

# REACH

NEXT GENERATION DATA INCUBATOR

## EXPLORE PHASE TECHNICAL SPECIFICATIONS

11/05/2023

### CORE PARTNERS



### DATA PROVIDERS

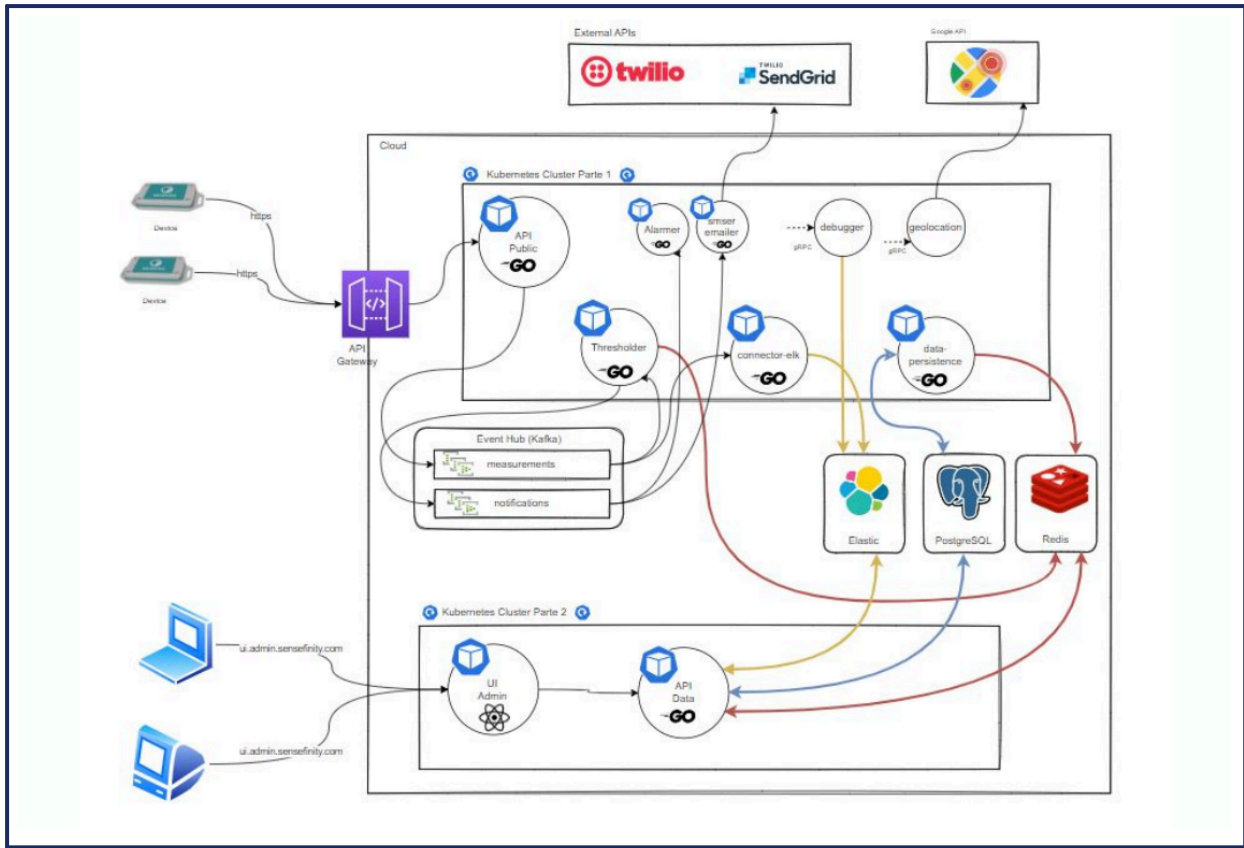


This project has received funding from the European Union's H2020 research and innovation programme under Grant Agreement no 951981



# 1. ANNEX I. Technical Specification Double-side Page

1. **TECHNICAL SCOPE:** The mock-up solution is suitable and correctly addresses the challenge/theme selected over the REACH dataset/s. The Big Data solution architecture proposed is adequate to tackle the data management issues associated to the solution in mind. “To what extent does the applications handle the data provided?”



2. **SELECTION OF ALGORITHMS AND TOOLS:** The indicated Data Science approach, i.e. algorithms chosen, and Big Data architecture approach, i.e. tools chosen may successfully accomplish the required data governance, processing and analysis. A clear understanding of the used REACH dataset/s is demonstrated.

The Big-data stack selected achieves scalability through Kafka, Redis and Kubernetes.

Applications run on microservices which are launched to integrate both IoT as well as other data-sources via API.

For static assets and threats an UI is presented as well as an API interface to interface with already existing risk management systems.

For mobile assets IoT devices can be incorporated to bring real-time visibility to available assets.

Data from other sources, e.g. from satellite can be incorporated via APIs to enrich risk projection with sensor data from space.

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3. **TECHNICAL SCALABILITY AND FLEXIBILITY OF THE SOLUTION:** The solution can truly cope with humongous and increasing datasets, potentially from diverse data providers, and is flexible it to adapt to other related domains.

The system uses Kafka, Elasticsearch and Redis as basis for scalability. Microservices perform the analysis and business logic. Integration-APIs are used to integrate with adjacent systems.

4. **DATA GOVERNANCE AND LEGAL COMPLIANCE:** Data sharing challenges, data governance and legal compliance, must be observed. The proposed solution is compliant with the current data legislations concerning security and privacy (e.g. GDPR).

The system doesn't collect user-based data.  
Servers are hosted in Europe.

5. **QUALITY ASSURANCE AND RISK MANAGEMENT:** Feasible and credible quality process followed for the final product generation. The potential risks in all the phases of the project (design of the solution, development, testing, deployment...) are identified and convincing mitigation plans put in place.

The development approach will follow SCRUM as development process. The development will have several sprints with sprint demo to demonstrate the development evolution to stakeholders and to detect problems at the earliest stage possible enabling fast feedback and response from key stakeholders.

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