HackTheMap App

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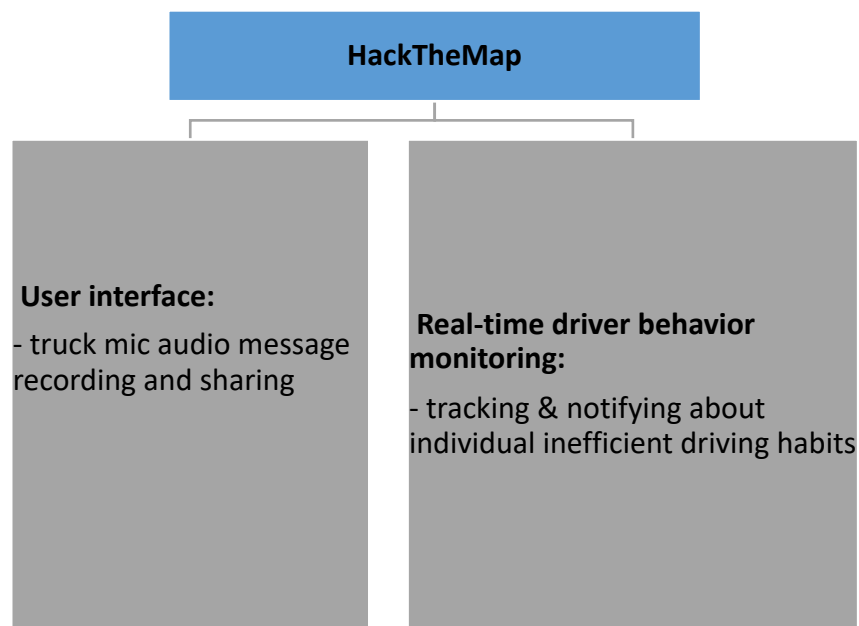
Basic Need for a Solution

While existing interactive apps might be a helpful assistant for the truck drivers, they are still designed as a handheld device that requires the driver's eye off the road and hands off the wheel when the truck is running. Distracting the driver's attention even for few seconds might have a disastrous outcome. Nevertheless, ability to share a real-time information with minimum driver distraction could be life-saving experience as well as cost-saving concern of a company.

Designed Solution

HackTheMap is a reliable navigation solution designed to complement the driving activity in the truck with a seamless interaction between a truck driver and the app. Along with all standard features of a navigation system and real-time driver behavior monitoring, HackTheMap comes with a unique user experince.

Figure 1 illustrates key features of HackTheMap app.

Figure 1. HackTheMap Features

HackTheMap

User interface:
- truck mic audio message recording and sharing

Real-time driver behavior monitoring:
- tracking & notifying about individual inefficient driving habits

Problems Solution Addresses

Problem 1: Insufficient communication among the drivers

Solution 1: Truck microphone audio message recording and sharing

Insufficient communication among the drivers might breed various challenges for them: spending great amount of time trying to search for available parking space or suitable bathroom suites, to mention a few. Truckers recorded audio messages ensure the drivers can get the information they need and when they need it to do their best work.

On a lighter note, a truck driver could use microphone to record a joke to keep the fellow drivers entertained and connected.

Technical solution: HackTheMap creates information repository for the trukers' audio messages and learns from them.

Problem 2: Inefficient and insecure driving behavior

Solution 2: Real-time driver behavior monitoring on the map

Monitoring dangerous and inefficient driving behavior can be a strong motivator for drivers to improve their habits. When the drivers know that their behavior is being monitored by the app and not directly by the fleetboard managers, their driving styles could be improved. Real-time driver behavior monitoring on the map is not a performance measurement tool, but rather an advisory tool crafted by the system for the drivers to rethink their driving habits. Depending on the scenario, gathered data can be sent to the fleetboard managers anonymously.

Technical solution: HackTheMap receives data about real-time driver behavior, stores it, analyzes it, learns from it and sends notifications to the drivers.

Usage of truck data: vehicle position, engine temperature, accelerator pedal position, brake pedal (pressed/depressed), clutch pedal (pressed/depressed), current fuel consumption, engine speed, fuel level, vehicle speed
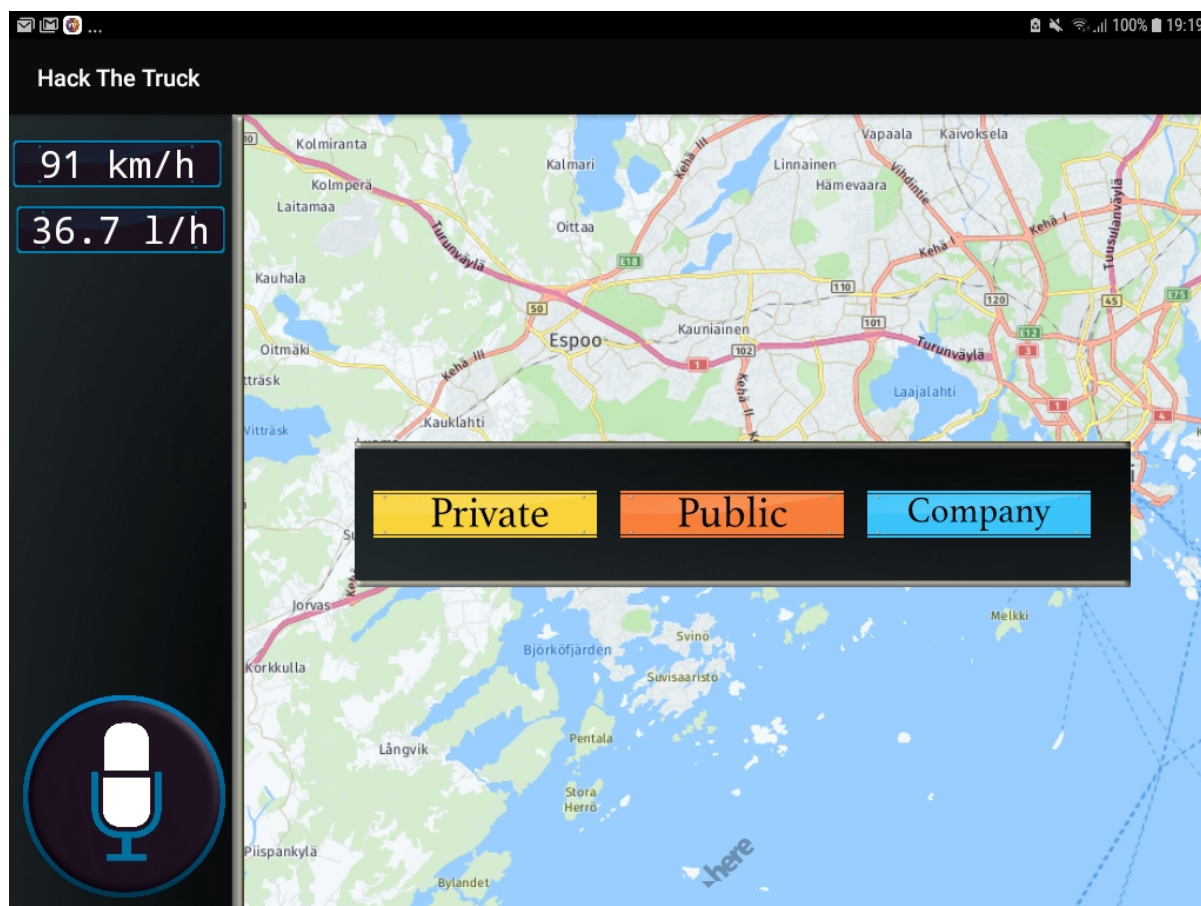
So, How Does It Work?

This is an initial user interface prototype of the app.

The pictures below illustrate how the crafted application works.
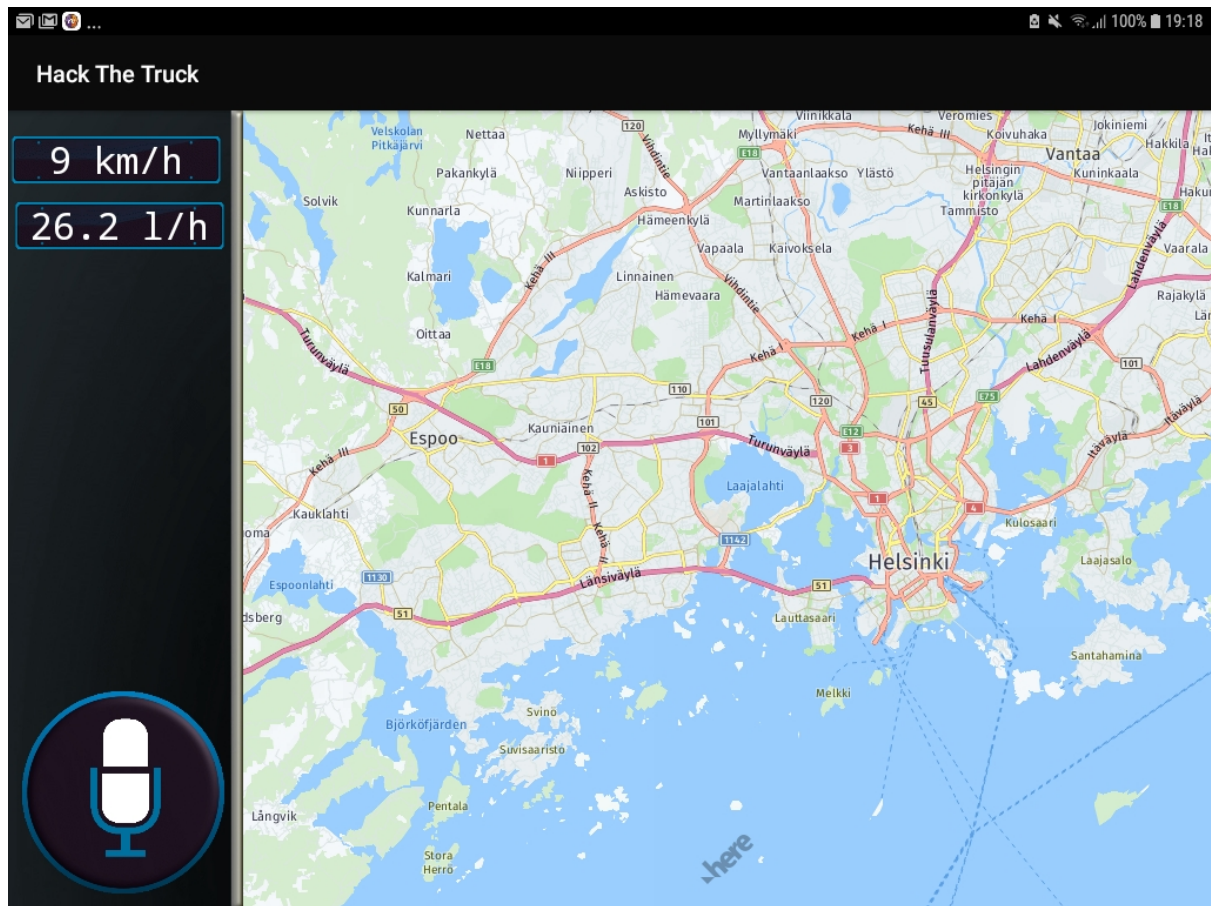
Pic. 1

The driver records the audio message by clicking on the mic button

Pic. 2

Channel selection appears after the truck driver has recorded the audio file.

A message added to the 'private' channel is only visible to the truck driver.

A message added to the 'public' channel is visible to the truck drivers who are within a preset geographic proximity to the location pin of the message.

Depending on context, a message added to the 'company' channel is visible to the truck operators and dispatchers and other drivers working for the same company.
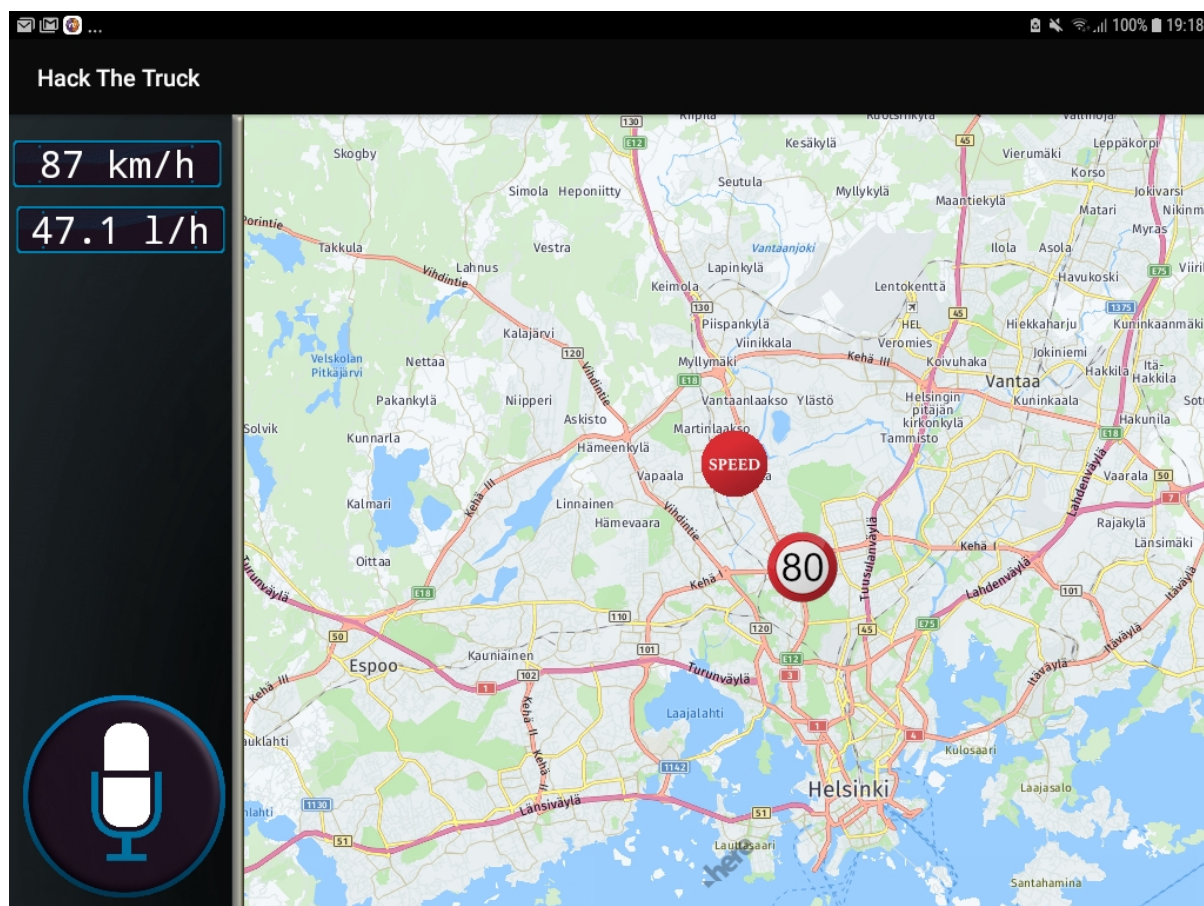
Pic. 3

Marker on the map shows the result of the audio submitted by the driver or automatically generated by smart algorithim such as repeated over-speeding on geographic location by the driver.
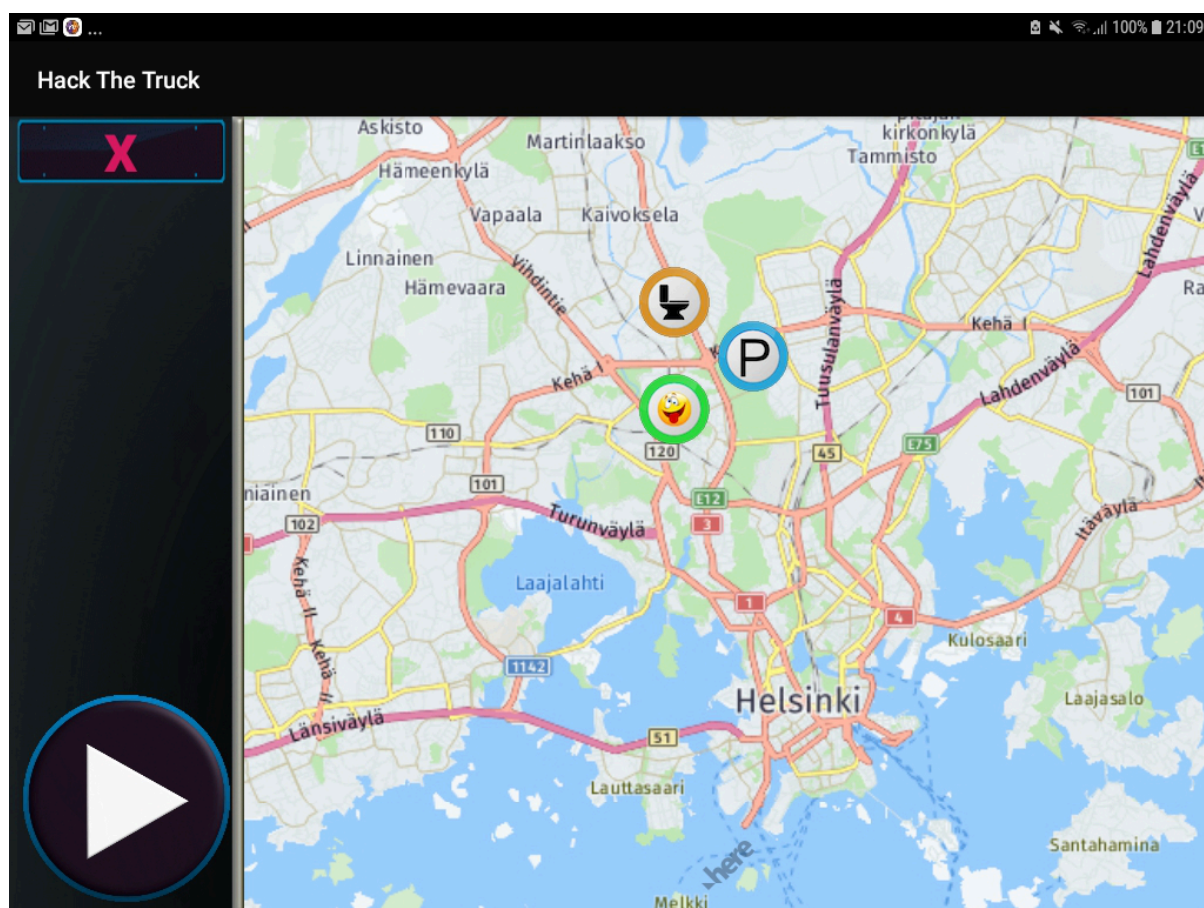
Pic. 4

Recorded audio file can be played automatically when truck drivers approach the marker by some distance. In pic. 4, truck drivers recorded audio messages about bathroom suites, availability of the parking space and a joke.

How Does It Work on the Technical Side?

Figure 2 shows data flow of the app architecture.

Figure 2. Data flow

Benefits

HackTheMap offers multisided benefits for the involved parties to advance logistics industry from 'management' to 'engagement'.

HackTheMap offers the advanced reporting and feedback options for the fleetboard managers to support the drivers improving operational efficiency, significantly cutting fuel consumption and maintenance costs.

Meanwhile, truck recorded audio messaging and real-time driver behavior monitoring is a helpful tool to keep the truck drivers engaged, motivated and safe.

Future steps

One of the potential areas for future advancement and development of HackTheMap is automatic translation of audio messages into the driver's native language.

In technical terms: the output of the speech recognizer can be translated into different languages and converted back into audio message.

Create safe and engaging driving conditions for the truck drivers with a powerful and smart navigation system – HackTheMap.