

# FROM DATA TO DECISIONS

## Exploring the Value of Artificial Intelligence within Mobility

Intel·ligència Artificial i Mobilitat



Ramon Pruneda – CTO AMB Informació  
March 2026



ACT I

**A DAY IN A CITY**



ACT II

**WHEN AI BECOME POSSIBLE**



ACT III

**THE THREE AI STORIES**



ACT I

**A DAY IN A CITY**

Today...at 7:30am in Barcelona Metropolitan Area...



Excepció vehicles d'empresa  
Lab. de seguretat i desenvolupament  
Tècnics de seguretat i desenvolupament  
Temp. màxim 30 minuts

Cançons, fragments i vehicles  
Codi únic: B050  
Validació a terminal d'entrada  
Desplaçament / Aparcament

Aparcament  
d'intercanvi  
**P+R**  
Espai reservat  
per a usuaris

ZBE

Excepte  
0 ECO C B  
i vehicles autoritzats

23 ↗

YOUR HOME LOCATION

Circuitor

# Today...at 7:30am in Barcelona Metropolitan Area...

100,000 active users  
500,000 operations / year

1.5M park operation / year

400,000 Beneficiaris per year  
(Consession PT Cards)

6,000 expeditions / year  
5,000 Service disruptions

1,500 etaxi / day

2,000 e-bicycles / day

1.5M License Plates / week

9,000 e-bike rides/day

6,500 LEZ access request / month

3,500 EV Charges / month



Today...at 7:30am in Barcelona Metropolitan Area...

Mobility is no longer physical. It is digital



ACT I

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ACT II

**WHEN AI BECOME POSSIBLE**



ACT III

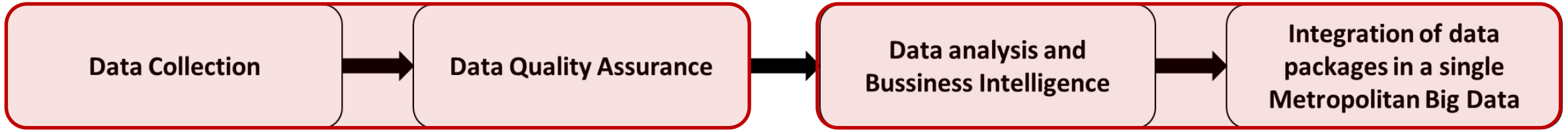
**THE THREE AI STORIES**



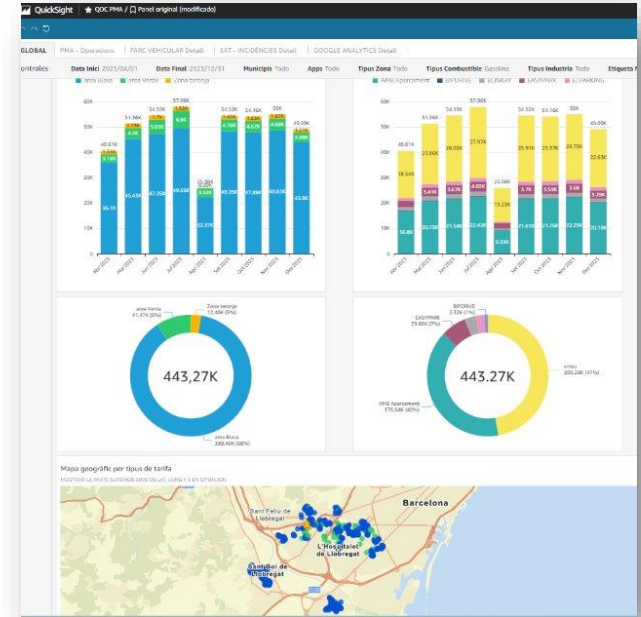
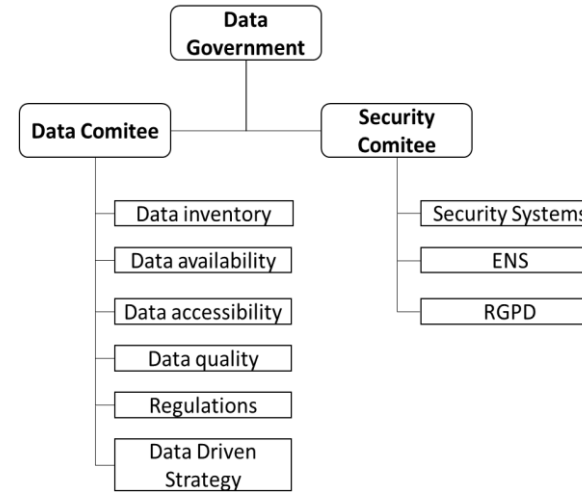
ACT II

**WHEN AI BECOME POSSIBLE**

# Before AI, There Was (DATA...) Discipline

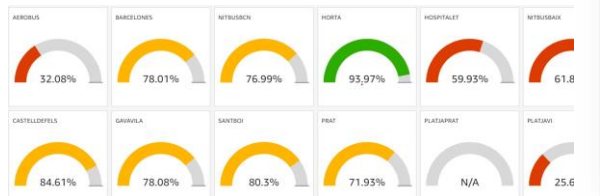


Quality/Alerts Data Dashboard



## Real Time Availability

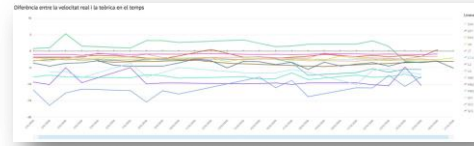
Mayor o igual al 85% OK (verd) – Entre el 85% i 70% acceptable (groc/taronja) – Inf



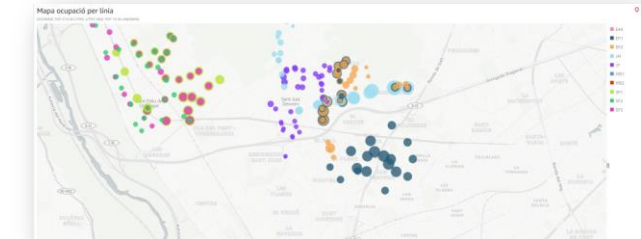
## Punctuality



## Speed



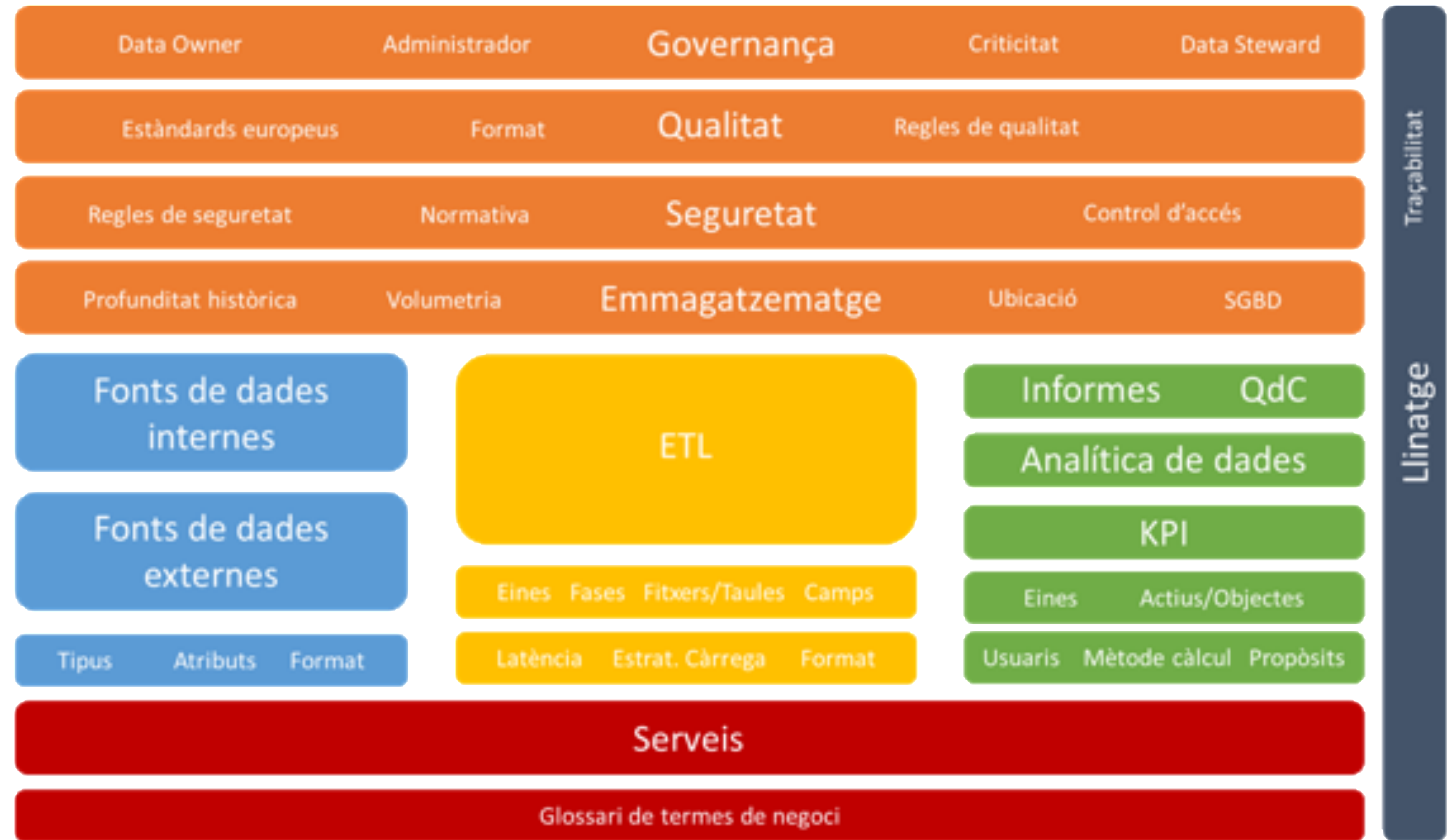
## BUS Occupancy



## DATA CATALOG (+ metadata..)

- What data exists
- What they represent
- Which business area they belong to
- Where they come from
- Where they are stored
- Who has access
- What are they for?
- How to use them
- What transformations do they undergo
- What format and structure do they have?
- When they were created
- How and how often they are updated
- What quality standards apply to them
- What security and privacy standards apply
- Who is responsible

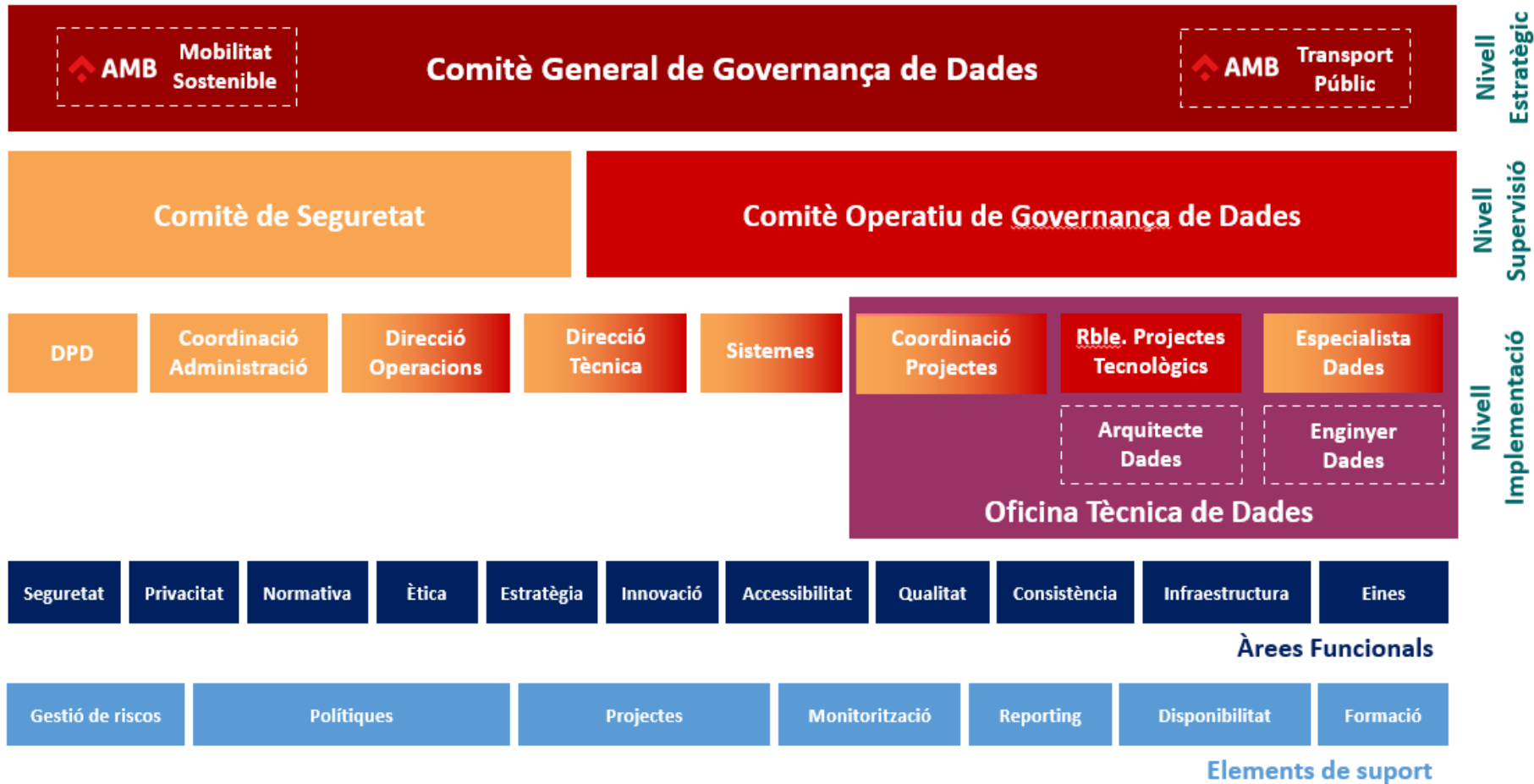
## AMB INFORMACIÓ DATA CATALOG FRAMEWORK



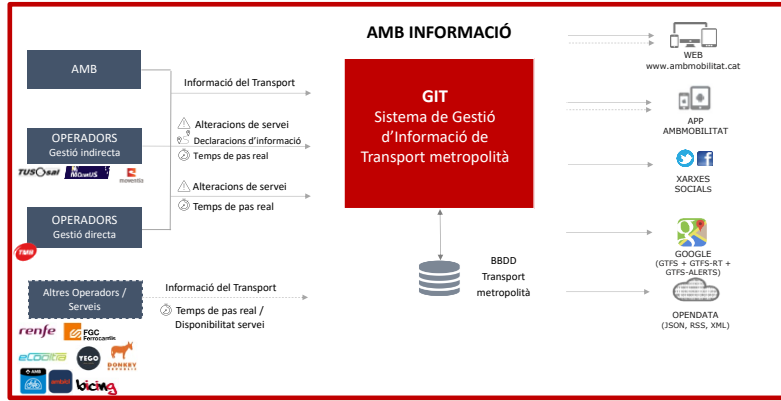
# Before AI, There Was (DATA...) Discipline

Have a permanent Data Governance Committee that aims to coordinate, secure and proceed processes around data.

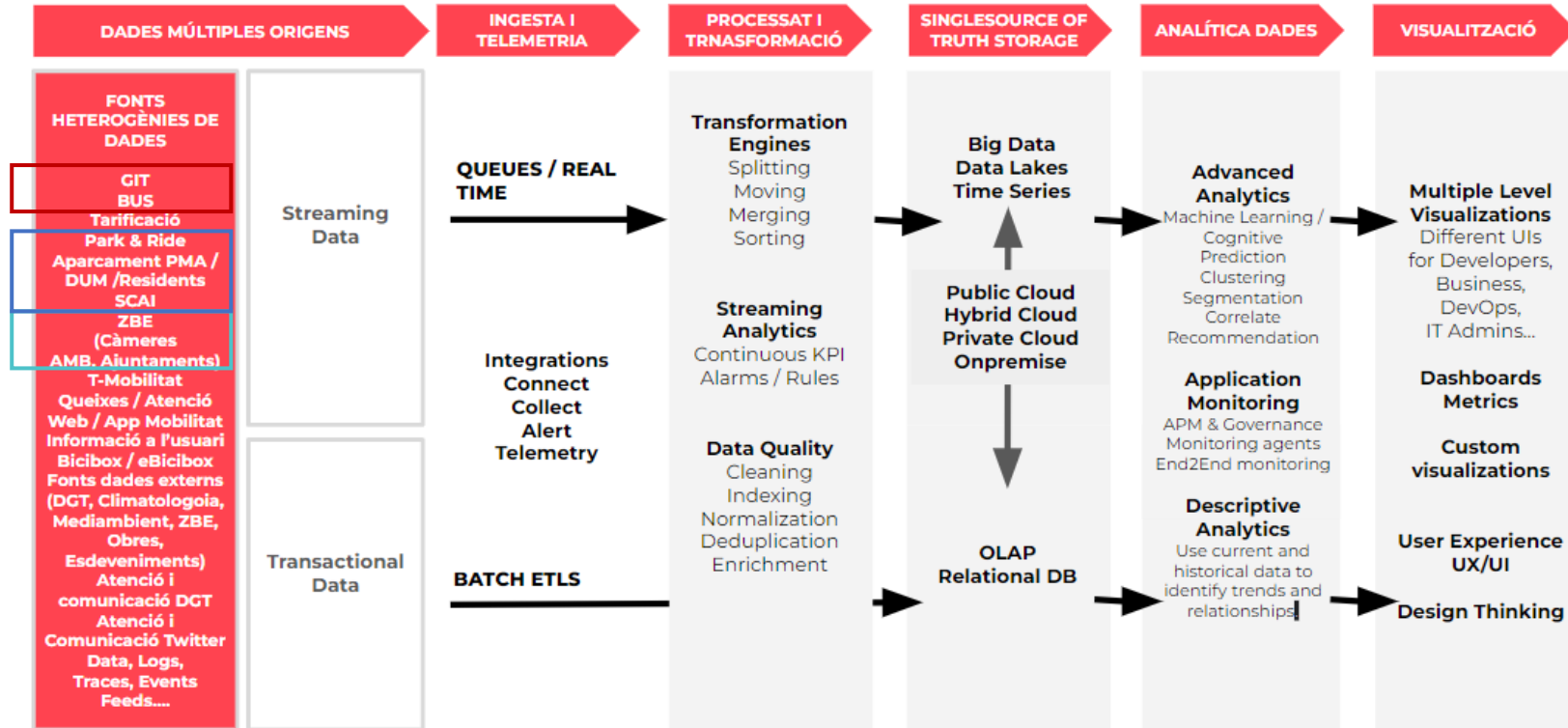
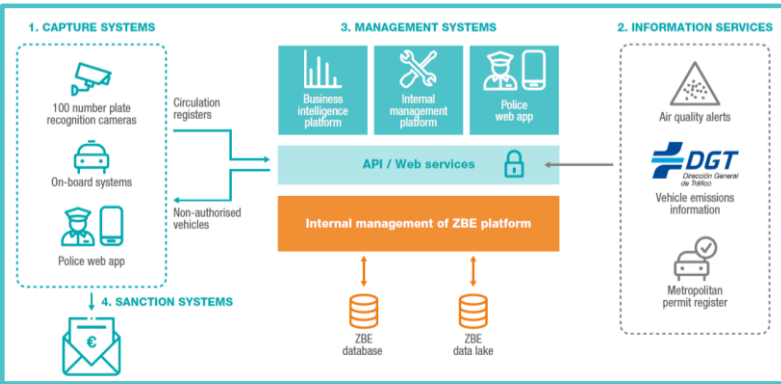
Represented by different profiles that engulf the entire value chain of the entity:



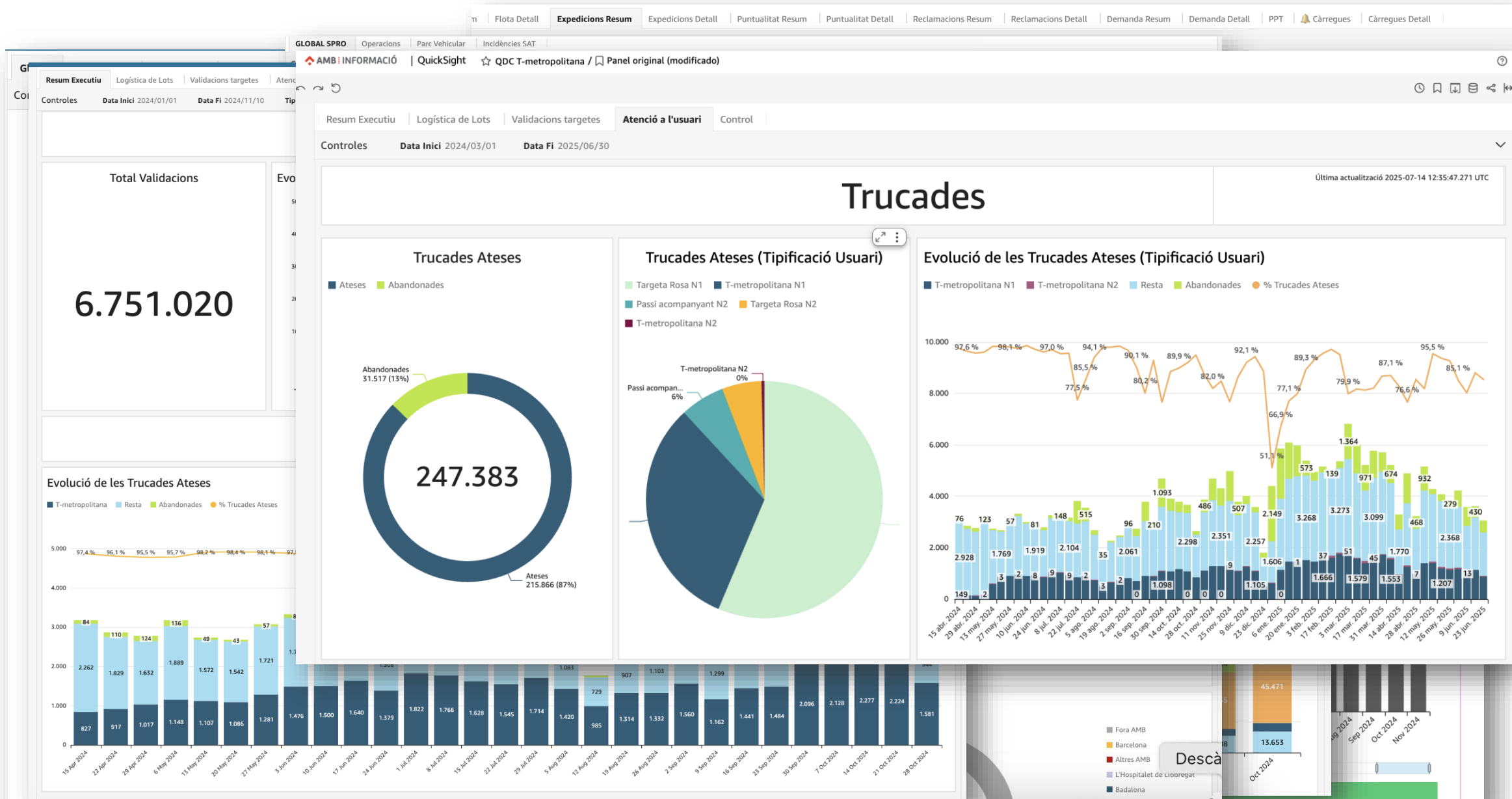
# Before AI, There Was (DATA...) Discipline



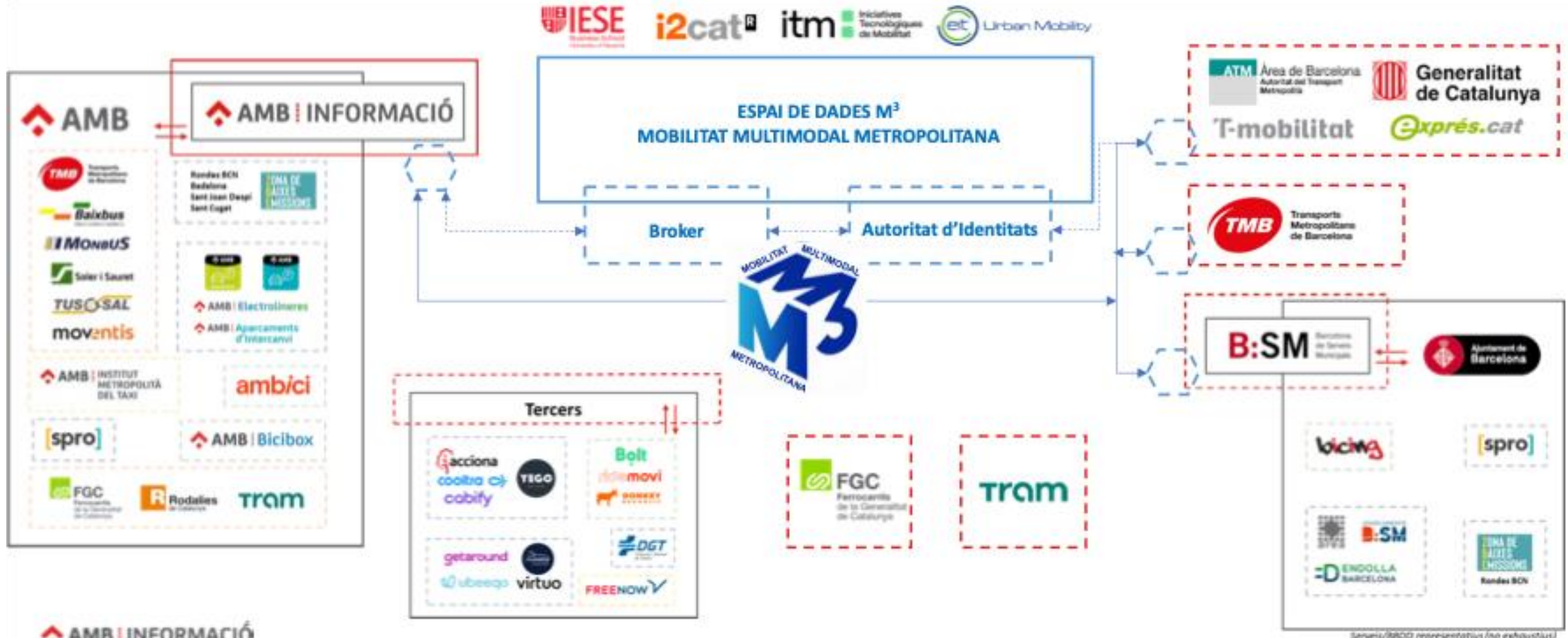
## Framework per a AMB per la ingesta, tractament i visualització de múltiples fonts de dades



# BI tools for public-sector planners and decision-makers



# DATA SPACES: M3 – Mobilitat x Multimodal x Metropolitana



"AI Was Not a Decision. It Was a Consequence."

 **Structured Data**

 **Controlled Data Integration**

 **Trust Indicators**

 **Expertise Ecosystem**

"And so we ask ourselves: where can AI create real value?"



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**THE THREE AI STORIES**



ACT III

# THE THREE AI STORIES

# STORY 1: AIDA Project - AI model for Bus Demand Prediction



**2**

Shuttle lines



**33 km**

Network length



**33**

100% adapted  
Vehicles



**5.7 M**

Passengers

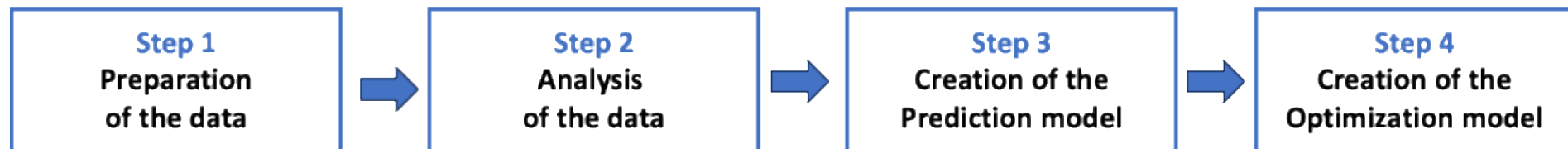


## PROJECT OBJECTIVE

1. ANALYSE THE **IMPACT THAT EXTERNAL FACTORS MAY HAVE ON THE DEMAND FOR SERVICES**
2. DEVELOP A **COMBINED MODEL FOR DEMAND FORECASTING & OPTIMIZATION OF THE BUS FLEET TO ADJUST THE SERVICE**

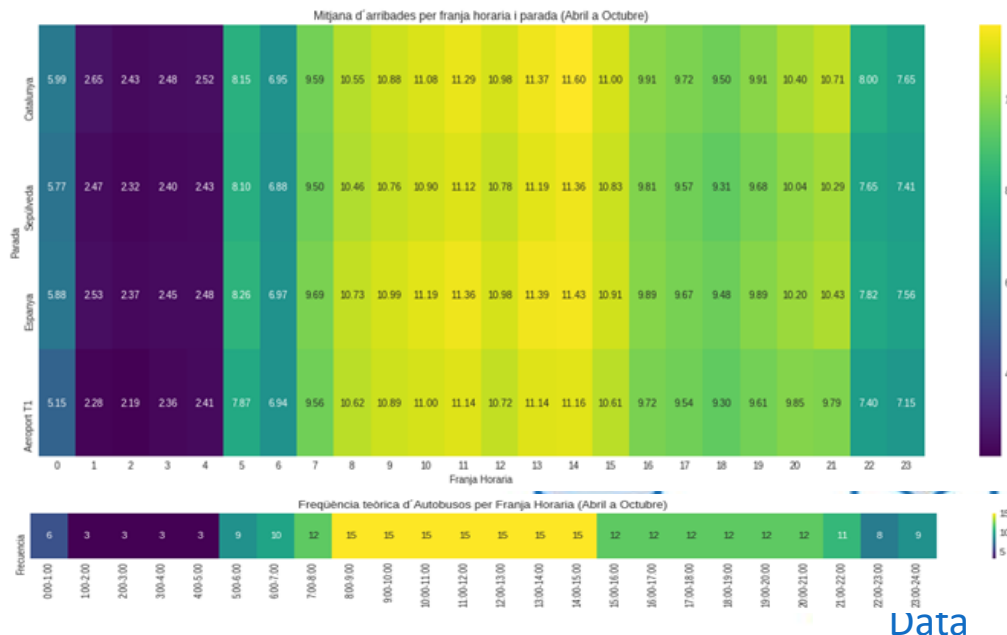


## THE DIFFERENT STAGES

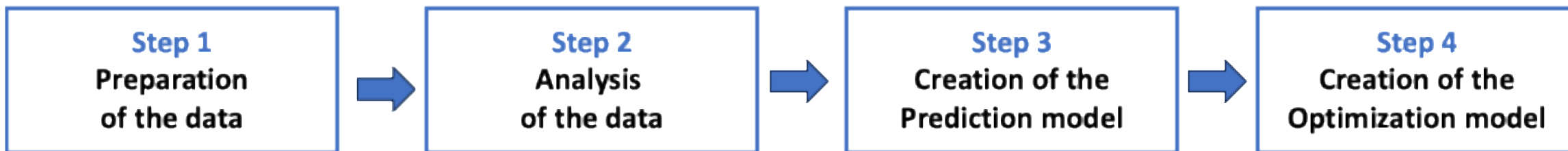
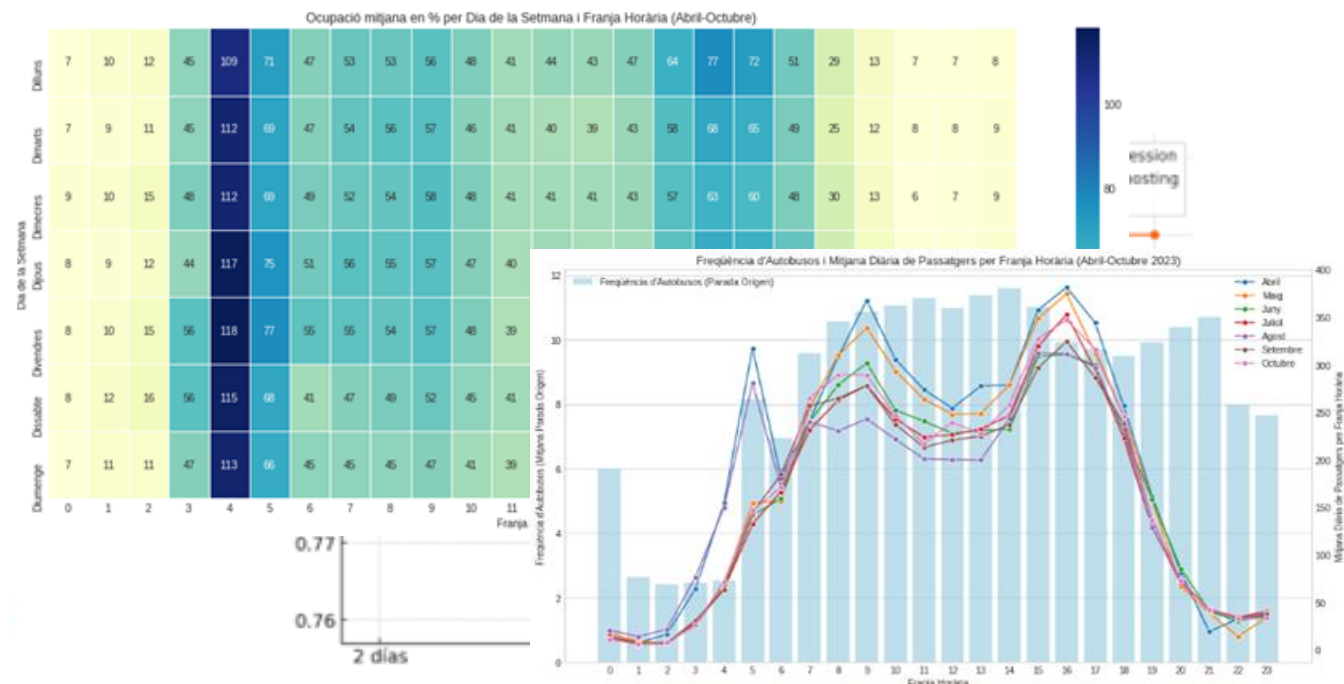


# STORY 1: AIDA Project - AI model for Bus Demand Prediction

## Services by time slot



## Average and over-occupancy



# STORY 2: GenAI ChatBot for citizens Attention

## T-Metropolitana AI Assistant

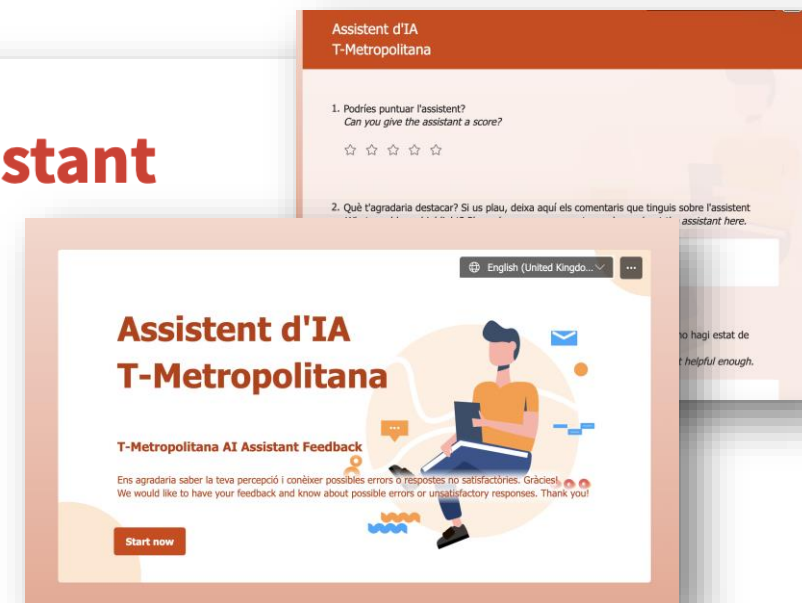
I am the assistant on the T-Metropolitana, how can I help you?

Ask me...

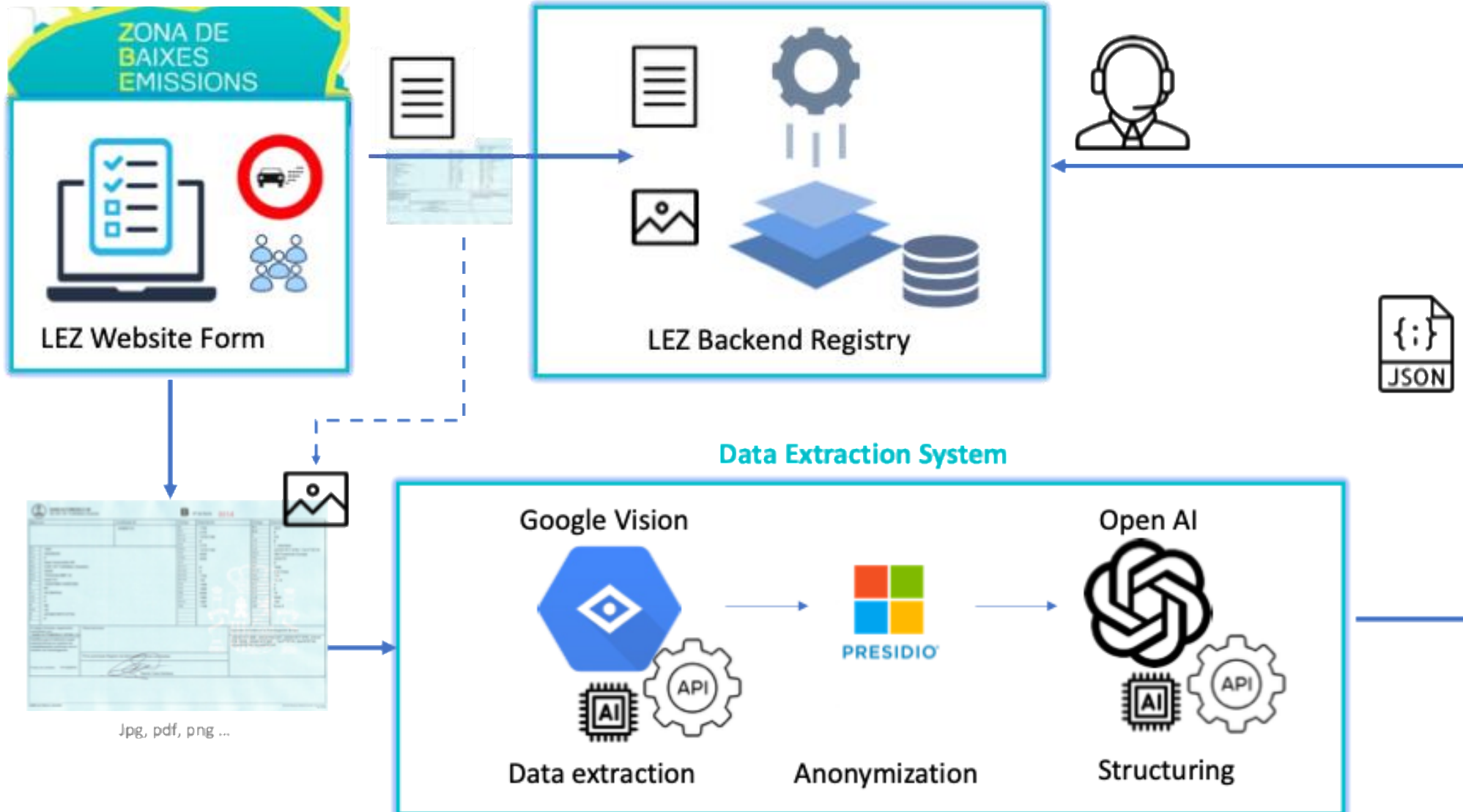
Send

**Thank you for trying this out! We would like to have your feedback [here...](#)**

This is a beta test service using an AI service based on ChatGPT. Responses can be inaccurate or even wrong in some cases.



# STORY 3: Public procedures AUTOMATION





ML AI vs GenAI



Specialized Resources & Investments



Time to prepare DATA



Ethic&Legal Considerations



THANKS FOR YOUR ATTENTION  
Ramon Pruneda  
CTO, AMB Informació i Serveis