

# DRIVER MONITORING

By Vodafone, Saguna, AWS & TensorIoT

## About TensorIoT

TensorIoT was founded on the instinct that majority of the 'compute' is moving to the edge and all 'things' are becoming smarter. Both are pretty safe bets but organizations continue to struggle to exploit the power and possibilities of the intelligent edge computing.

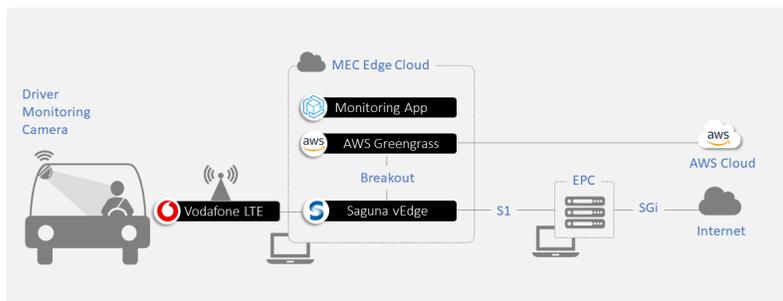
Our founders helped build world-class IoT and AI platforms at AWS, Google and are now helping simplify the way enterprises incorporate edge devices and their data into their day to day operations.

## About Vodafone

Vodafone is one of the world's largest telecommunications companies providing a wide range of services including voice, messaging and data across mobile and fixed networks.

## Driver Monitoring @ Edge

Vodafone plans to leverage their LTE platform to deploy a driver monitoring solution on their multi-access edge compute (MEC) platform to reduce accidents and promote safer roads. However, purpose built cameras with in-built AI are expensive, hard to upgrade and have to be integrated at the time of vehicle purchase, hence leaving out millions of existing car owners. Vodafone is looking for an inexpensive solution which can be purchased off the shelf and installed on new or existing vehicles.



TensorIoT built a driver monitoring solution which may be used with low cost off-the-shelf cameras while offloading the computational heavy lifting to the MEC. The solution leverages ML@Edge within AWS Greengrass to perform inference on the camera feed transmitted over the Vodafone's LTE network from the car. The solution also provides ability to enhance safety and add new detection features over time by providing capability to seamlessly update ML modes on the edge.

## About Saguna

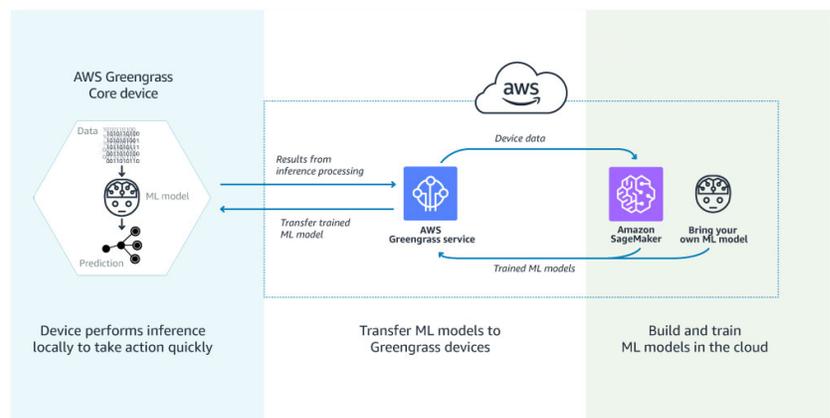
Saguna, the Multi access Edge cloud computing company, makes mobile broadband faster, simpler and more economical with smart NFV software solutions. With Saguna, mobile operators can monetize, optimize and accelerate their mobile networks by bringing internet content and applications into the Radio Access Network (RAN); as close as possible to mobile users.

## About AWS

Amazon Web Services provides a highly reliable, scalable, low-cost infrastructure platform in the cloud and that powers hundreds of thousands of businesses in 190 countries around the world. With data center locations in the U.S., Europe, Brazil, Singapore, Japan, and Australia, customers across all industries are taking advantage of the benefits offered by AWS.

## About Greengrass & Sagemaker

AWS Greengrass is software that lets you run local compute, messaging, data caching, and sync capabilities for connected devices in a secure way. With AWS Greengrass, connected devices can run AWS Lambda functions, keep device data in sync, and communicate with other devices securely – even when not connected to the Internet. Now, with the Greengrass Machine Learning (ML) Inference capability, you can also easily perform ML inference locally on connected devices.



Machine Learning works by using powerful algorithms to discover patterns in data and construct complex mathematical models using these patterns. Once the model is built, you perform inference by applying new data to the trained model to make predictions for your application.

AWS Greengrass ML inference gives you the best of both worlds. You use ML models that are built and trained in the cloud and you deploy and run ML inference locally on connected devices. For example, you can build a predictive model in the cloud about the diamond heads of boring equipment and then run it underground where there is no cloud connectivity to predict the wear and usage of the diamond.

(Ref: <https://aws.amazon.com/greengrass/ml/>)