

# Fleet Management. A telematics project.

## Challenge

Fleet management adds a level of complexity to fleet operations. There are also greater expectations for having complete visibility into operations and a streamlined way to prevent problems that might be occurring. Fleet Telematics provides fleet managers with better control and monitoring through real-time data gathering services on vehicles. This real-time data informs the fleet manager how effective and efficient their fleets are in supporting their operations.

One of the biggest challenges, however, is the variety of vehicle makes and models. Most manufacturers don't provide real-time information on the location or active sensors on a vehicle. For those that do, the data is provided in a way that is proprietary to the manufacturer. This is the same for operators who use 3rd party technology to manage their fleet and better understand their operations – the 3rd party provider (OEM) has its own methods for data collection and analysis and how it interacts with a vehicle.

Fleet telematics does not end with connecting to the vehicle. Once connected, the gateway must send data to a back-end provider. The back-end aggregates and analyses the data, presenting it as actionable information for fleet managers. The problem here is that it only provides raw information, usually without the context needed to make effective and efficient decisions around fleet management.

## Solution

The crucial part of this project was to develop a platform that would unify the fleet management services and make it easier for the customer. Effectively its aim was to overcome the challenges mentioned and act as the bridge between various providers and the customer's own system, with a unified way to collect and normalise the vehicles' data.

Further to this, the system collects the insights and data points relative to helping identify inefficiencies, mobility issues and other statistics relative to the customers fleet. This data could be mapped, graphed and show historical trends among many different benchmarks.

Having now provided context to the data, the solution is fully compliant with privacy laws, regulations, and of course, GDPR. For example, in some regions, organisations are prevented from tracking a vehicle when used for private usage or to use vehicle information for insight into employee behaviour. The solution is sensitive and accommodates these restrictions.

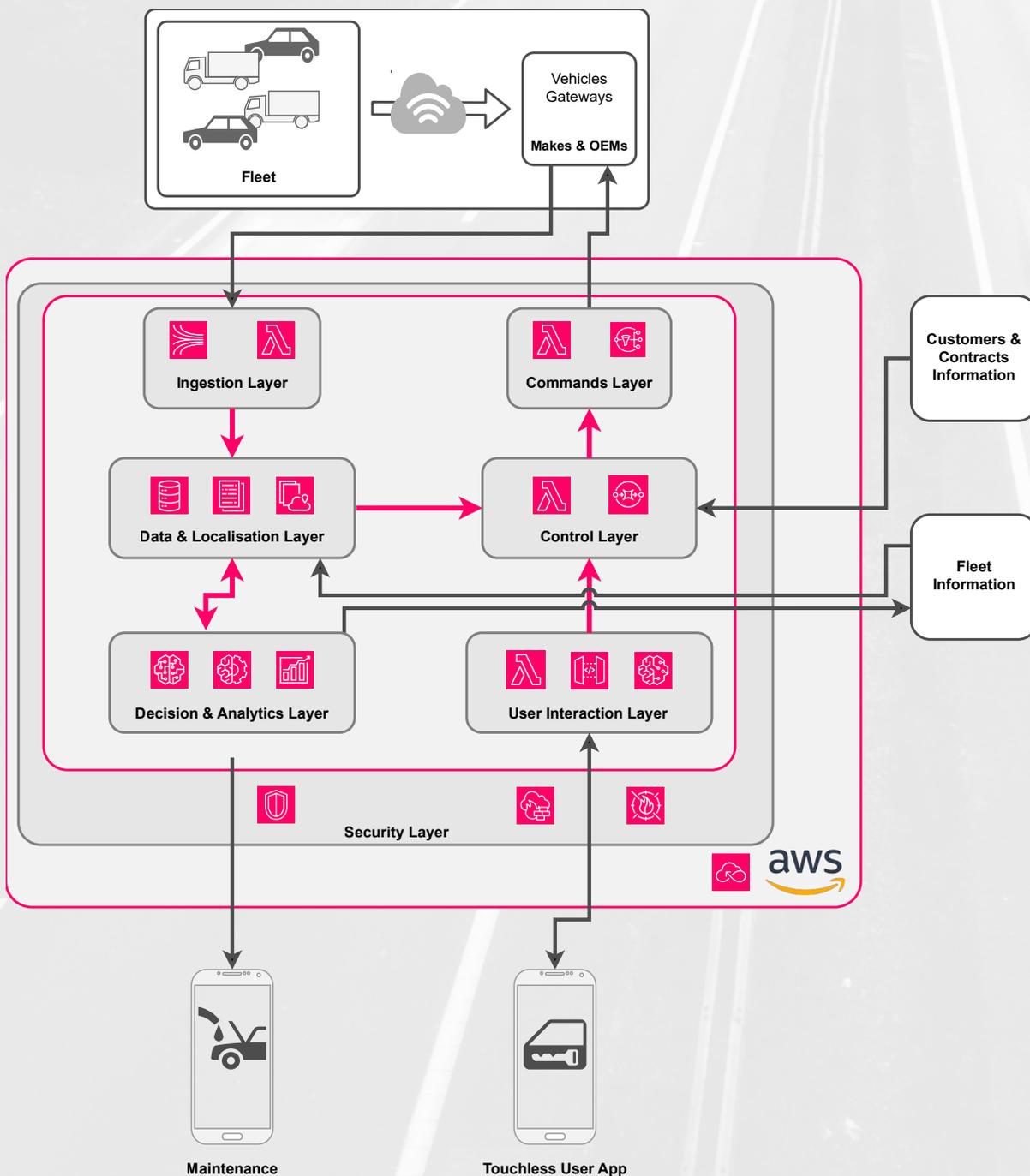
The solution further provides the customer with an opportunity to make critical decisions and ensure optimum safety and asset utilisation. An example of this is when a vehicle is declared 'missing', the solution will accurately pinpoint the vehicle in real-time, allowing for vehicle recovery. Equally, the context provided to the data gives superior insight to understand vehicle usage and creating accurate forecasts for maintenance and term of life.

# Approach

The platform is entirely designed in a serverless approach and utilises AWS services. The key services employed are Kinesis, Lambda, SQS, SNS, API Gateway, Sage Maker, Location Services and is secured using AWF, Key Management System, Firewall, Shield.

The development process was articulated with tests first in mind, meaning the entire solution embedded behaviour end to end automated testing. Thus, it leverages the benefits of infrastructure as code that automatically deploys the platform as a whole at each build and tests it end-to-end. Using this approach allowed for a rapid build with confidence that production deployment would fulfil the customer needs and meet the definition of 'complete'.

# Architecture



## Achievements



100s of thousands of \$\$\$ in asset value recovered each month



Enabling the end-user to interact with the vehicle, speeding up the process of picking a vehicle leading to a better customer experience and an increase in loyalty



Forecast of vehicle usage and location leading to better maintenance plans



Thousands of \$\$\$ in fuel savings



Provided decisions to assign engines to promote less used vehicles