

A Software Architecture for Extreme-ScaLe
Big-Data AnalyticS in Fog CompuTIng Ecosystems

Project Overview



Overview

E L A C T I C

A Software Architecture for Extreme-ScaLe
Big-Data AnalyticS in Fog CompuTIng Ecosystems

Project information ELASTIC Grant agreement ID: 825473 Status Ongoing project Start date End date 1 December 2018 30 November 2021 Funded under: H2020-EU.2.1.1. Overall budget: € 5 920 581,25 **EU** contribution € 5 920 581,25 Coordinated by: **BARCELONA SUPERCOMPUTING CENTER-**CENTRO NACIONAL DE SUPERCOMPUTACION Spain



















THALES

Motivation





- In current systems, when data analytics computation is moved to the cloud:
 - the processing time and energy cost is reduced, but the performance of the system is adversely affected, making it impossible to derive real-time guarantees
 - the level of security required increases to minimize potential attacks, which may end up affecting the safety assurance levels

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 To develop a software architecture incorporating a new elasticity concept, that will enable smart systems to satisfy the performance requirements of extreme-scale analytics workloads



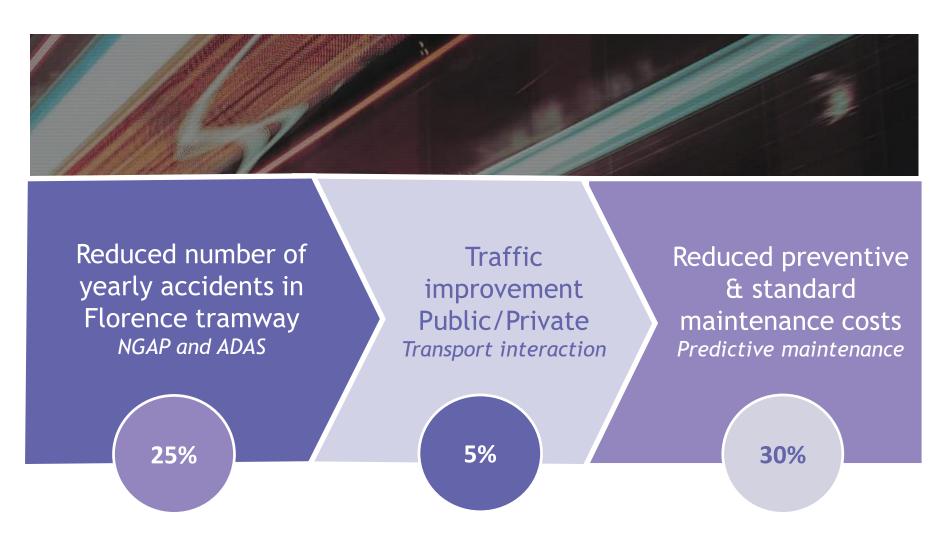
 To significantly increase the capabilities of the extreme-scale analytics by extending the elasticity concept across the compute continuum in a fog computing environment



 To consider a realistic yet visionary smart mobility use-case, which will elaborate of huge amounts of data coming from a large set of IoT sensors distributed along the Florence tramway network



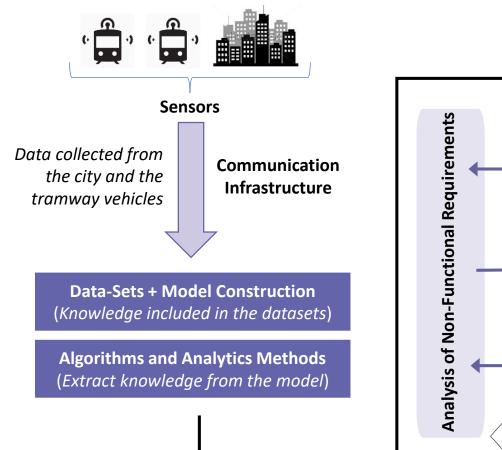


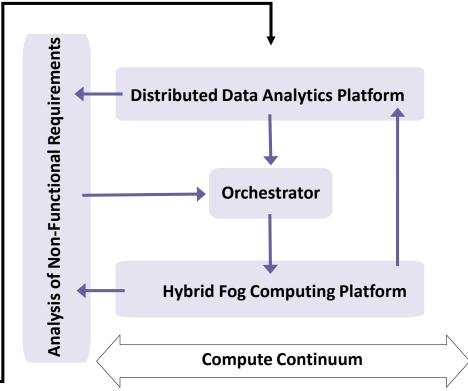


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Software Architecture





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- Smart mobility use-case in a real urban area in the tramway network of the City of Florence, Italy
 - Tram vehicles set up with V2X communication and various detectors
- Applications
 - Next Generation Autonomous Positioning (NGAP) and Advanced Driving Assistant System (ADAS) to detect obstacles
 - Interaction between the public and private transport to identify complications and improve local traffic regulation plans
 - Predictive maintenance to monitor the tramway operation in order to identify system failures in advance





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www.elastic-project.eu

Thank you

elastic-project@bsc.es

Stay tuned!





www.linkedin.com/company/elastic-project