

BRIDGING INNOVATION: INTEGRATED, SAFE AND SEAMLESS MOBILITY

its

EUROPEAN
CONGRESS
ISTANBUL
27-29 APRIL 2026

ESCALATE Innovative Digital Tools

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ESCALATE & NEXTE-TRUCK JOINT EVENT

ISTANBUL 2026



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How can we accelerate the adoption of zHDVs through digitalisation?

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ESCALATE: DIGITAL TOOLS



GreenFleetTCO: The Future of Cost Intelligence

02



PdMotive: AI-Driven Health Estimation for Battery and Fuel Cell Trucks

04



ZeroPath: Range Estimation for Zero-Emission Trucks

06



TwinSphere: Plug-and-Play Secure Digital Twin for Zero-Emission Commercial Vehicles and Fleets

01



EcoDyna: Dynamic LCA for Sustainable Freight

03



FlexiPack: Reconfigurable, Compact and Stackable Battery Architecture Tailored for Mission

05



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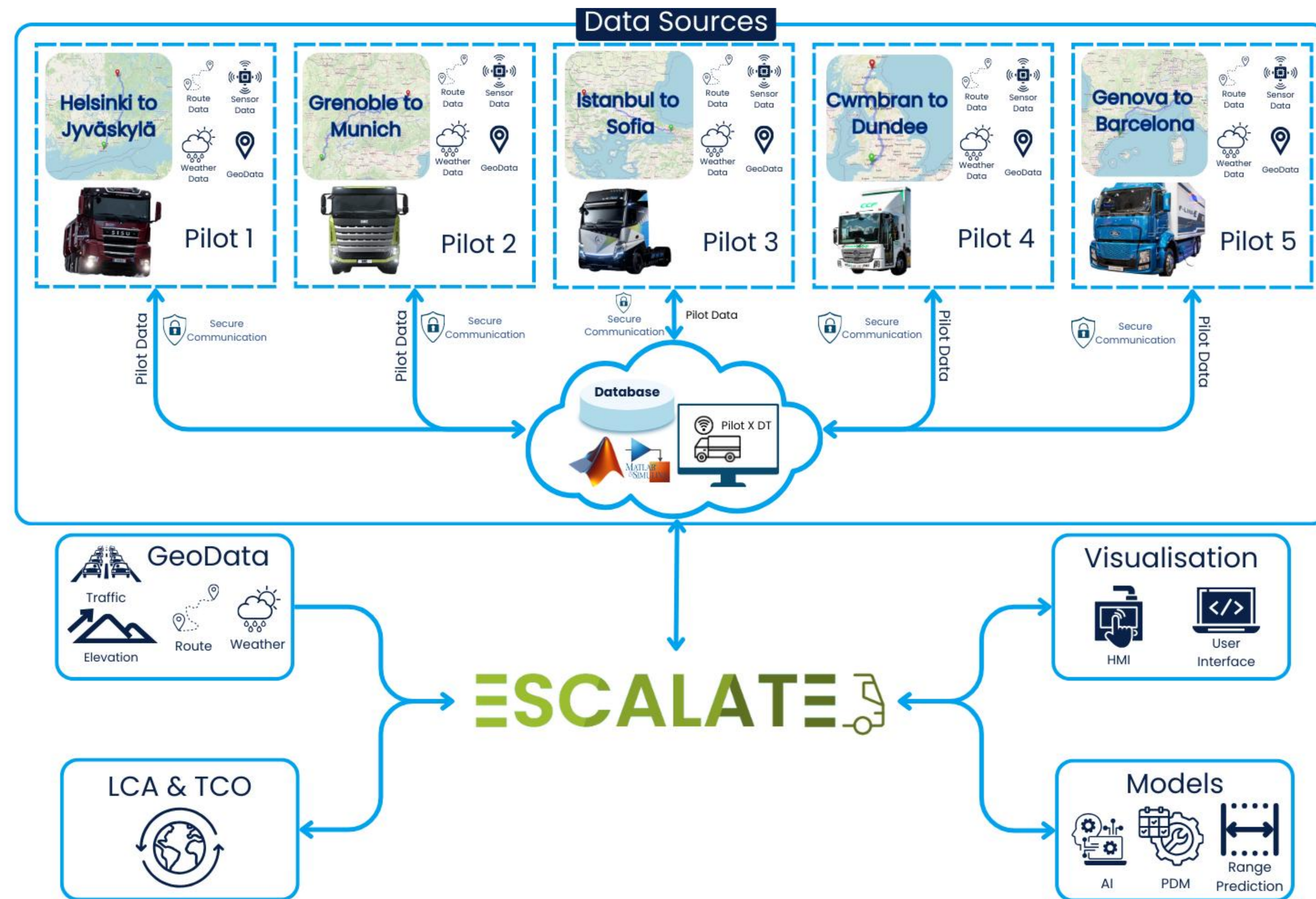
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ESCALATE: DATA & Sustainable XAI



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“DIGITAL TWIN”



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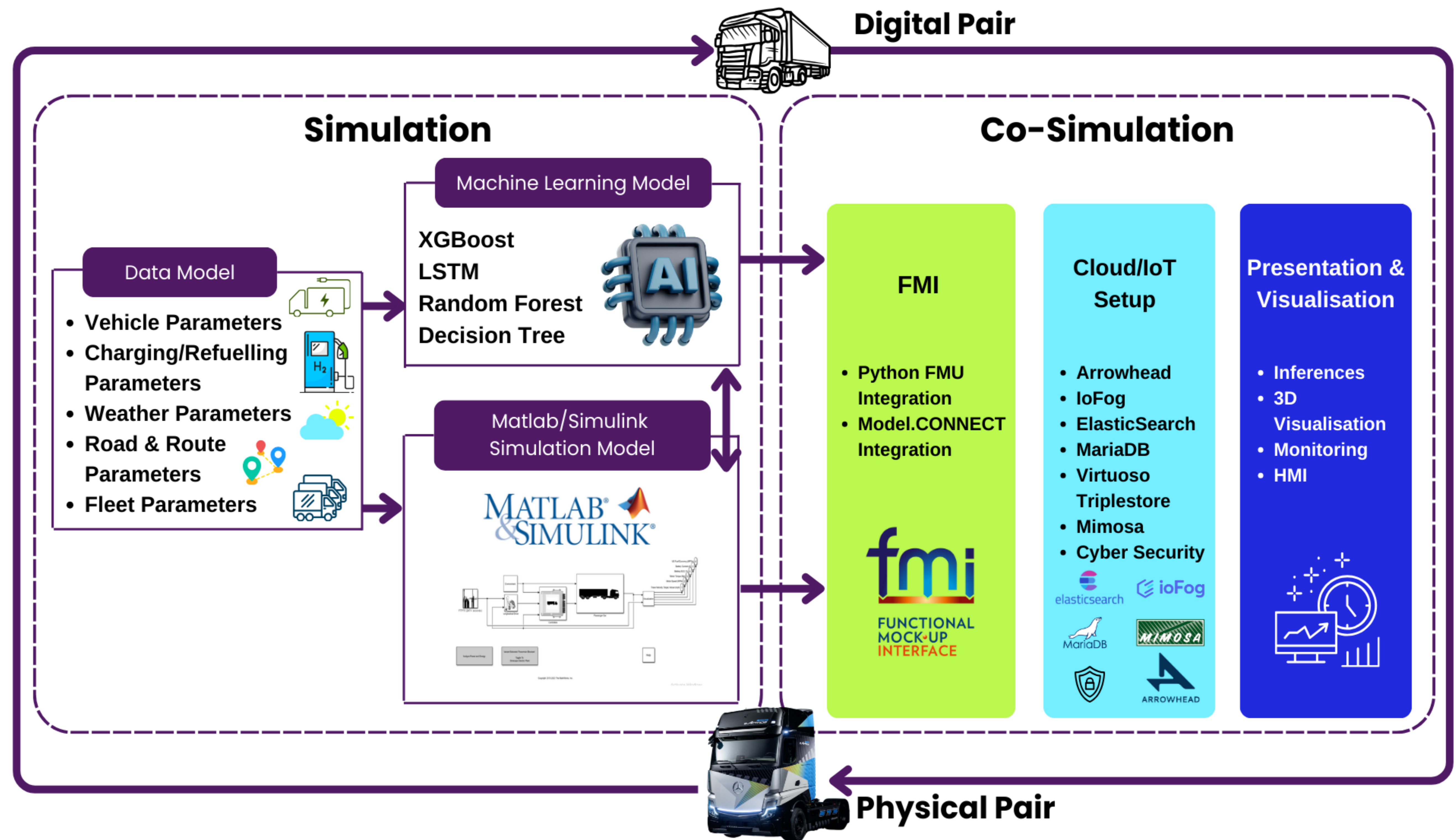
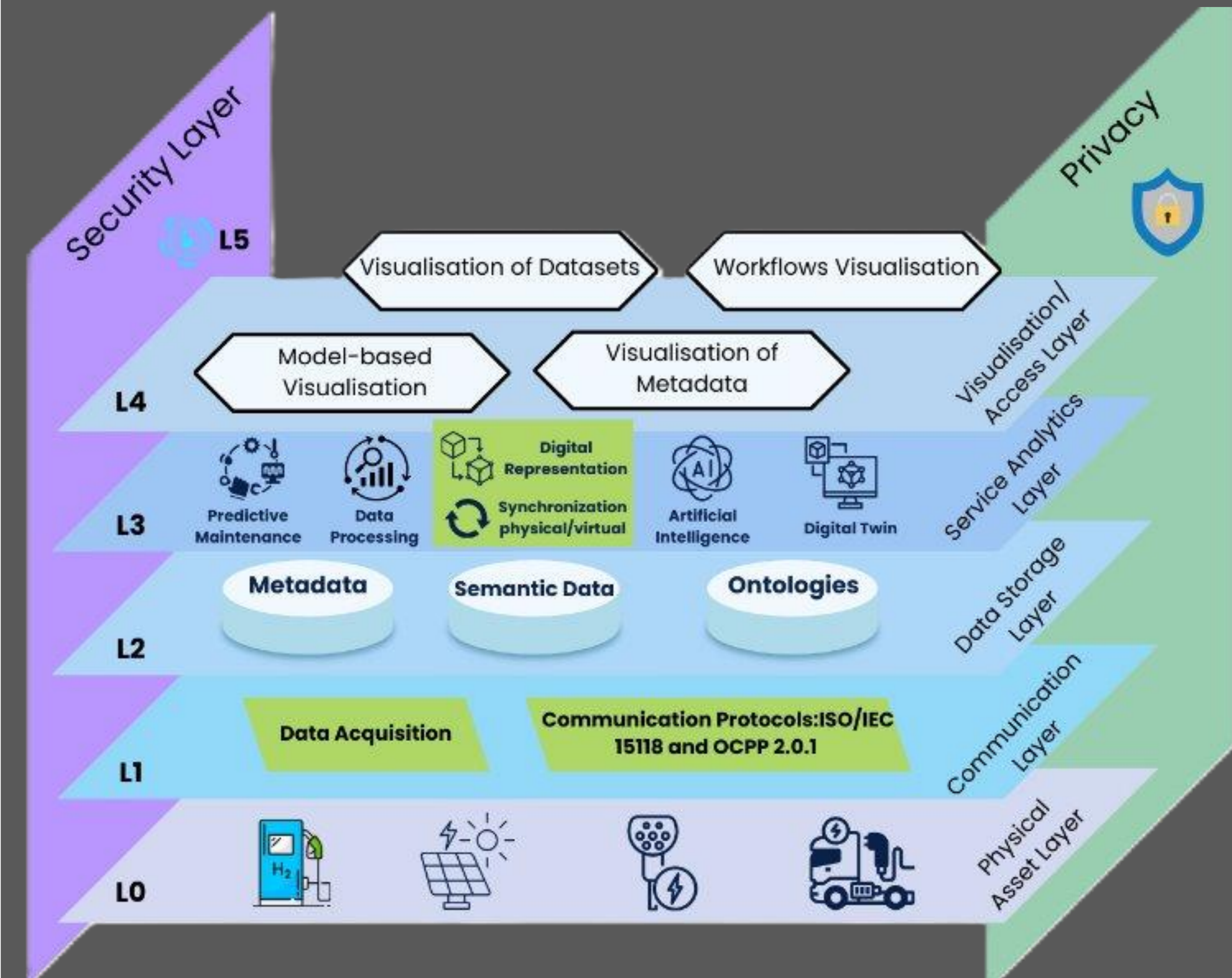
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DIGITAL TWIN



Uniqueness & Impact

- Physical-Digital Pairing of ESCALATE zHDVs
- AI-powered simulation and prediction
- Co-simulation with Matlab/Simulink and FMI tools

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“Fleet Management Tool”



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FLEET MANAGEMENT TOOL



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Impact

- AI-based route optimisation for efficient operations
- Real-time monitoring of vehicle, route, and fleet status
- Improves fleet availability, reliability, and asset utilisation

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“Predictive Maintenance”



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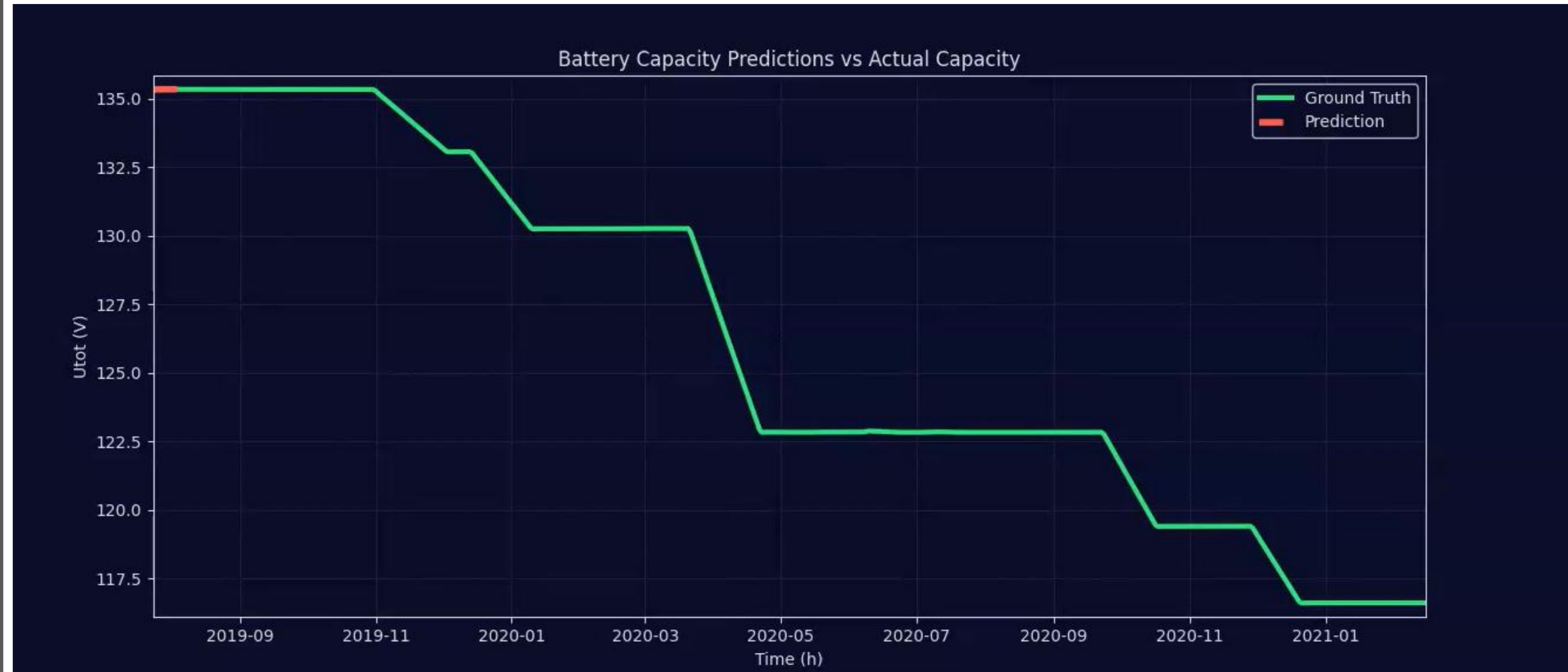
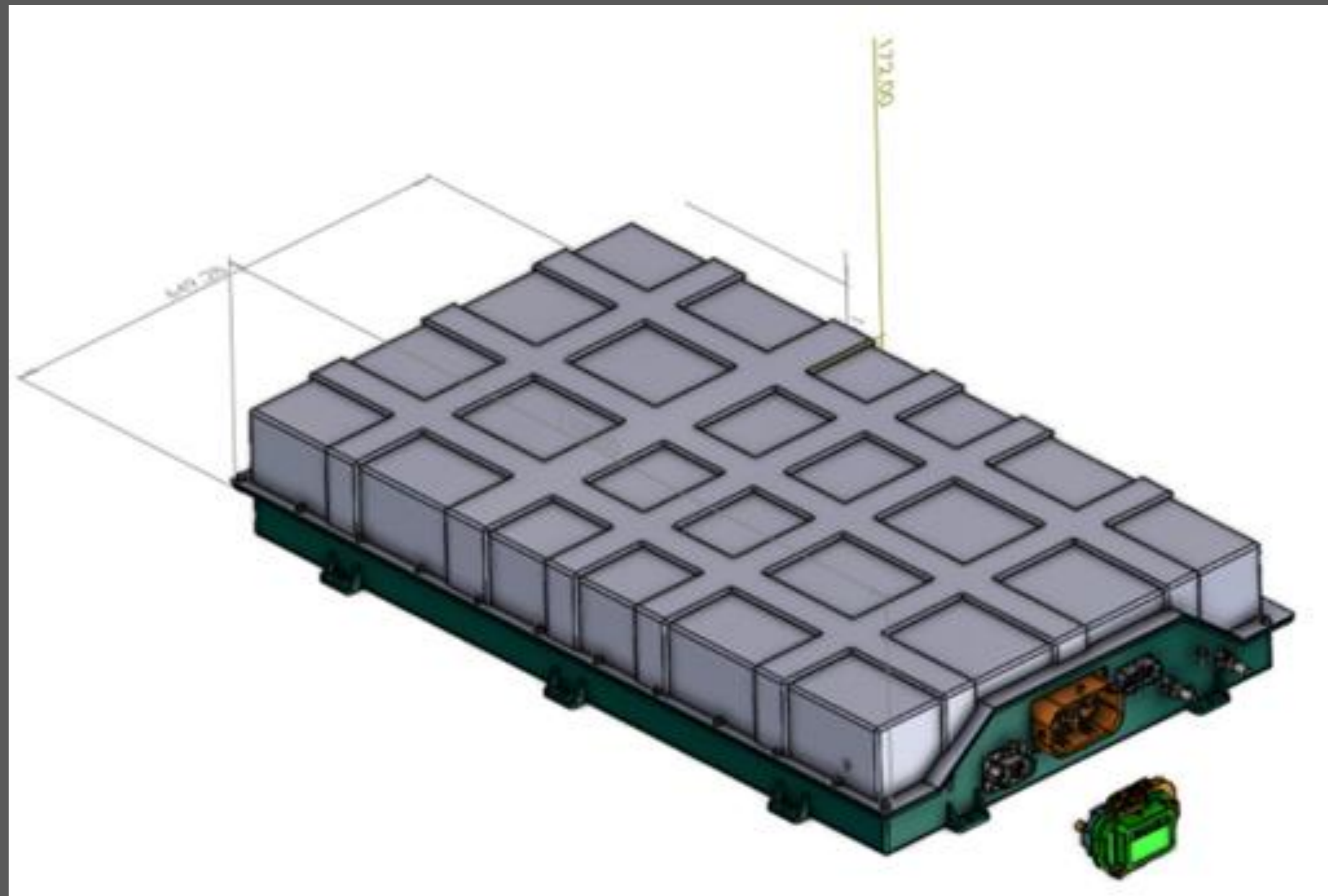
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Predictive Maintenance



Innovation

- AI-powered predictive maintenance algorithms for long term forecasting of RUL
- XAI-enabled decision making
- Synthetic-enabled training for improved accuracy

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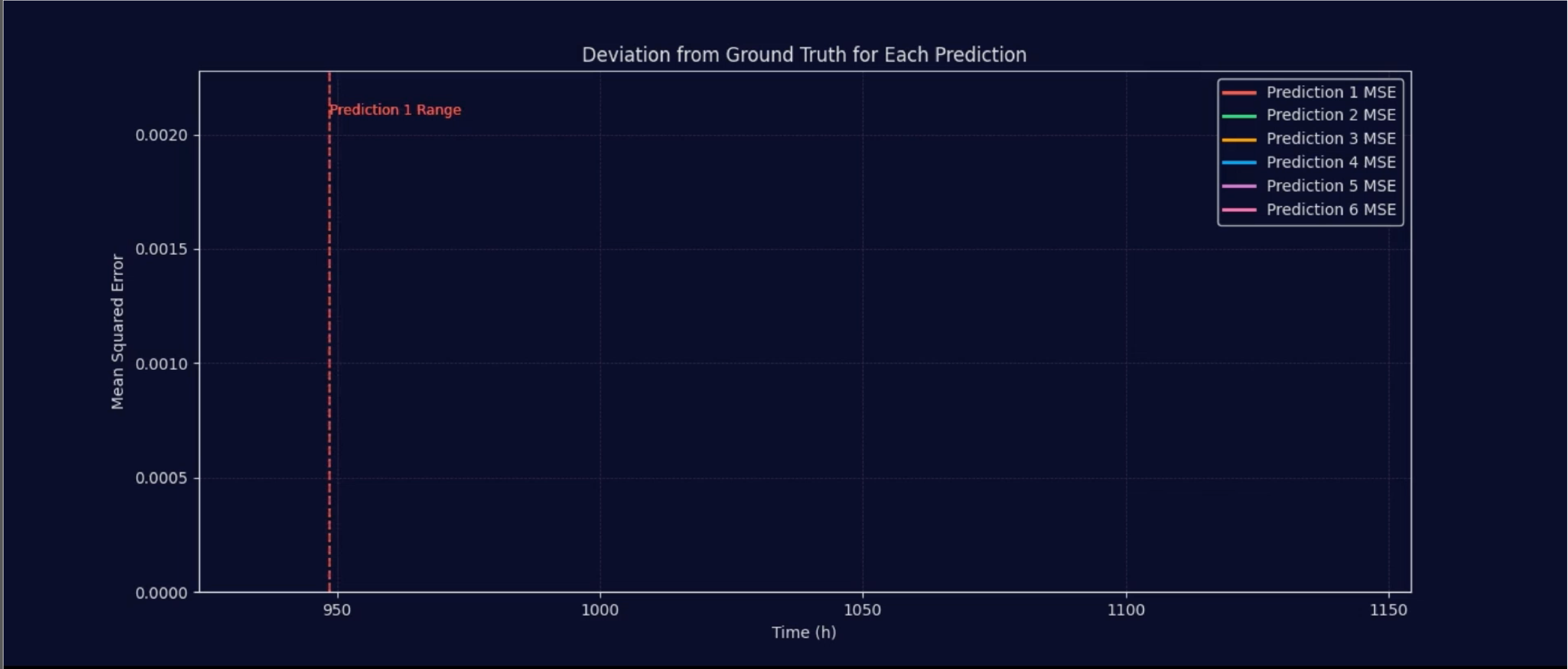
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Predictive Maintenance



Innovation

- AI-powered predictive maintenance algorithms for long term forecasting of RUL
- XAI-enabled decision making
- Physics-informed Hybrid Models

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“Total Cost of Ownership”



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TCO & TCOL



Innovation

- Comparison of zHDVs and conventional alternatives
- Supports route, fleet, and operational cost optimisation
- Enables affordable transition to zero-emission freight

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“Fluid HMI”



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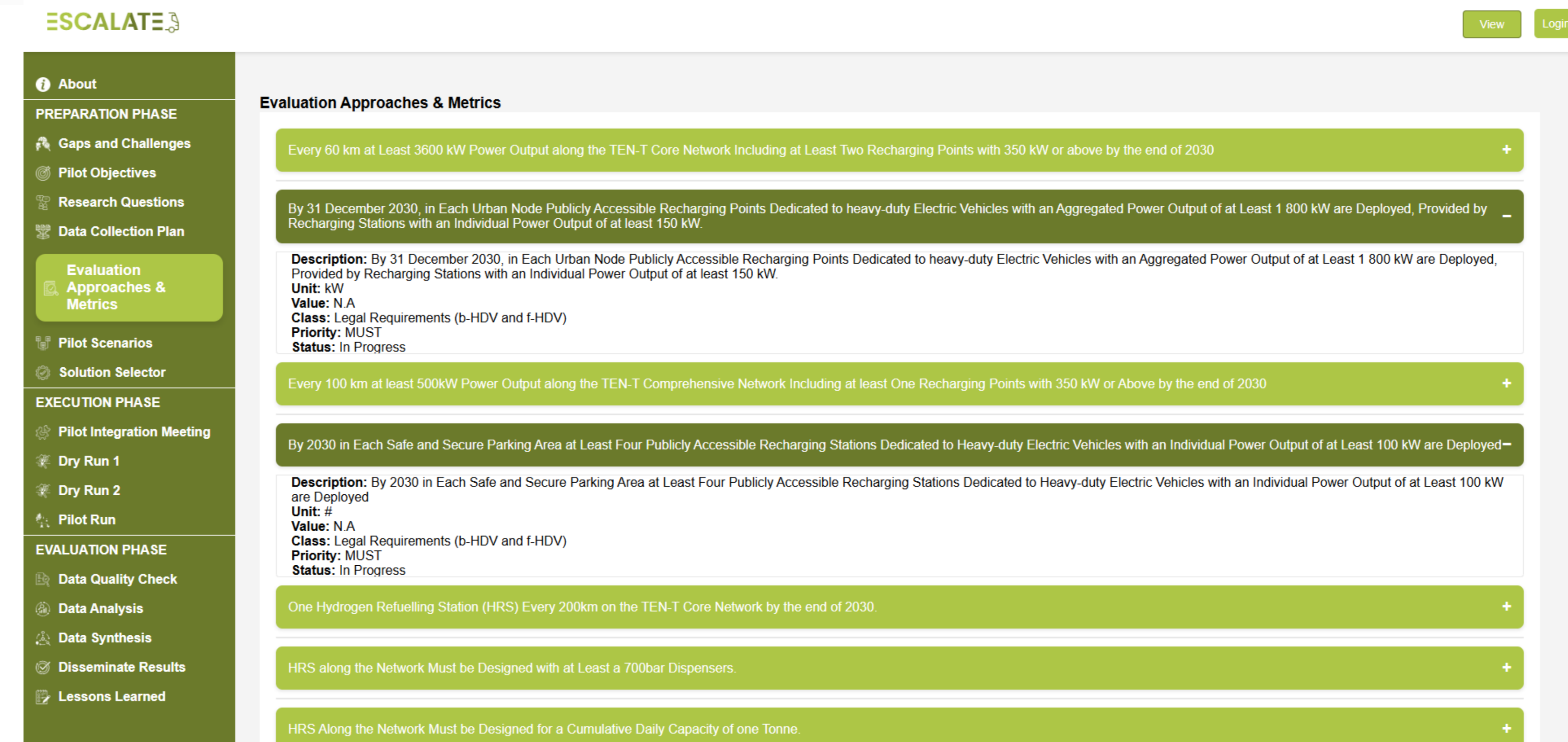
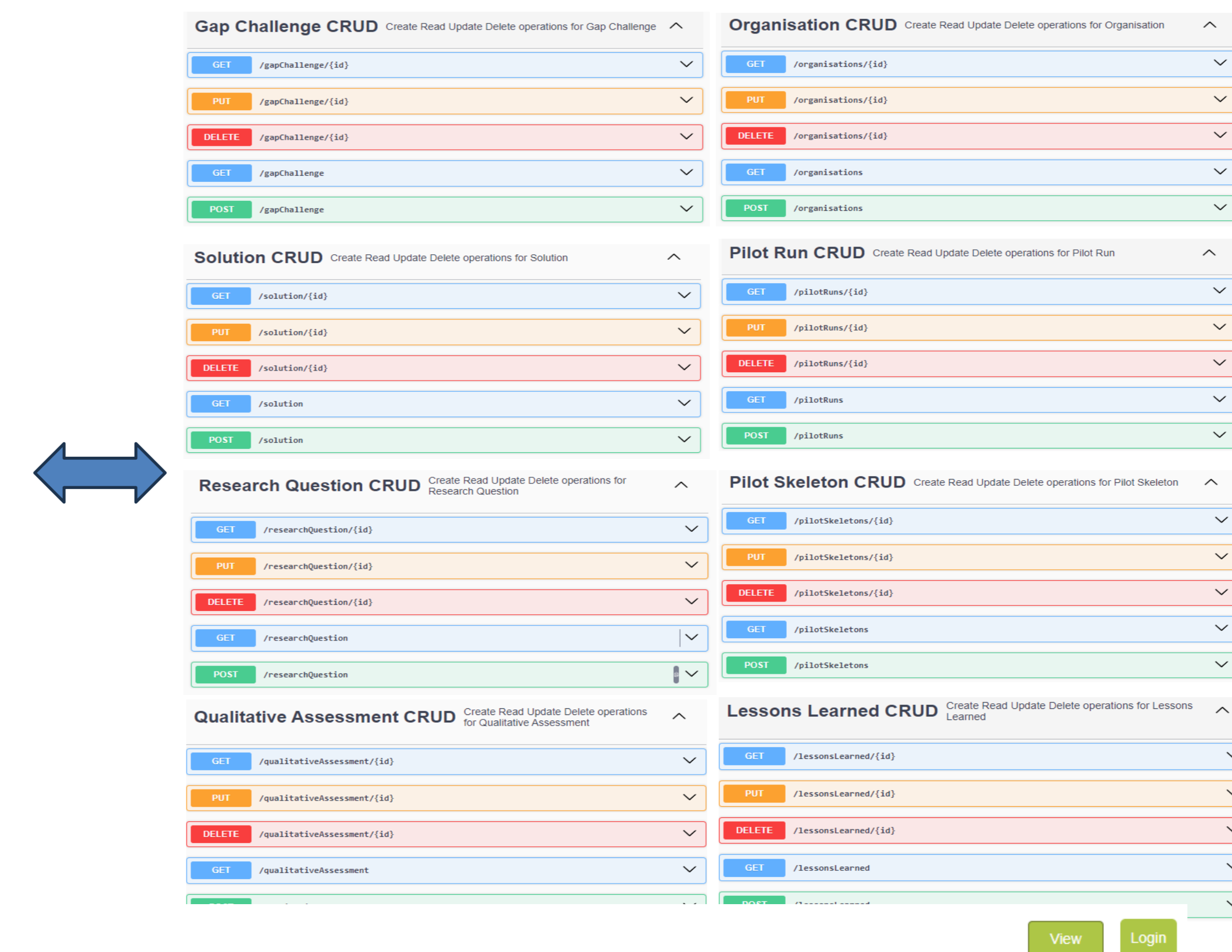
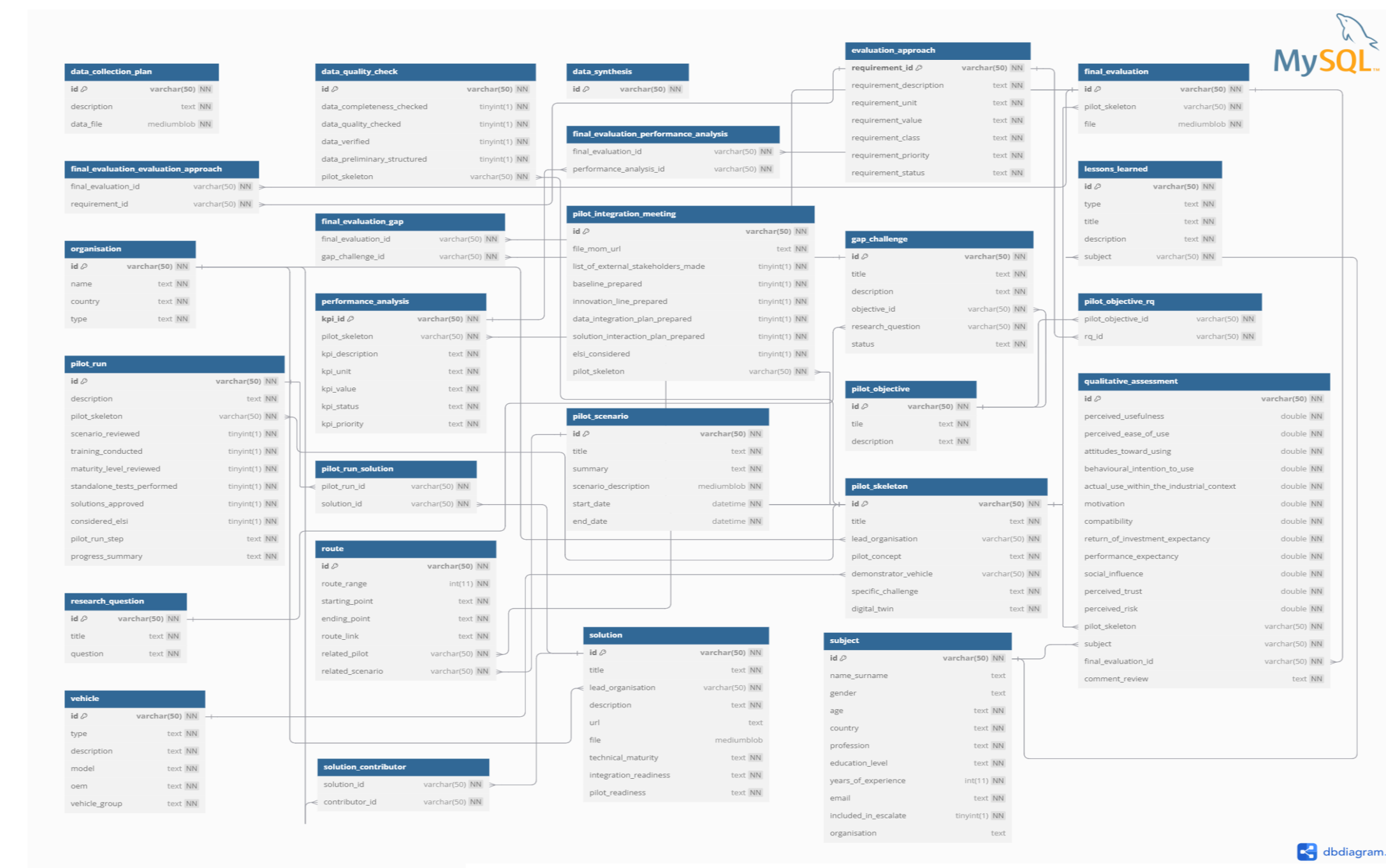
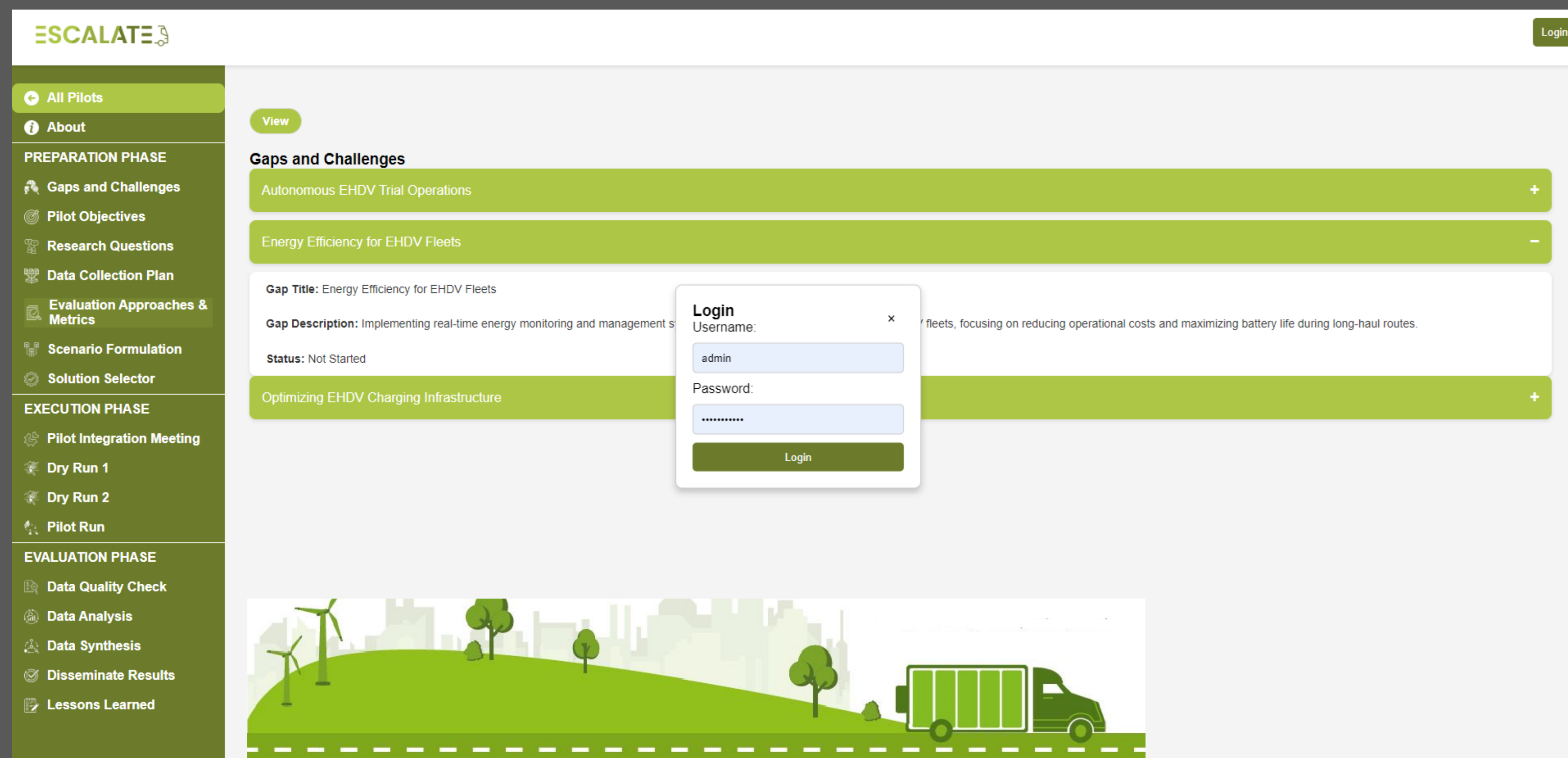


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Impact

- Structured framework for planning and executing real-world trials
- Links vehicle performance with operational and infrastructure needs

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THANK YOU!



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