Mobile App and Traffic Control Center for C-ITS Services - Elaboration

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Requirements gathering

- Brainstorming

- Observation of apps from related works

Mobile app - Functional Requirements

The system must:

- Communicate with the central broker and with an OBU to send and receive C-ITS events

- Allow the visualization of real time events in a map

- Allow the user to send C-ITS events

Mobile app - Non-Functional Requirements

- The application must run on Android and iOS operating systems
- Events must be shown within 100 ms
- Events must be sent to Central Broker within 100 ms
- The C-ITS events must comply with the standards created by ETSI in the protocol stack ITS-G5
- The system must support portuguese and english languages

Web interface - Functional Requirements
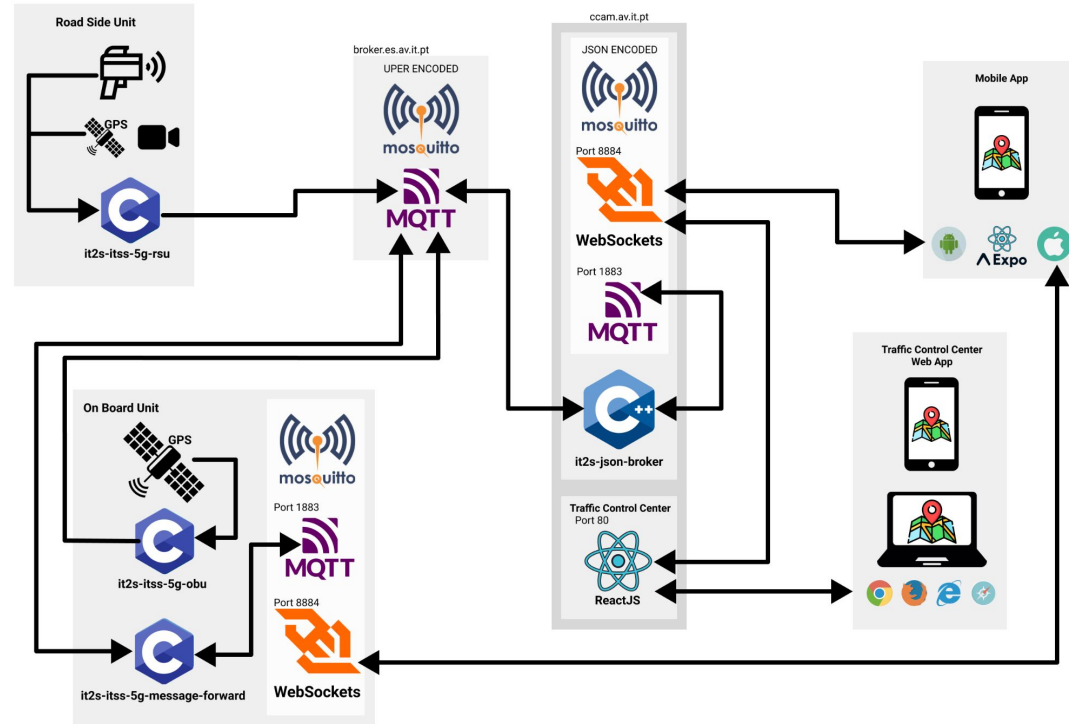
The system must:

- Communicate with the central broker to send and receive C-ITS events

- Allow the visualization of real time events in a map

- Allow the visualization of data in dashboards

- Allow have an interface to generate C-ITS events

- Allow to see the road status in a timeline

Web interface - Non-Functional Requirements

- The interface must be mobile friendly

- Events must be shown within 100 ms

- Events must be sent to Central Broker within 100 ms

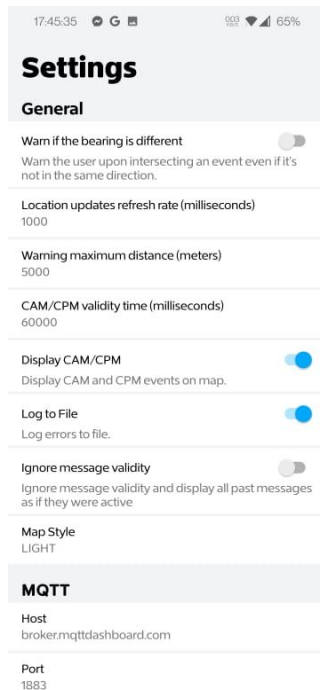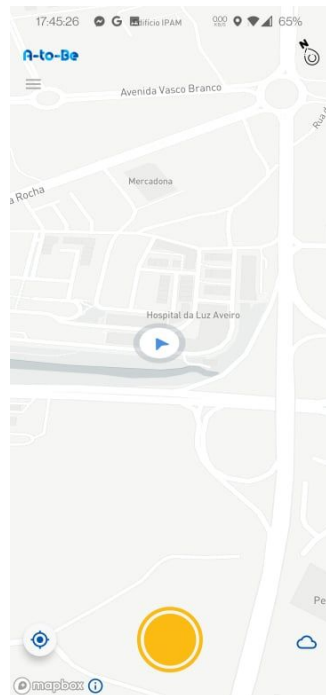- The C-ITS events must comply with the standards created by ETSI in the protocol stack ITS-G5

Architecture

State of the Art (A-to-Be)
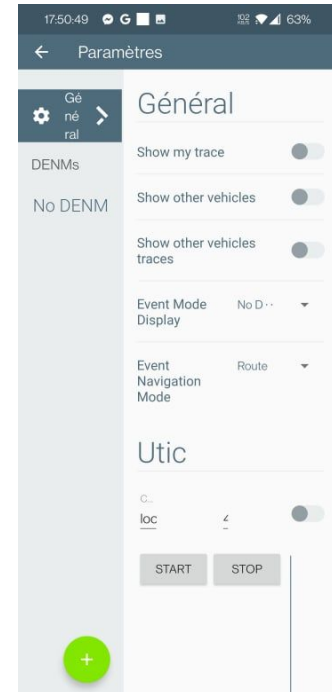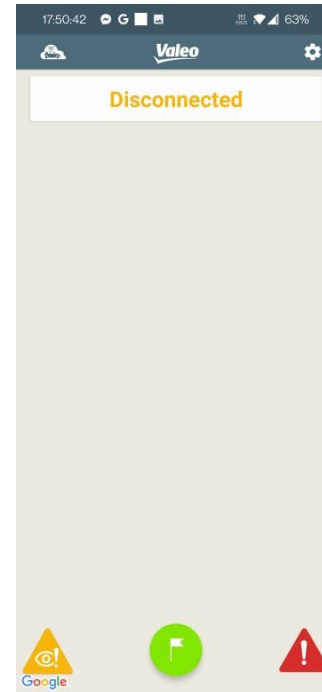
Our approach advantages:

- Works both on Android and iOS

- Works with a central broker
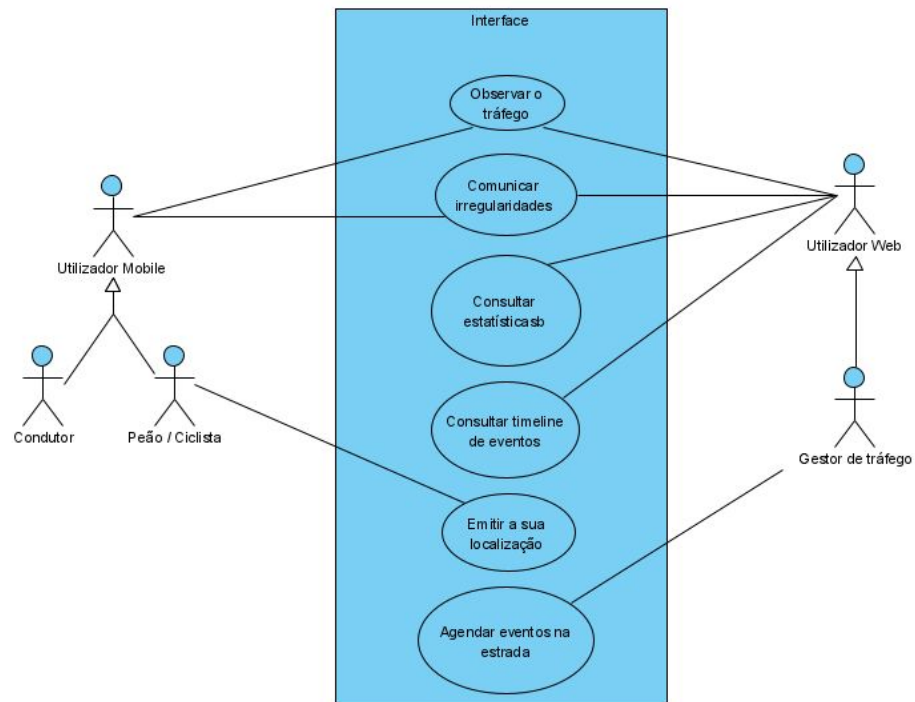
- Sends messages with user's position

State of the Art (Valeo)

Our approach advantages:

- Works both on Android and iOS

- Works with a central broker

- Less configuration
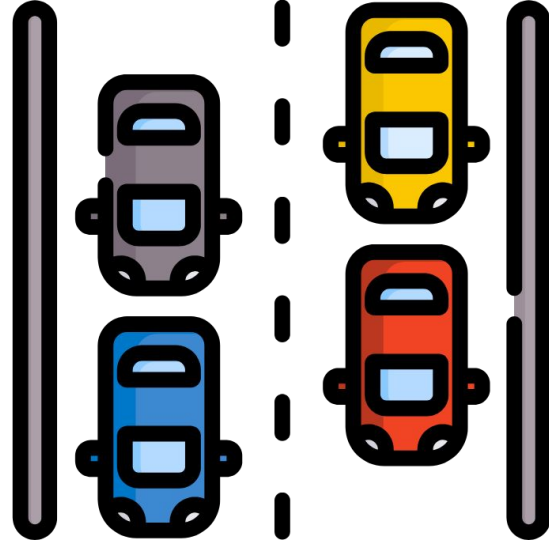
- Friendly interface on smartphones

Actors

Use-Cases

- #1: Observing traffic
- #2: Road anomaly reporting
- #3: Schedule traffic events
- #4: Viewing statistics
- #5: Viewing a timeline of events
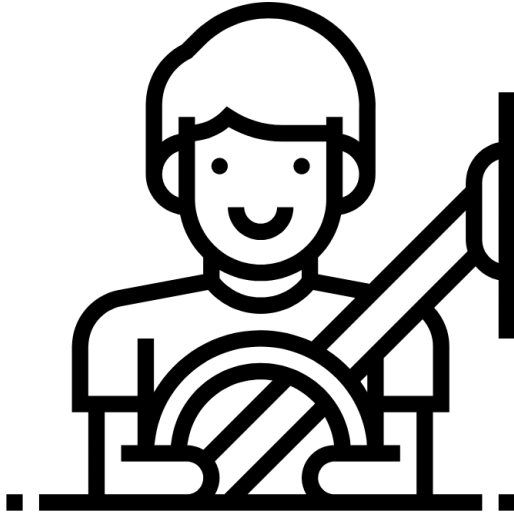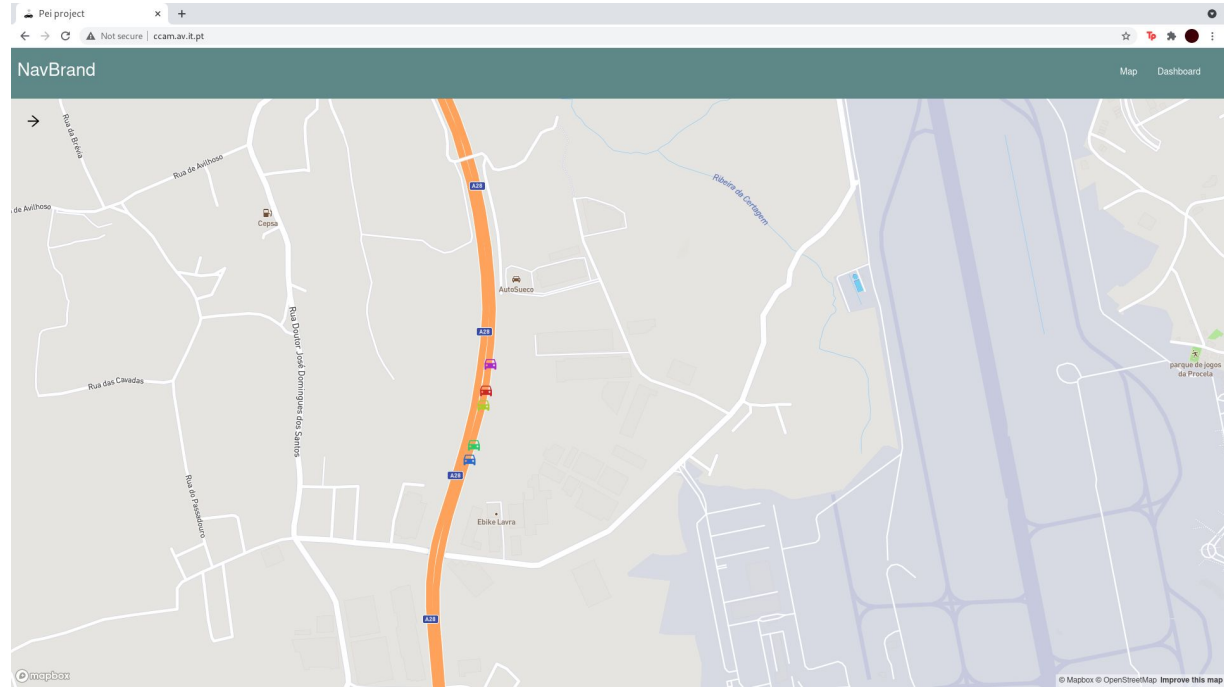- #6: Broadcasting own location

Use Cases: Broadcasting own location

Use Cases: Check traffic events

More on the app

Web App

Questions?

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