



Eros4NRG: Zero Trust IoT Analytics for Smart Energy

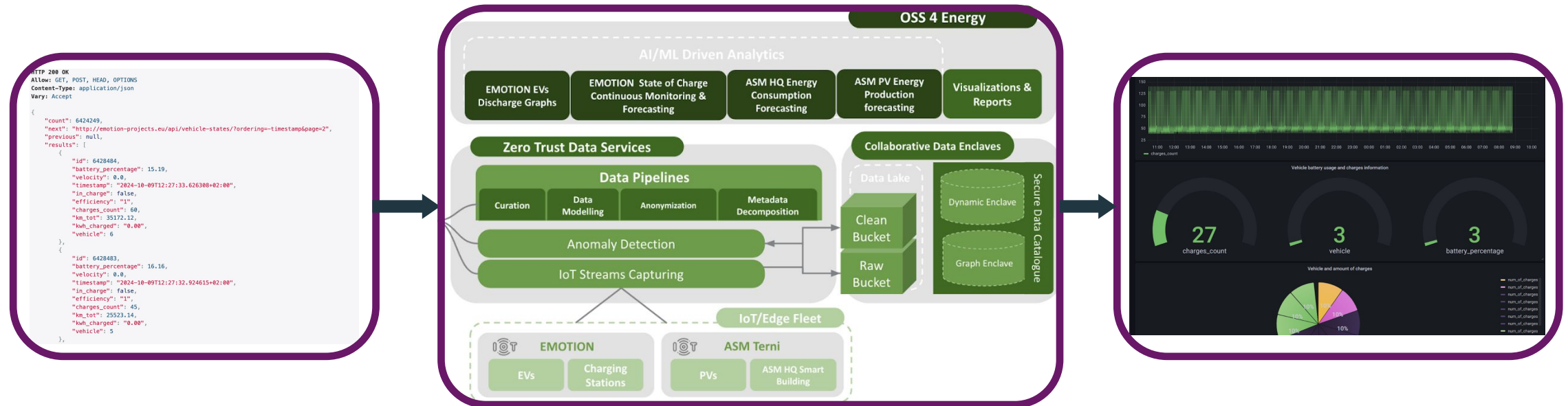
Minimum Viable Product (MVP)

Martel Innovate

Eros4NRG Architecture



- Data -> Processing -> Visualization



Vision



- Data analytics
- Data trust & transparency
- Centralized data management & processing
- Visualization
- Continuous collaboration

Eros4NRG: Minimum Viable Product (MVP)

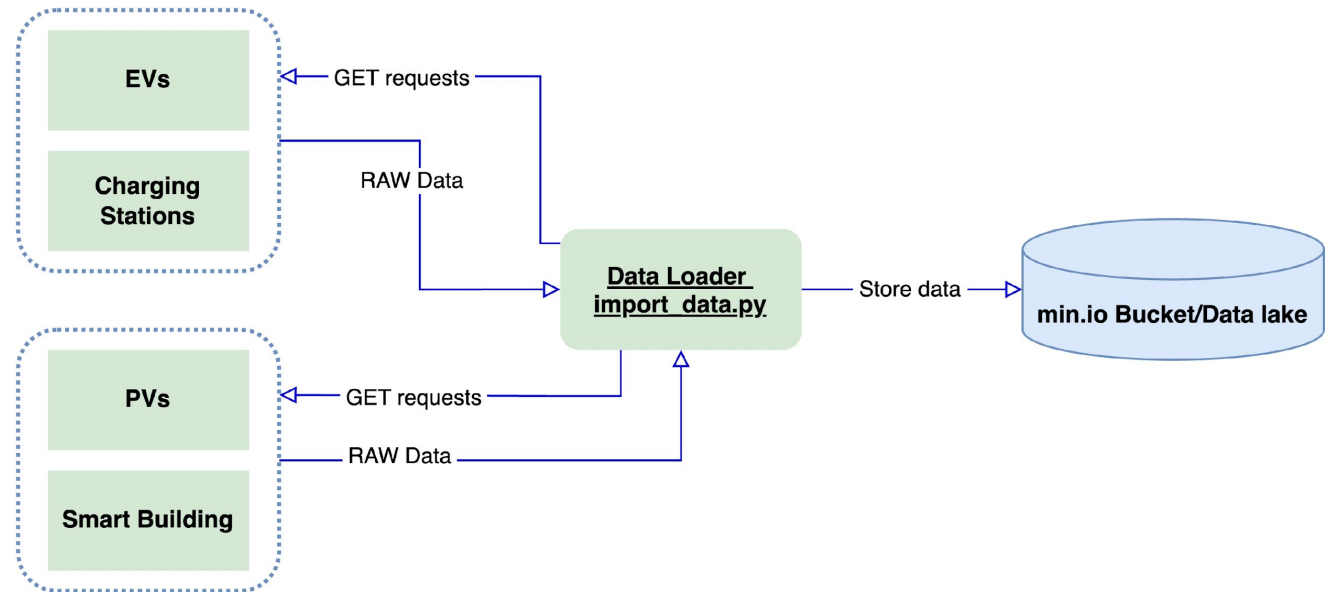


- Eros4NRG MVP contains 4 modules:
 - Data gathering module
 - Data processing module
 - Data visualization module
 - Data Catalogue module

Data Gathering Module



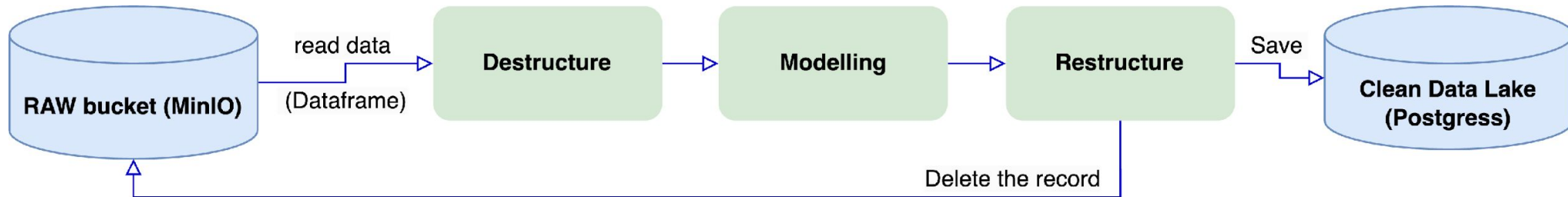
- Eros4NRG collects data from EMOTION and ASM Terni about solar panels and electric vehicles energy production and consumption
- The collected data is stored in the raw data bucket (MinIO)



Data Pre-Processing Module



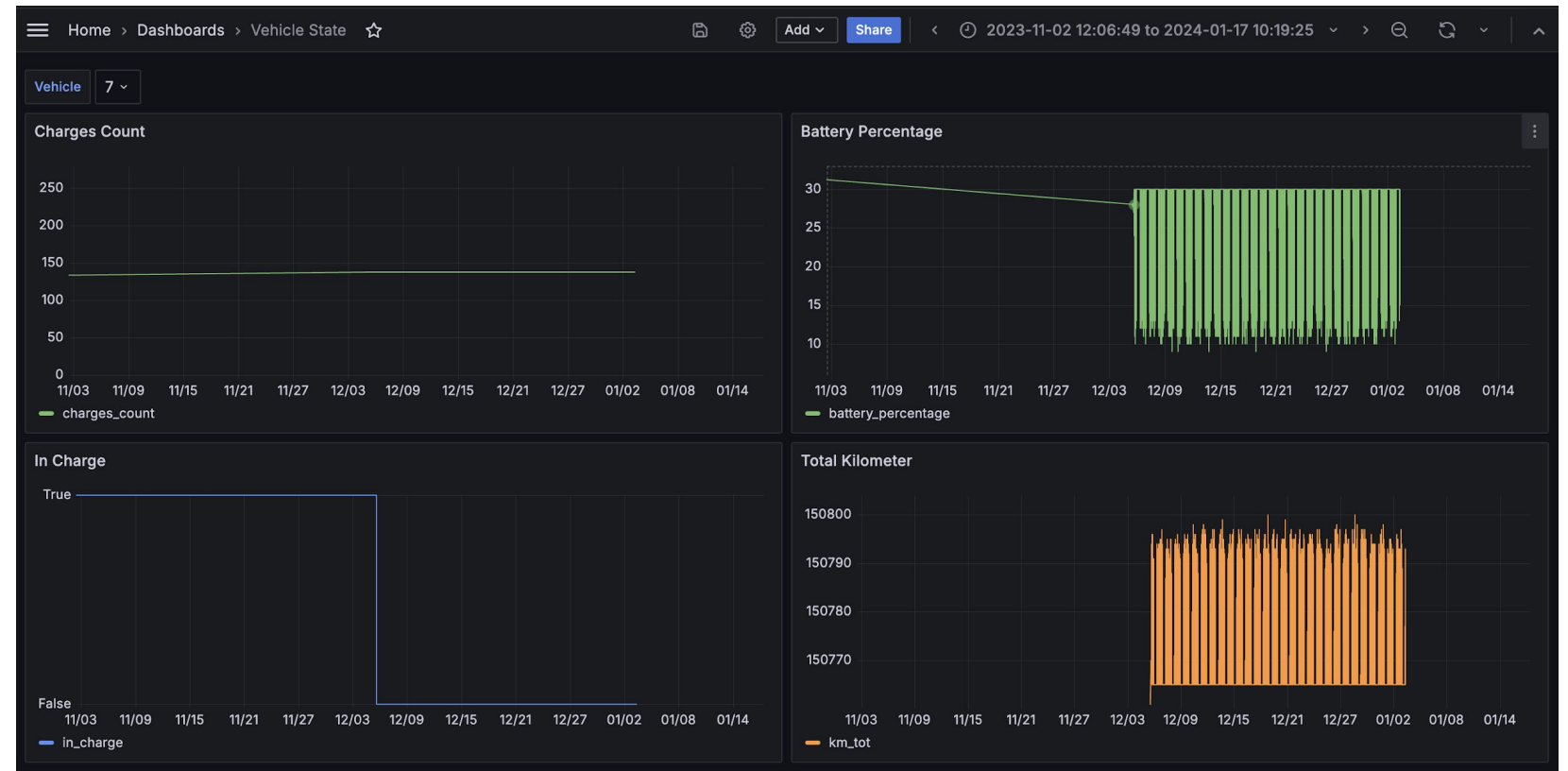
- Raw data is moved to the clean data bucket after pre-processing it
- After successful data storage in the clean bucket is it is removed from the raw data bucket.



Data Visualization Module

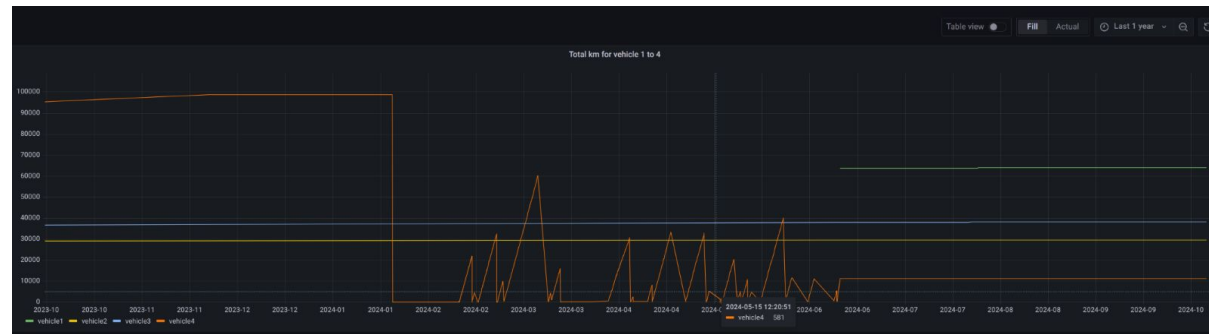


- Intuitive way to visualize and interact with data
- Make informed decision

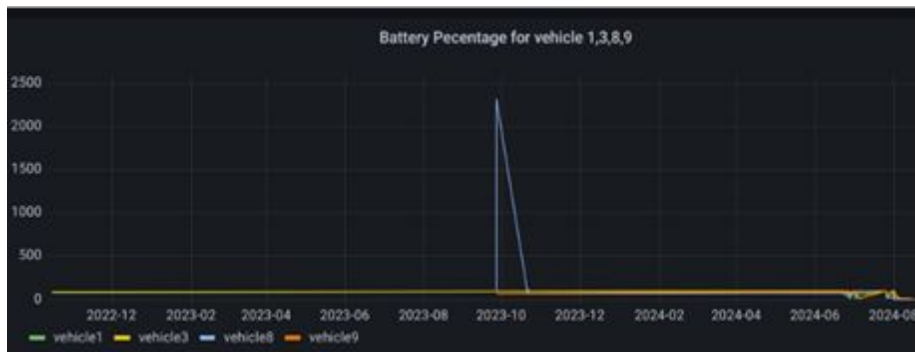




Visualize information regarding specific subject (i.e. specific vehicle)



Look at usage trends over a certain timespan

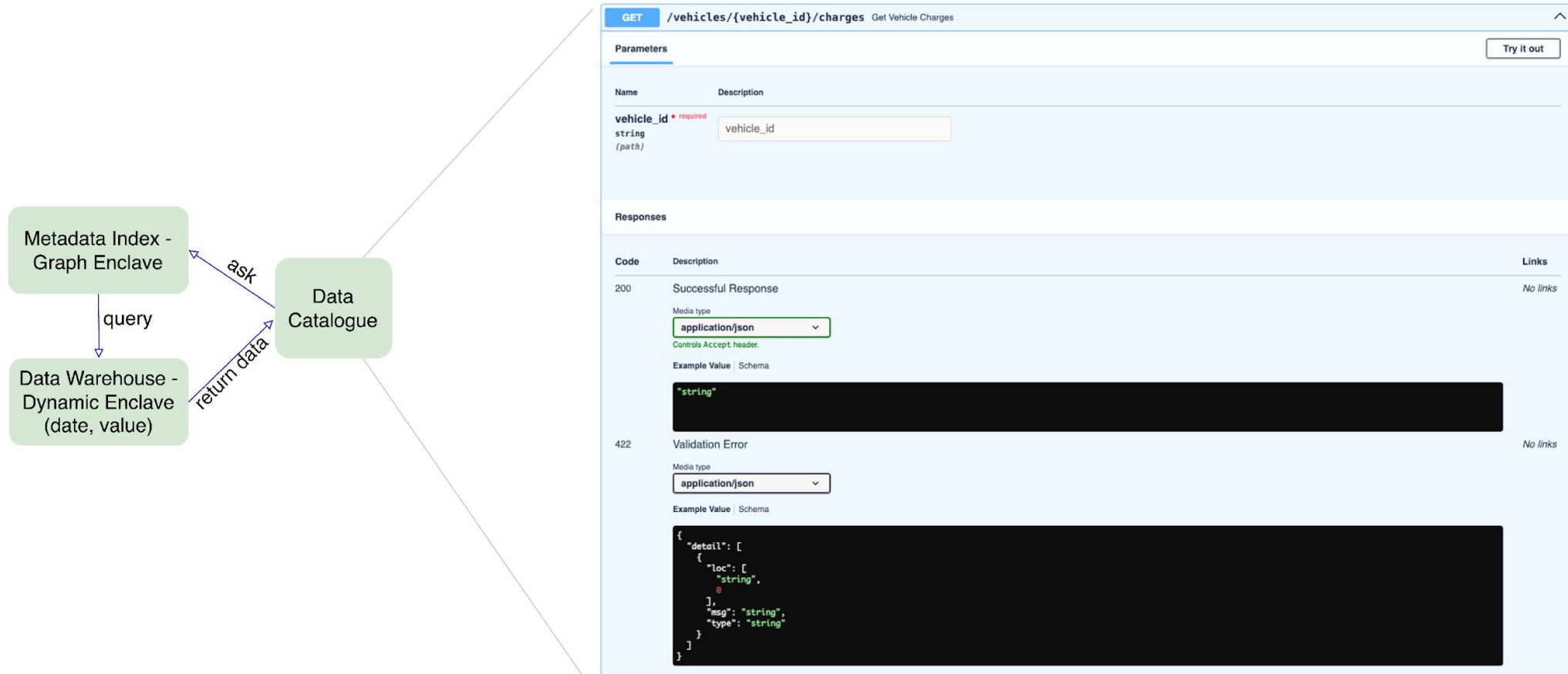


Find potential data anomaly

Data Catalogue Module



- Query specific data points



Next Steps

Several enhancements and additions are planned for the current implementation. These include:

1. Integrating an AI module for predictive data analysis
2. Implementing a zero-trust security module
3. Enhancing the dashboard to provide a richer user experience
4. Improving the data cleaning module

Eros4NRG Code Repository



<https://github.com/Eros4NRG/>

The image shows two screenshots of the Eros4NRG GitHub repository. The left screenshot displays the repository's main page, which is currently under construction. It features a sidebar with navigation links for Code, Issues, Pull requests, Actions, Projects, Security, Insights, and Settings. The main content area shows the repository name "Eros4NRG" and a search bar. Below this, there's a section for "data_pipelines" with a list of branches and tags. The "README" section is visible, stating "UNDER CONSTRUCTION" and providing instructions on how to run the repository. The right screenshot shows the "Eros4NRG D2 Importer/Exporter" project page. It features a backlog view with tasks categorized by status: Backlog (0/5), Ready (0/0), In progress (0/3), In review (5/5), and Done (4/4). Each task includes a title, a description, and a progress indicator.

Eros4NRG Team



- Albert Seubers - Project Manager
- Amjad Majid - Technical Manager
- Panagiotis Kapsalis - Software Engineer
- Favian Gozali - Software Engineer
- Aletta D'Cruz - D&C Specialist



Thanks for your attention