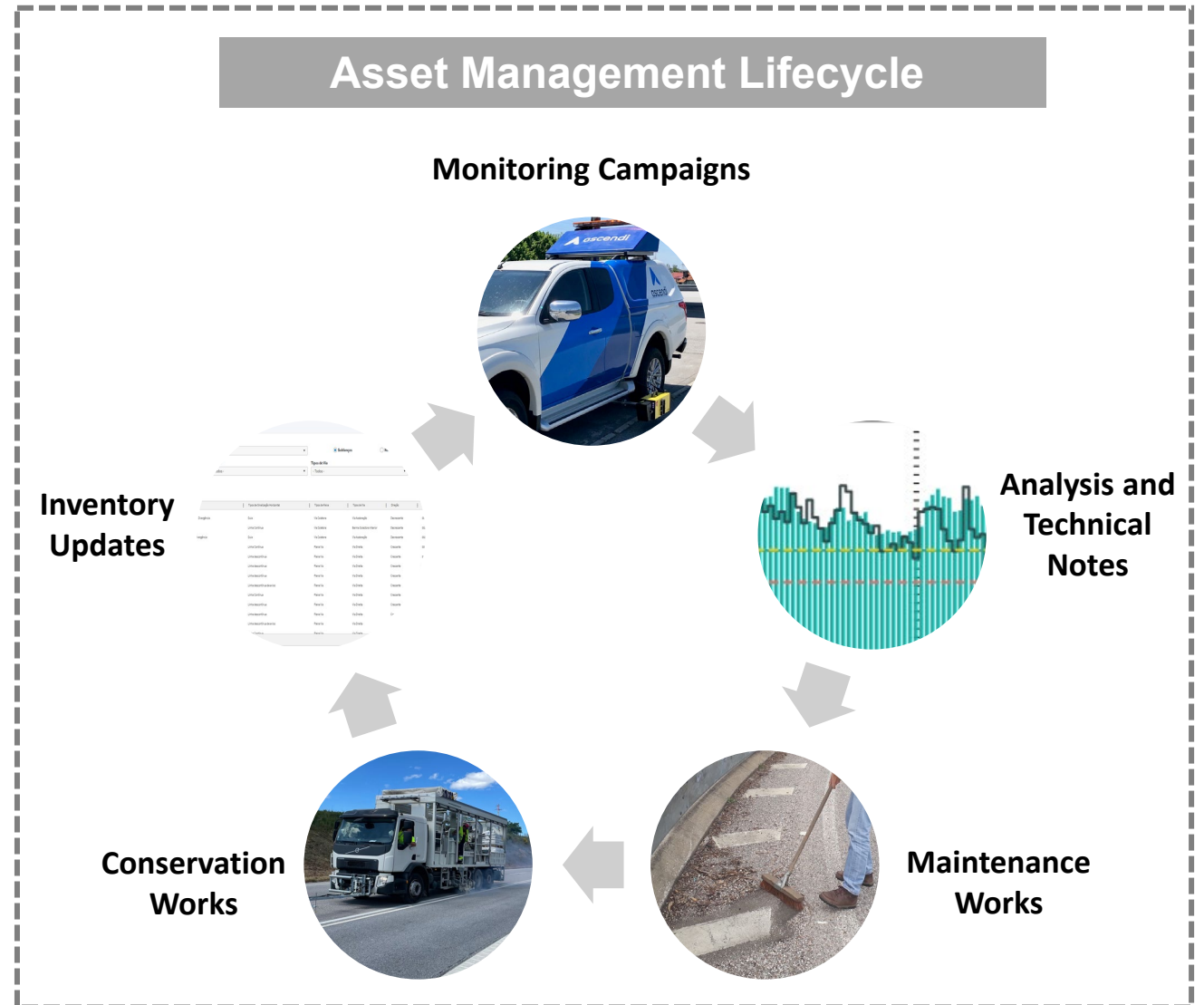
/ **5.000** km
(edges and centre lines markings)

/ **6.400** units
(worded and diagrammatic markings)

/ 02 Framework #2 Lifecycle

/ Ascendi follows concession contracts that includes quality control plans where are defined **minimum standards** and **periodic verifications** for vertical signs and road markings.

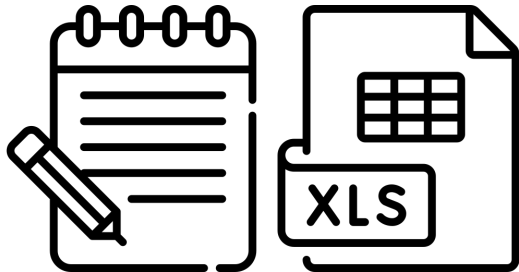
/ The asset management lifecycle considers the necessary activities to **ensure** the **accomplishment** of the **required performance**.



/ 02 Framework

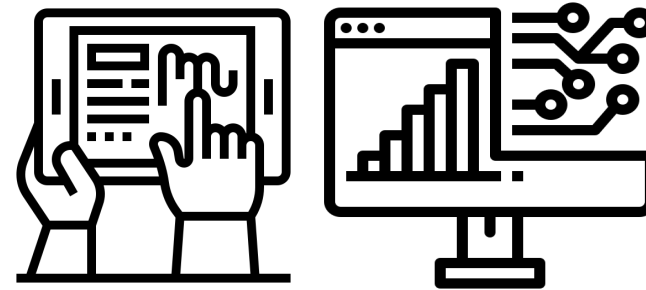
#3 Digital Transformation

Past Practice



- paper-based process to record information collected on the field
- afterwards the data was gathered and organized on worksheets and the pictures were uploaded manually

Current Practice



SustIMS
SUSTAINABLE INFRASTRUCTURE
MANAGEMENT

Power BI

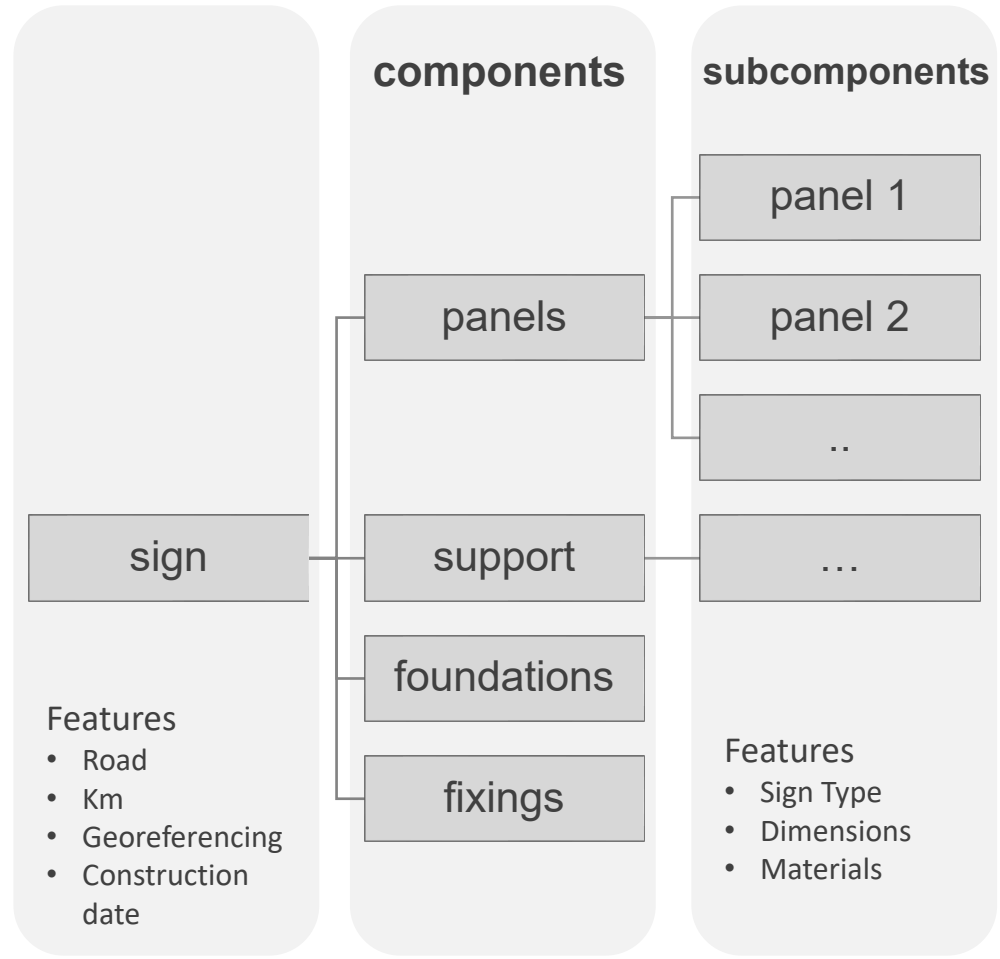


- totally digital system based on SustIMS, GIS and BI tools
- improvement on procedures efficiency and information sharing

/ 03 Asset Management

#1 Vertical Signs

INVENTORY STRUCTURE



/ 03 Asset Management #1 Vertical Signs

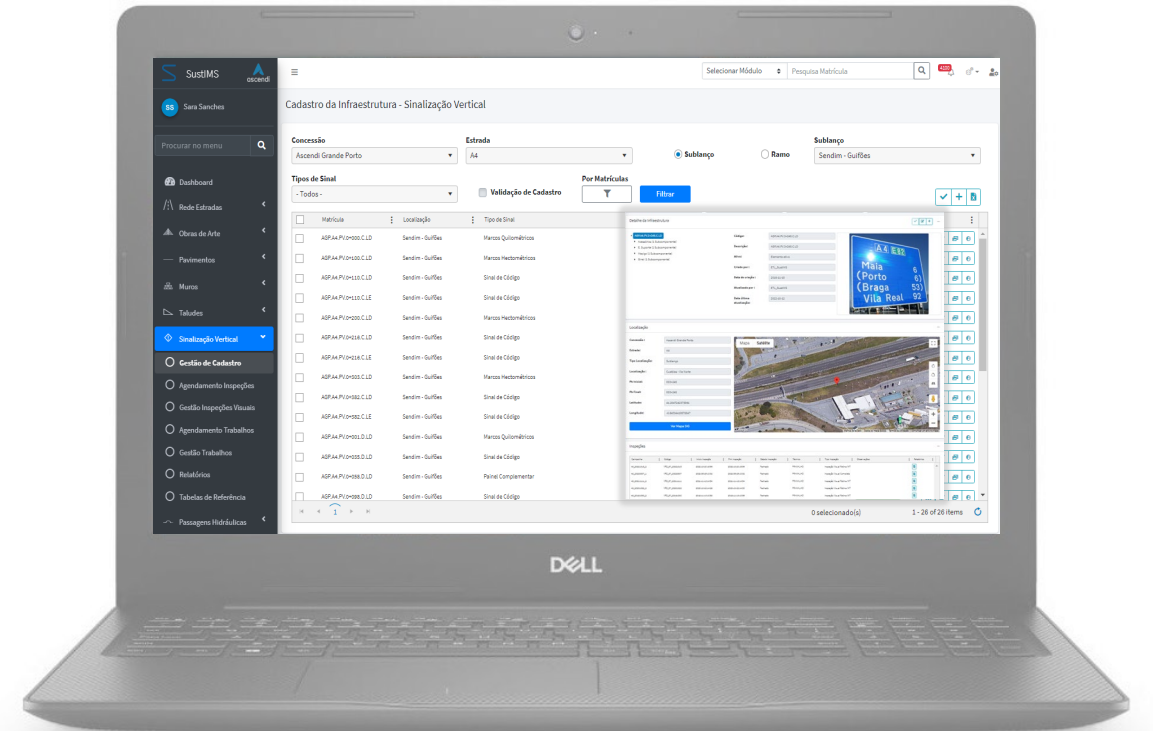
Inventory Management

- SustIMS -

Integrates and manages the information.

- GIS -

Allows mapping the position of the assets and view relevant features.



/ 03 Asset Management #1 Vertical Signs

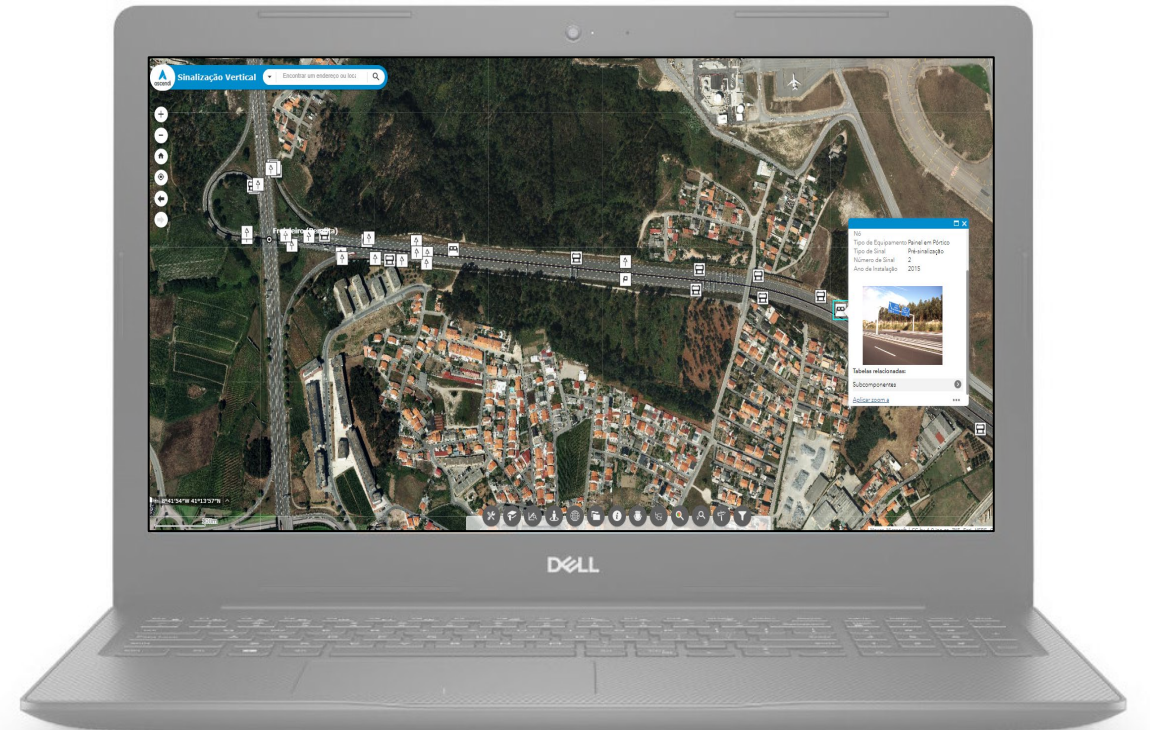
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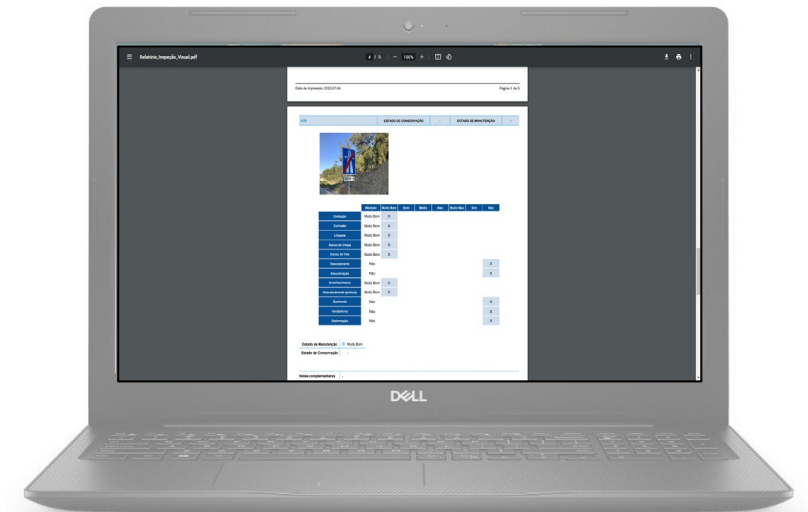
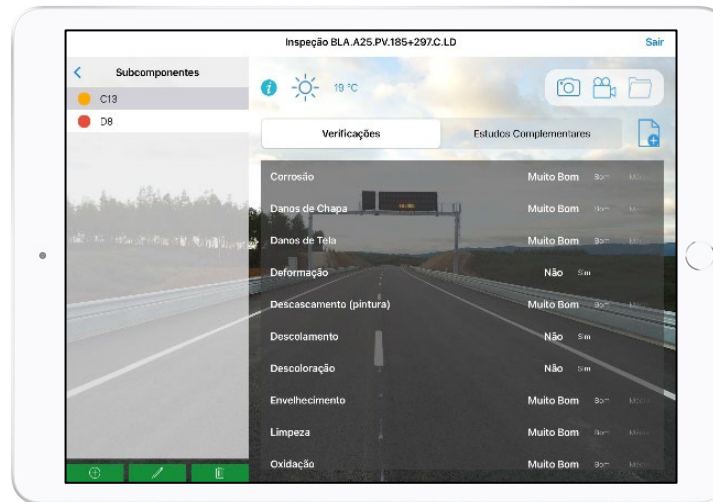
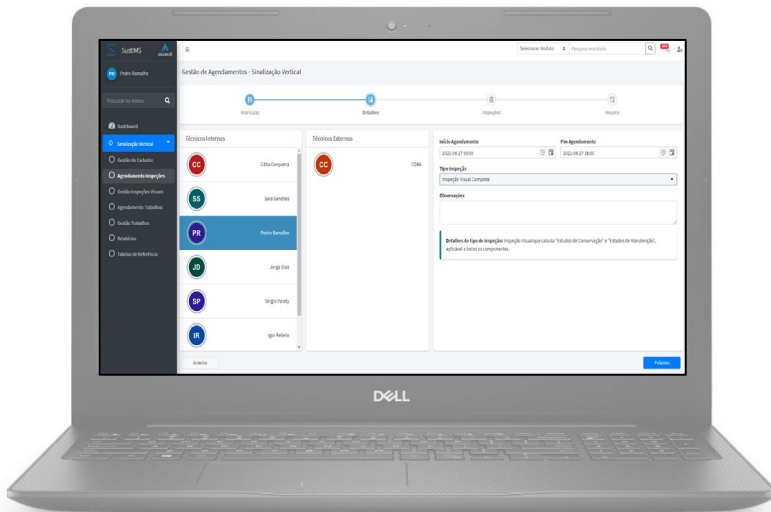
/ 03 Asset Management #1 Vertical Signs

Inspections Management

#1
Schedule dates and types of inspections.

#2
Download, execute and upload operations.

#3
Integrate and validate information - CS / MS calculation and reporting.



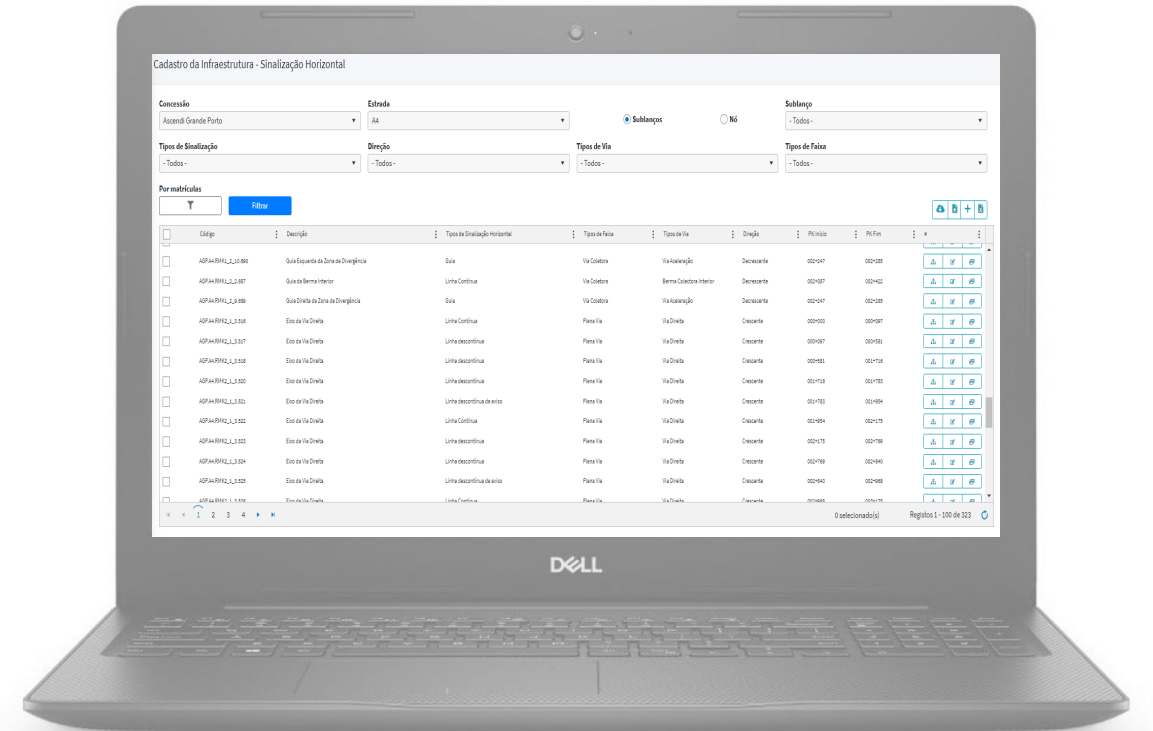
/ 03 Asset Management #2 Road Markings

Inventory Management

- **SustIMS** -
Integrates and manages the information.

Asset features:

- Km
- Marking type
- Lane position



/ 03 Asset Management #2 Road Markings

Inspections Management

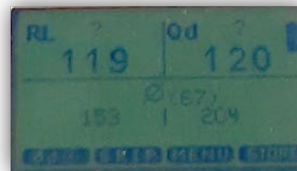
Monitoring Campaigns

- Retroreflectivity
- Skid Resistance

Visual Inspections

Registering observed pathologies such as:

- Cracking
- Markings Wear
- Over-thickness
- Absence of daylight contrast



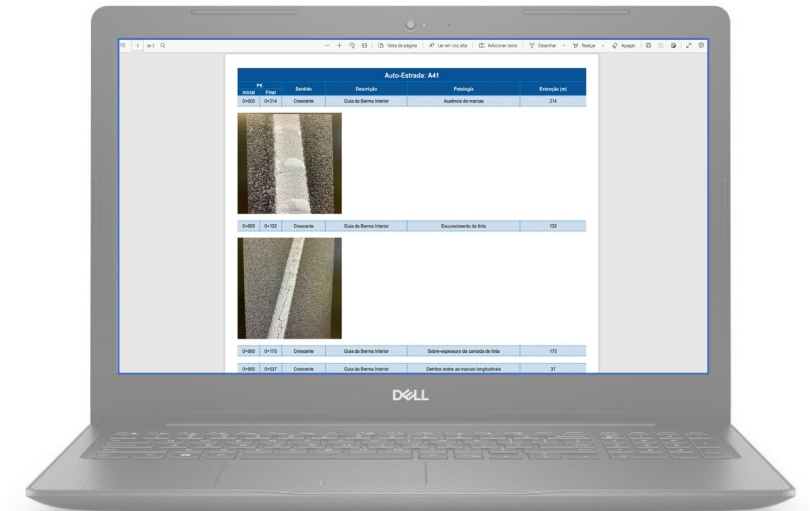
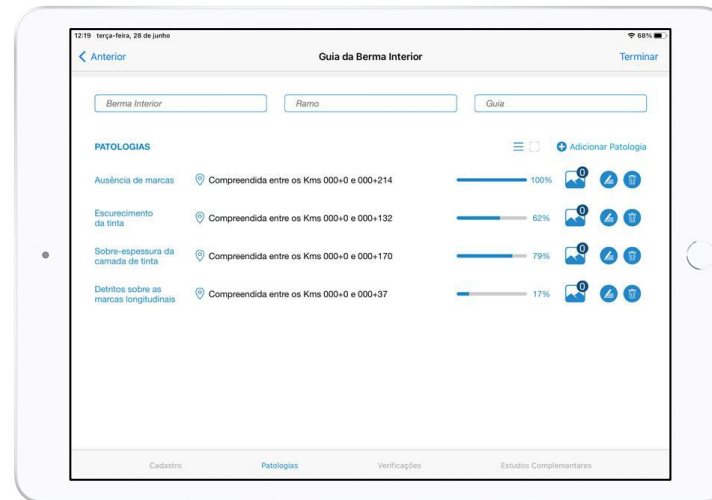
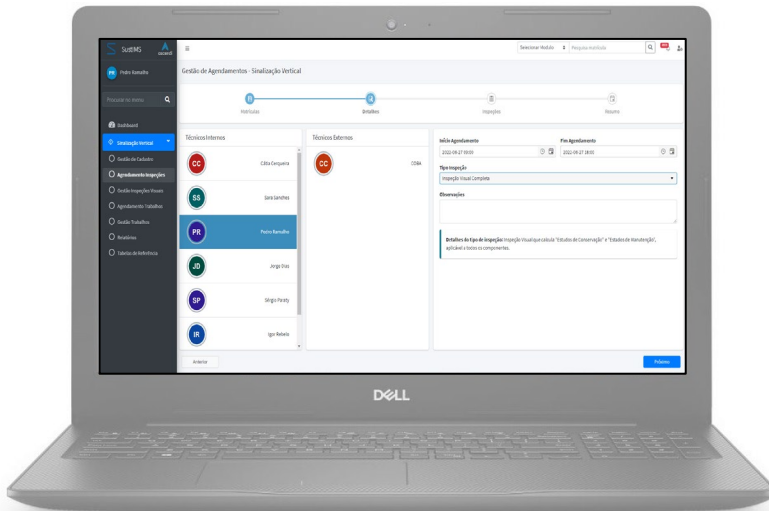
/ 03 Asset Management #2 Road Markings

Inspections Management

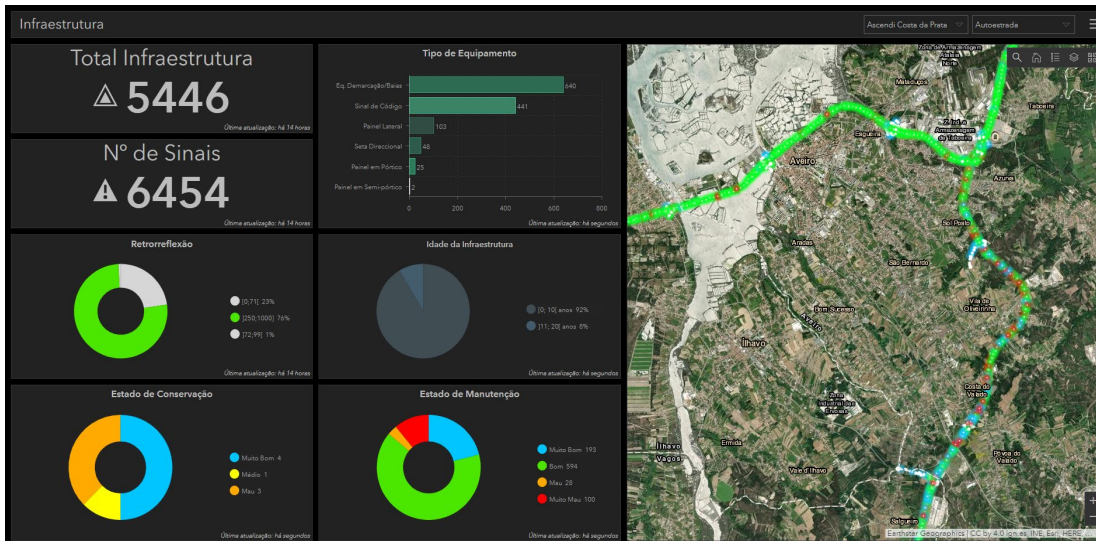
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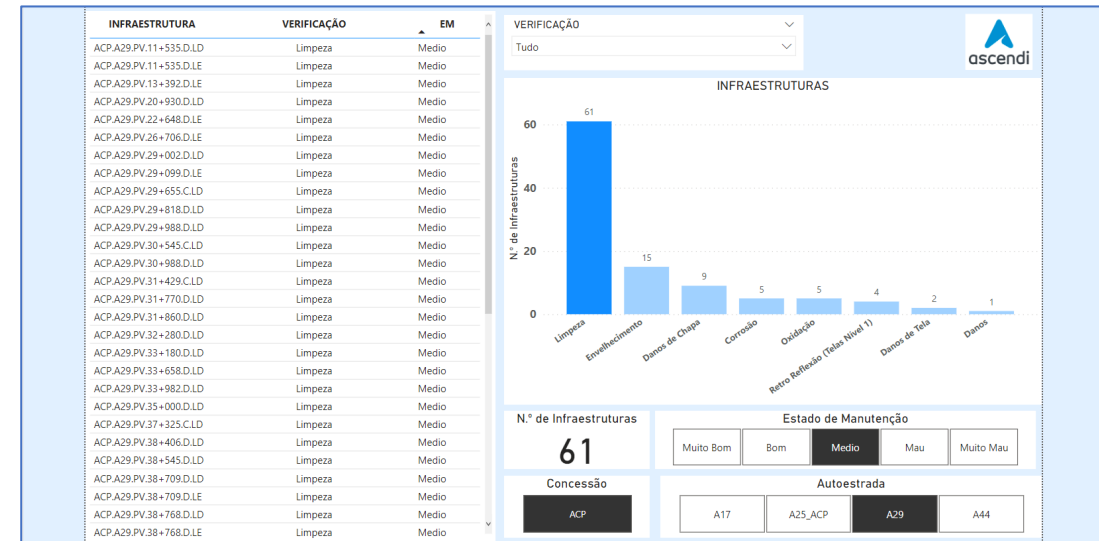
#3
Integrate and validate information - CS / MS calculation and reporting.



/ 04 Data Analysis #1 Vertical Signs

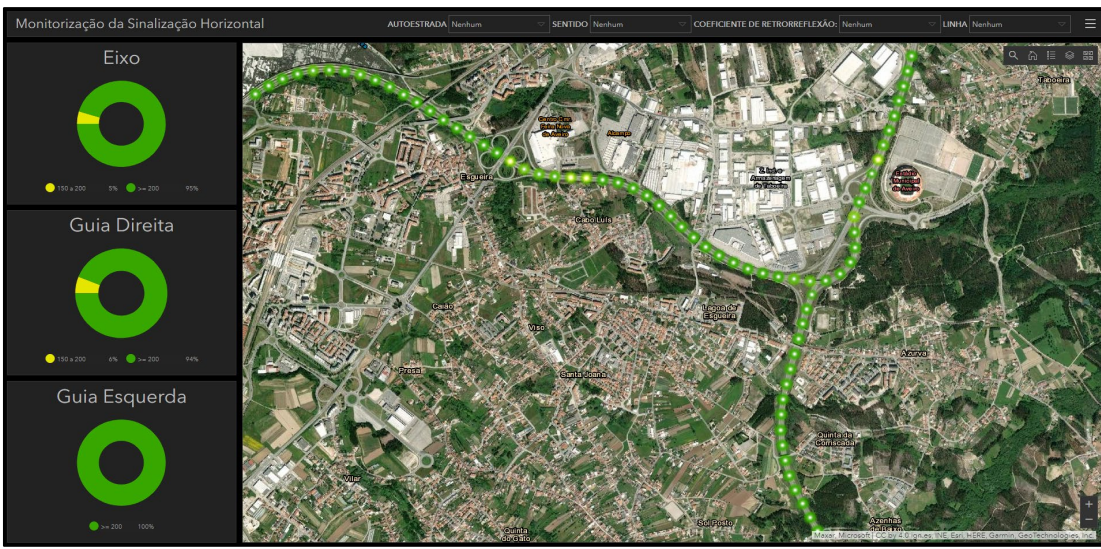


GIS - Dashboards

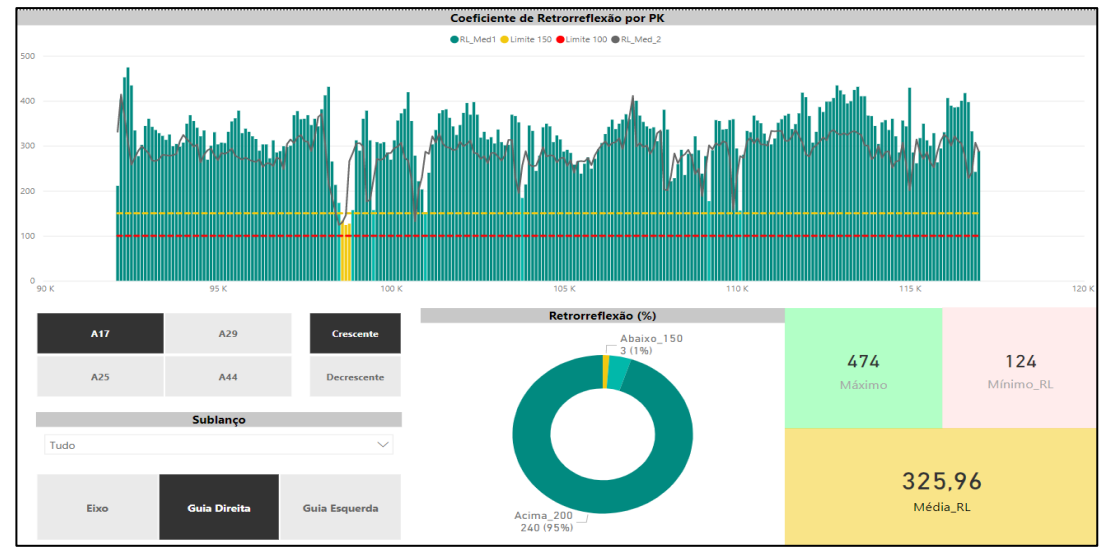


Business Intelligence

/ 04 Data Analysis #2 Road Markings



GIS - Dashboards



Business Intelligence

/ 05 Final Remarks



Visual inspection with reference to consistent and objective parameters



Calculation of Maintenance and Conservation States (EM and EC)



Visualization of information through dashboards and tailor-made reports



Possibility of recording and analyzing the assets historical data

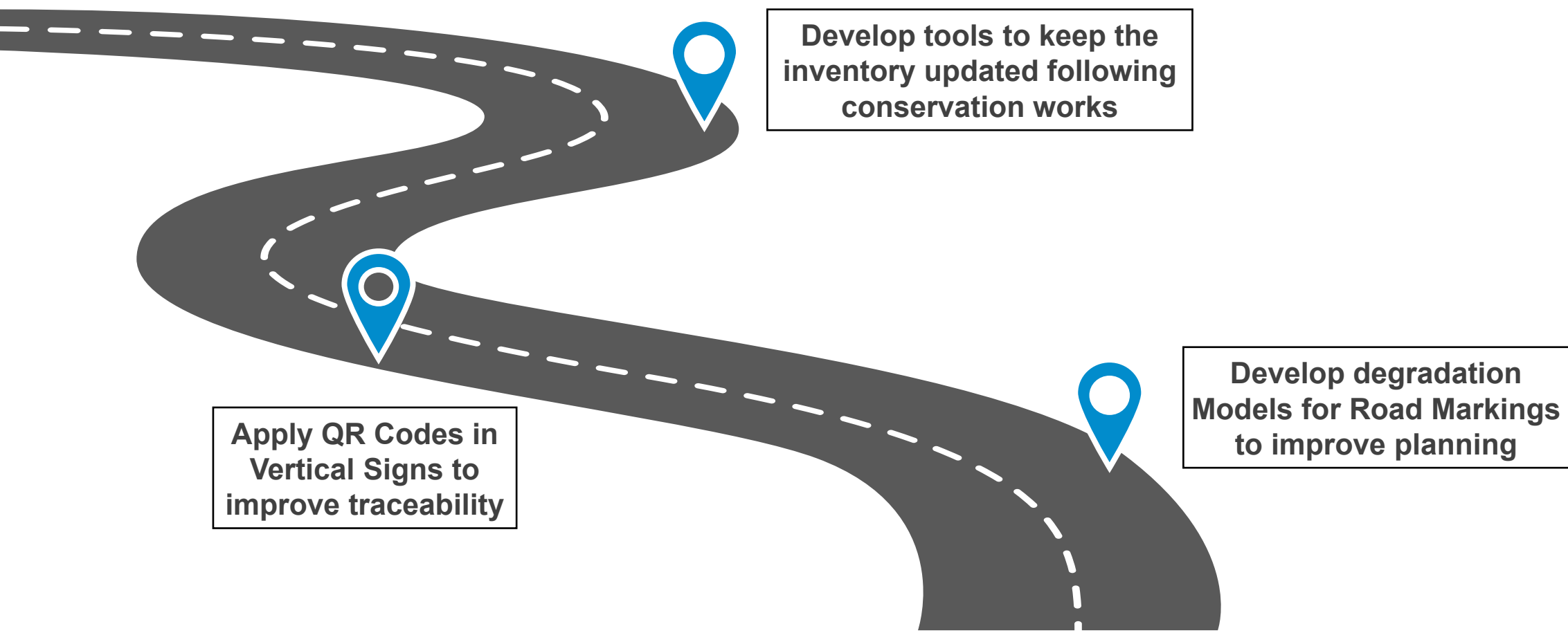


Instant information sharing with all asset stakeholders



More reliable inspection process

/ 06 Future Development Perspectives



THANK YOU FOR YOUR ATTENTION

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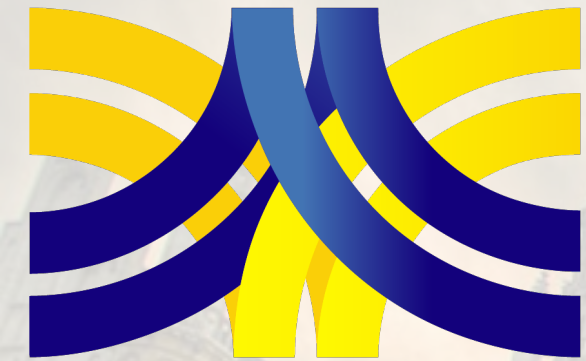
Ascendi



Digital Operation



ASECAP DAYS



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YOUR ATTENTION**

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