

# Typhon H2020

## **An Evaluation Framework using Telco Data**

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The aim of TYPHON is to provide an *industry-validated* methodology and integrated technical offering for **designing, developing, querying, evolving, analyzing and monitoring** scalable *hybrid data persistence architectures* that will meet the growing scalability and heterogeneity requirements of European industry, which drives the project through four use cases from the domains of *automotive, earth observation, banking, and telecom.*



Typhon project is funded by the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No. 780251.

# Project Partners



Smart Connected Vehicles Data Services



Earth Observation Data Management



Hybrid Bank Data Warehousing



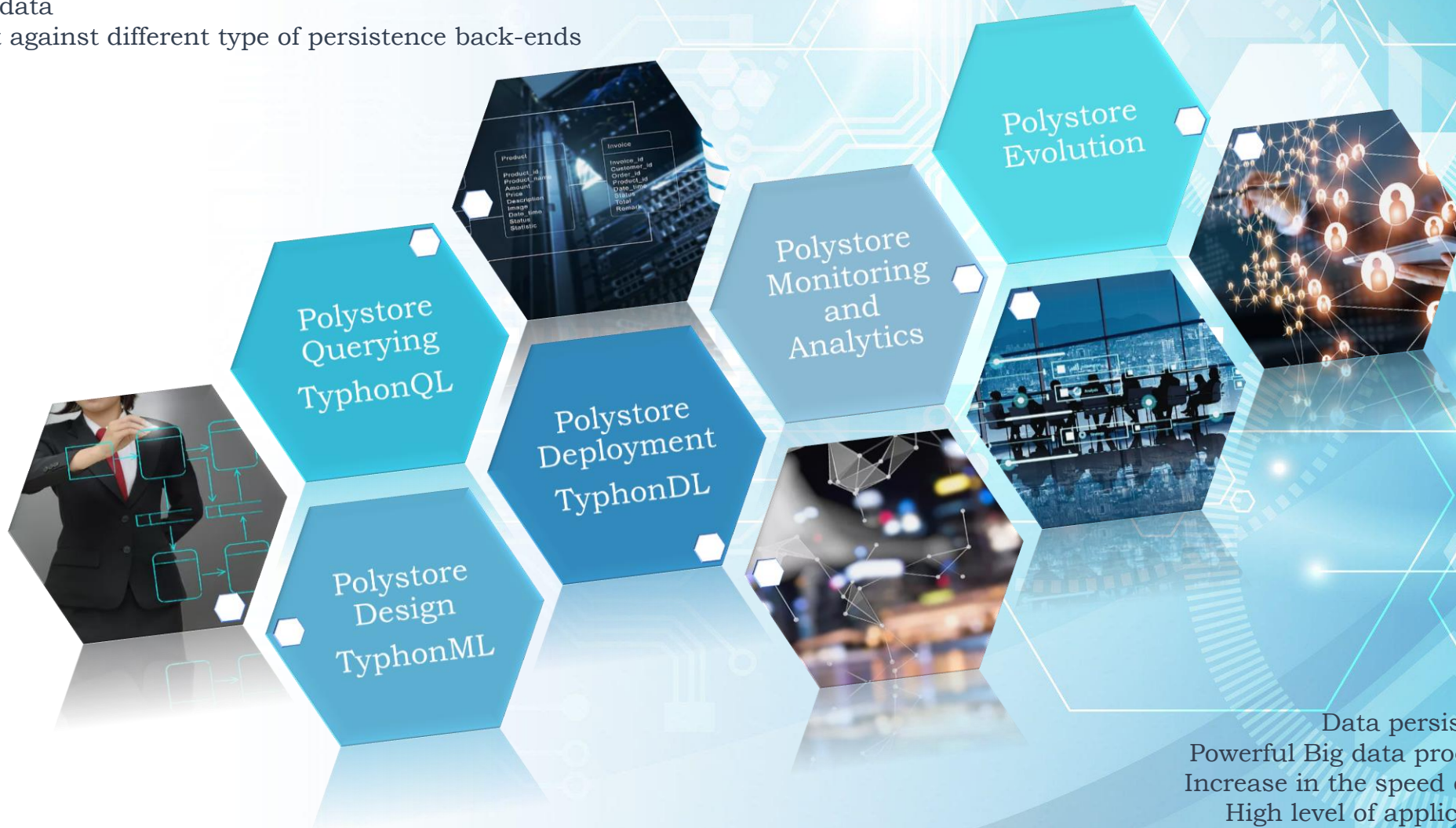
Telecommunications

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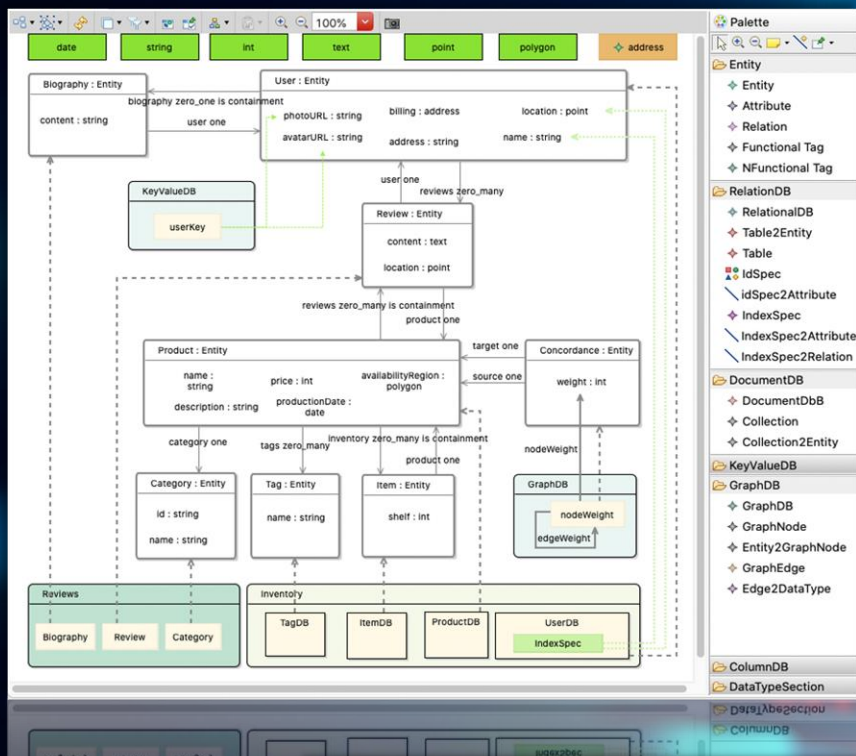
# Hybrid Data Persistence Challenges & Innovations

Coherency of overall design  
Assembly & configuration of different components  
Overlapping data  
Development against different type of persistence back-ends



Data persistence technology - agnostic  
Powerful Big data processing tools for hybrid data  
Increase in the speed of data throughput & access  
High level of applicability in real-world settings





## Typhon Monitoring Interface

Schema Queries

Filtering period: ☒ complete history ☐ particular period

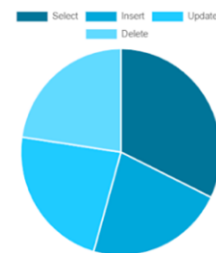
☐ Evolution over time

Typhon Schema

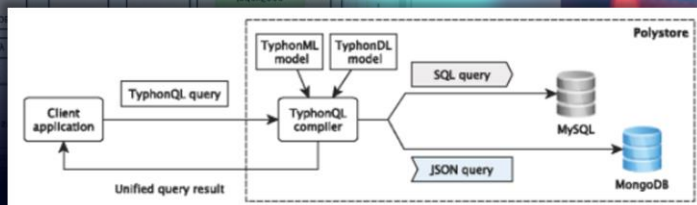
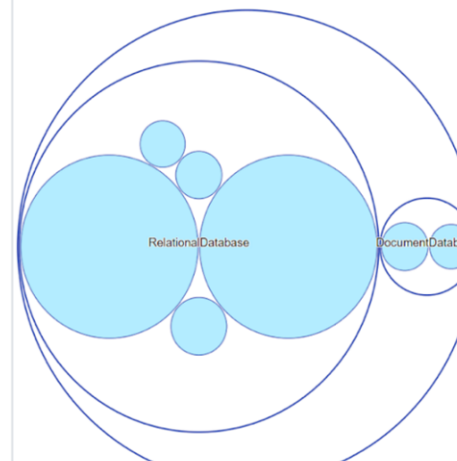
Entity size



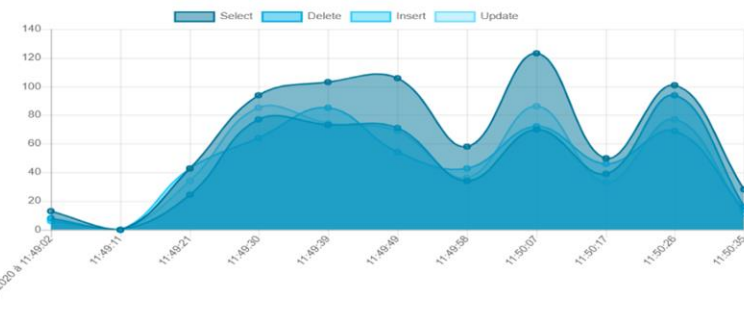
CRUD operation distribution



Proportion of queried entities



CRUD operation distribution over time



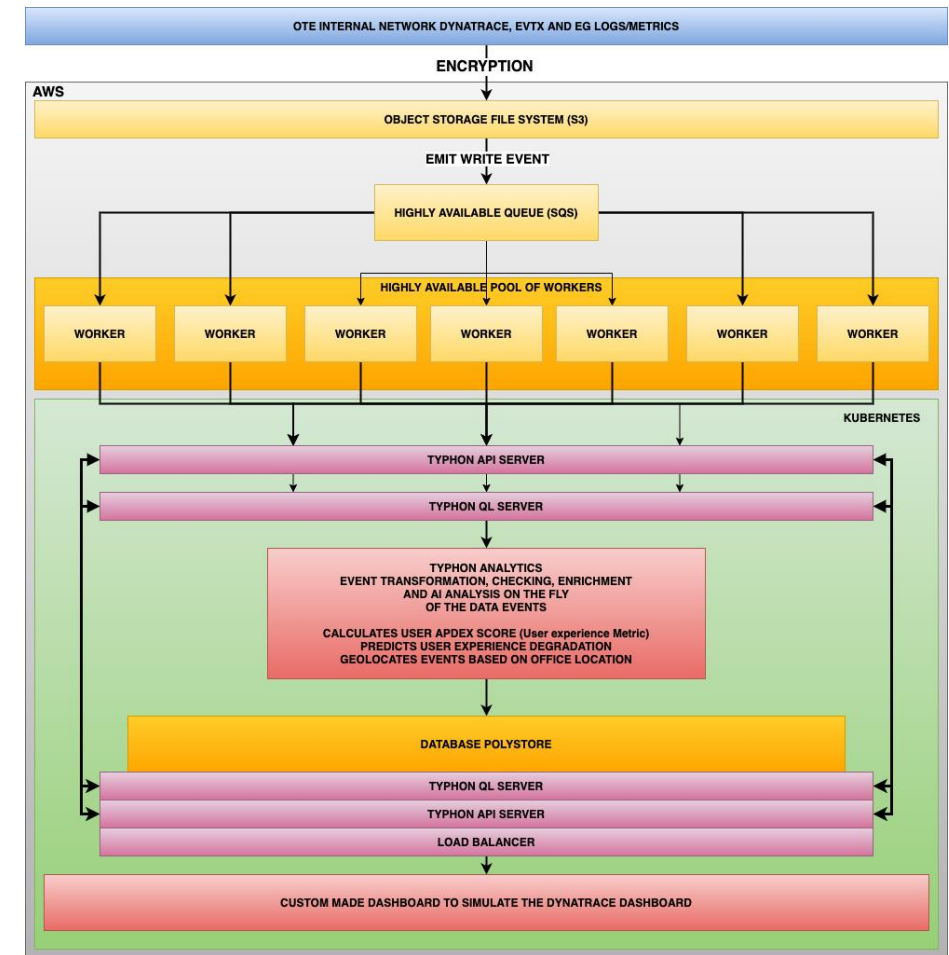
# Evaluating Typhon using Telco data

OTE will **evaluate** the TYPHON technologies in the context of the telecom predictive maintenance use case, and **assess** the level of achievement with respect to the applicable target measures established for the project.

Scenario 1 – *Descriptive Analysis of User Experience* via Apdex scoring calculation, metrics related to user session duration and response times.

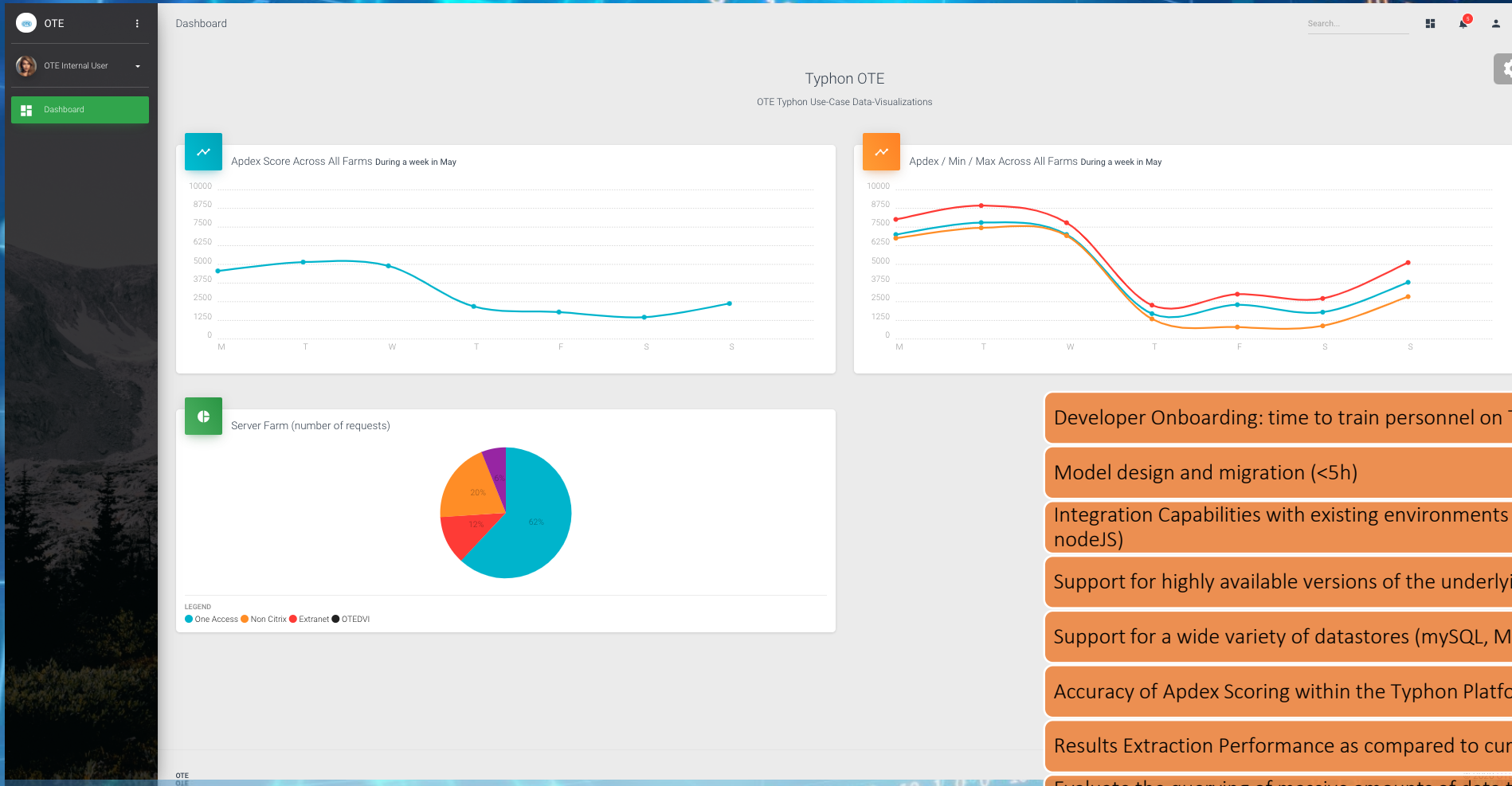
Scenario 2 – *Data Preparation and Annotation as a Platform*; i.e. to amend and filter live data streaming using Apache Flink within the Typhon Analytics Component

Scenario 3 – *Machine Learning Tasks*; i.e., to evaluate the querying of massive amounts of data to use as the training set of a Machine Learning Prediction Model





# QoS Evaluation Measures



Developer Onboarding: time to train personnel on TyphonML, TyphonDL & TyphonQL (<5d)

Model design and migration (<5h)

Integration Capabilities with existing environments and programming languages (Java, Python, nodeJS)

Support for highly available versions of the underlying database structures

Support for a wide variety of datastores (mysql, MongoDB are supported)

Accuracy of Apdex Scoring within the Typhon Platform (.80 – .90)

Results Extraction Performance as compared to currently used systems

Evaluate the querying of massive amounts of data to use as the training set of a ML Prediction Model

Cost of maintenance of a Typhon deployment

Which parts of currently running systems and infrastructure would be replaced/eliminated



Thank you for your attention