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Project LUCID – Proposal for collaboration

Aim of the project

The project "Data Intelligence for Cities and Urban Logistics" (LUCID) aims to address significant challenges in urban logistics, such as **congestion, inefficient route planning**, and **the limited availability of loading and unloading spaces**. These issues often lead to delays, increased operational costs, and environmental impact due to increased fuel consumption and emissions. The project proposes to solve these problems by developing an integrated **platform** that **centralizes and analyses data** from multiple sources, enhancing logistics planning and operations through better **visualization, analysis, and prediction of urban logistics data.** This solution will help reduce planning times, lower costs, and improve incident response in urban environments.

Benefit for Logistic Companies

The project solves several critical problems for logistic companies in urban environments:

1. **Inefficient Route Planning**: By integrating and analysing data from multiple sources, the project helps logistic companies **optimize their route planning, reducing delays and minimizing unnecessary travel**. This leads to more efficient operations and significant cost savings.
2. **Congestion and Limited Space**: The platform aims to address issues related to urban congestion and **the scarcity of loading and unloading zones**, which are major pain points for logistic operations in cities.
3. **High Operational Costs**: By improving route efficiency and planning accuracy, the platform **reduces fuel consumption and other operational expenses,** which directly impacts the bottom line for logistic companies.
4. **Data Accessibility and Integration**: Logistic companies often struggle with **accessing** and integrating relevant city and **traffic data** into their systems. The project's platform centralizes this information, making it more accessible and usable for real-time decision-making.
5. **Incident Response**: Enhanced data analytics and predictive capabilities of the platform enable better anticipation and **management of logistics-related incidents**, improving overall service reliability and customer satisfaction.

Output

The LUCID platform will be designed as a comprehensive **data intelligence solution** for enhancing urban logistics operations. It integrates and analyzes data from various sources, including city traffic, logistics operators, and other relevant entities. Here's a brief overview of its main features and capabilities:

1. **Data Integration**: The platform centralizes data from public and private sources using **APIs and connectors**. This includes real-time traffic information, loading and unloading space availability, weather conditions, and logistics operational data.
2. **Visualization and Analysis**: It offers tools for visualizing complex logistics data, making it easier for users to understand and analyze patterns, trends, and anomalies in urban logistics.

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3. **Predictive Analytics**: Utilizing advanced algorithms, the platform provides predictive insights that help logistics companies anticipate potential delays or disruptions and plan their routes more effectively.
4. **Real-Time Decision Making**: By providing access to up-to-date and comprehensive data, the platform supports real-time decision-making, helping to optimize routes, reduce congestion, and lower operational costs.

The output platform will upgrade an existing solution: https://www.arais.io/.

What data will be needed from the logistic companies

Route Data: Detailed data on the routes typically used by logistics vehicles, including start and end points, route preferences, and historical route performance.

Loading and Unloading Data: Specifics on loading and unloading zones used by the operators, including locations, availability times, and usage constraints.

Incident and Delay Reports: Data on historical incidents or delays encountered on routes, including the causes of these disruptions (traffic, accidents, weather conditions).

Real-Time Traffic Data: For efficient planning, it would also be useful to have anonymized vehicle traffic data so that additional layers can be applied in real-time. With historical data, unfortunately, it will be predictions that will have to be back-tested again (e.g. weather effects, customer preferences over time, etc.).

What other data will be used as inputs

Infrastructure & Road Data: Basic data on urban transport infrastructure including data on historical incidents or delays encountered on routes, including the causes of these disruptions (traffic, accidents, weather conditions).

Climate Data: Data from weather stations

GIS Social Data: Anonymised data from mobile operators on the movement of people

Commercial Shops + Services Data: Data on the location of facilities, shops, services for effective planning of logistics parking places

Project consortium

The LUCID project consortium is implemented by the partner below:

- **Citet** (Spain): Serves as the project coordinator and promotes technological advancements in logistics and transport.
- **MOVEN** (Spain): A leader in data platforms for urban mobility, focusing on innovative data integration and analytics.
- **PowerHUB** (Czech Republic): Enhances the project with its expertise in technology transfer and sustainable technologies, overseeing pilot in Prague.
- **Citylogin Iberica S.L.** (Spain): Specializes in sustainable last-mile delivery solutions, contributing to pilot tests, ensuring pilot in Madrid.
- **Mestska Cast Praha 7** (Czech Republic): Participates in pilot testing to optimize urban logistics in Prague.
- **Las Rozasv Innova** (Spain): Supports pilot testing and represents the public innovation sector of Las Rozas municipality.