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Daimler Center for
Automotive Information Technology Innovations

DCAITI-Project: Implementation of a Traffic Light Service on an (Android) Smartphone

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Overview

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I. Background
II. Develop Framework
III. System Architecture
IV. Tasks
V. Milestone

1. Background

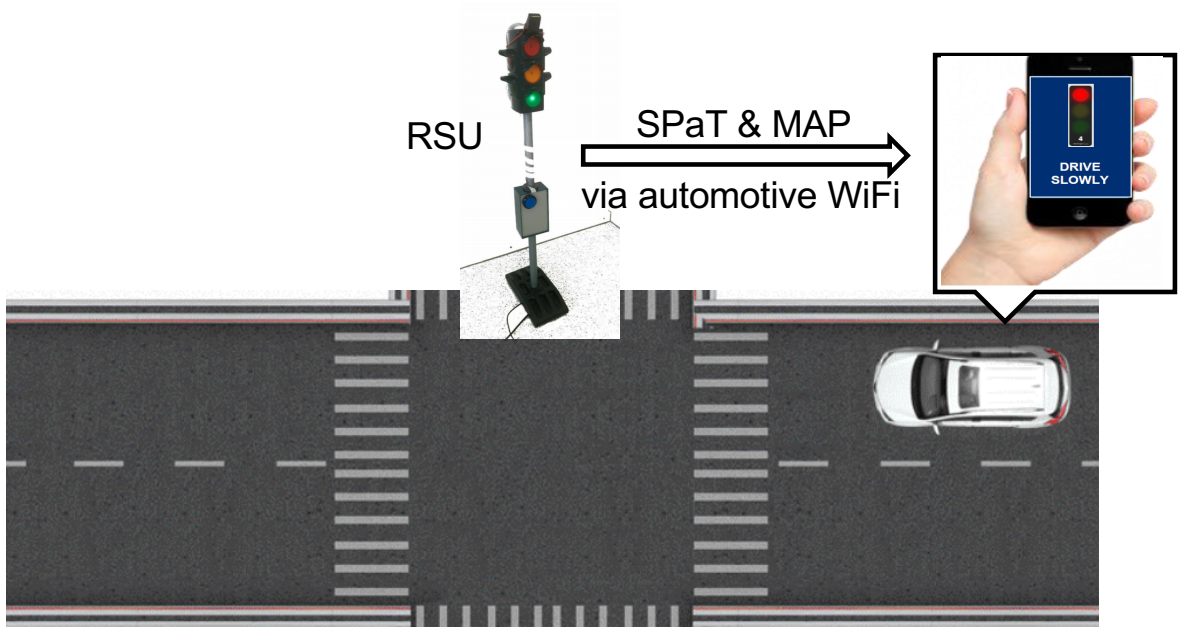
GLOSA (*Green Light Optimized Speed Advisory*)
- suggests speeds to vehicles to pass through an intersection

RSU (*Roadside unit*)

SPaT (*Signal Phase and Time*)
- FOKUS Traffic Light Service

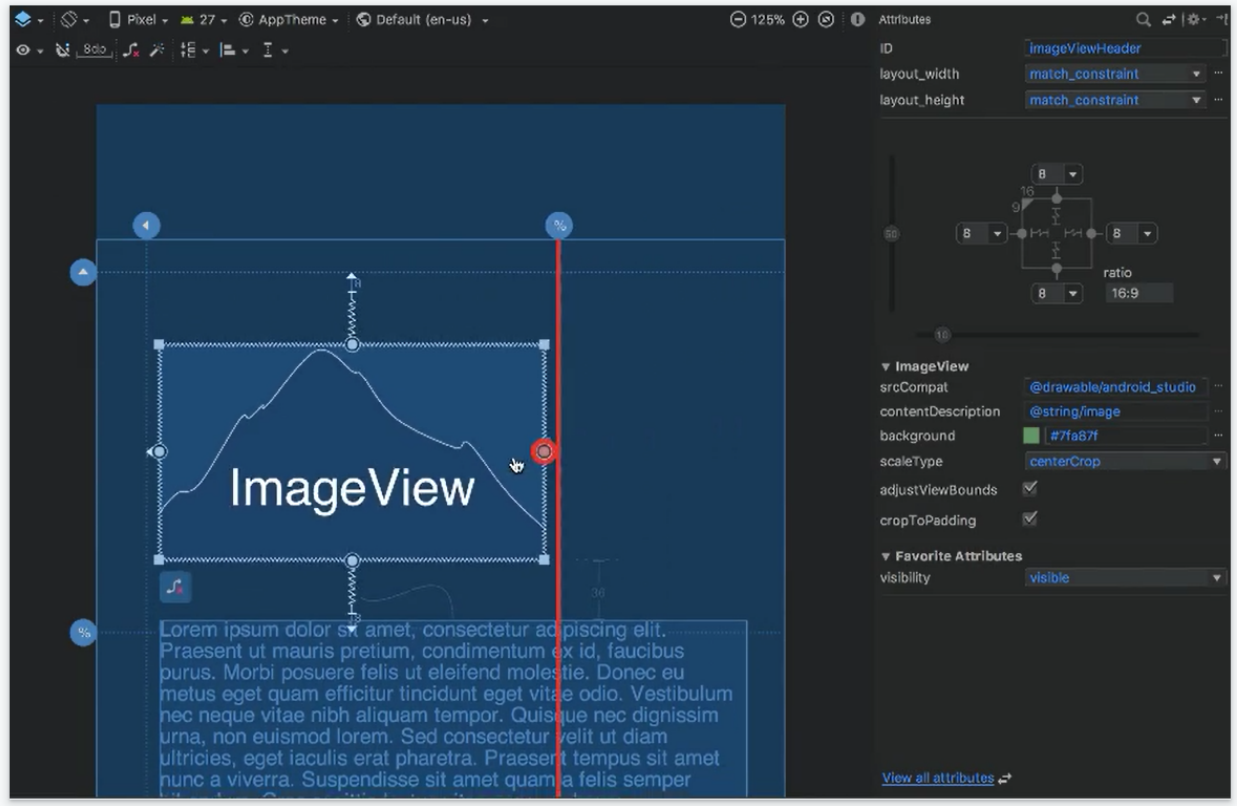
MAP (*Map data*)
- Topology of the intersection

Road Users
- car/ bicycle/ pedestrian
- receive recommendation for action



Android Studio

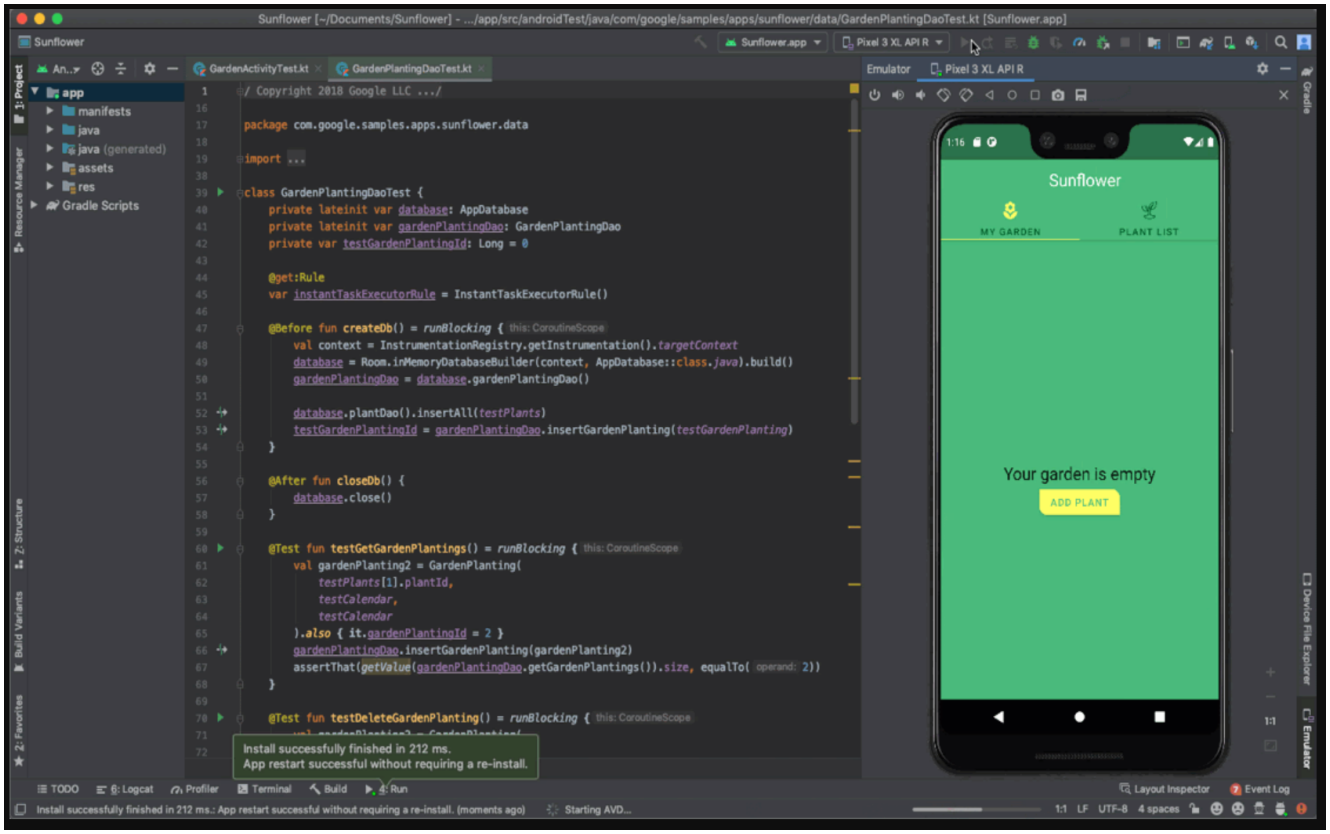
1. Visual layout editor
   - build layouts by dragging UI elements instead of writing layout XML by hand



Source: https://developer.android.com/studio

Android Studio

2. Fast emulator
- run apps on the Android Emulator

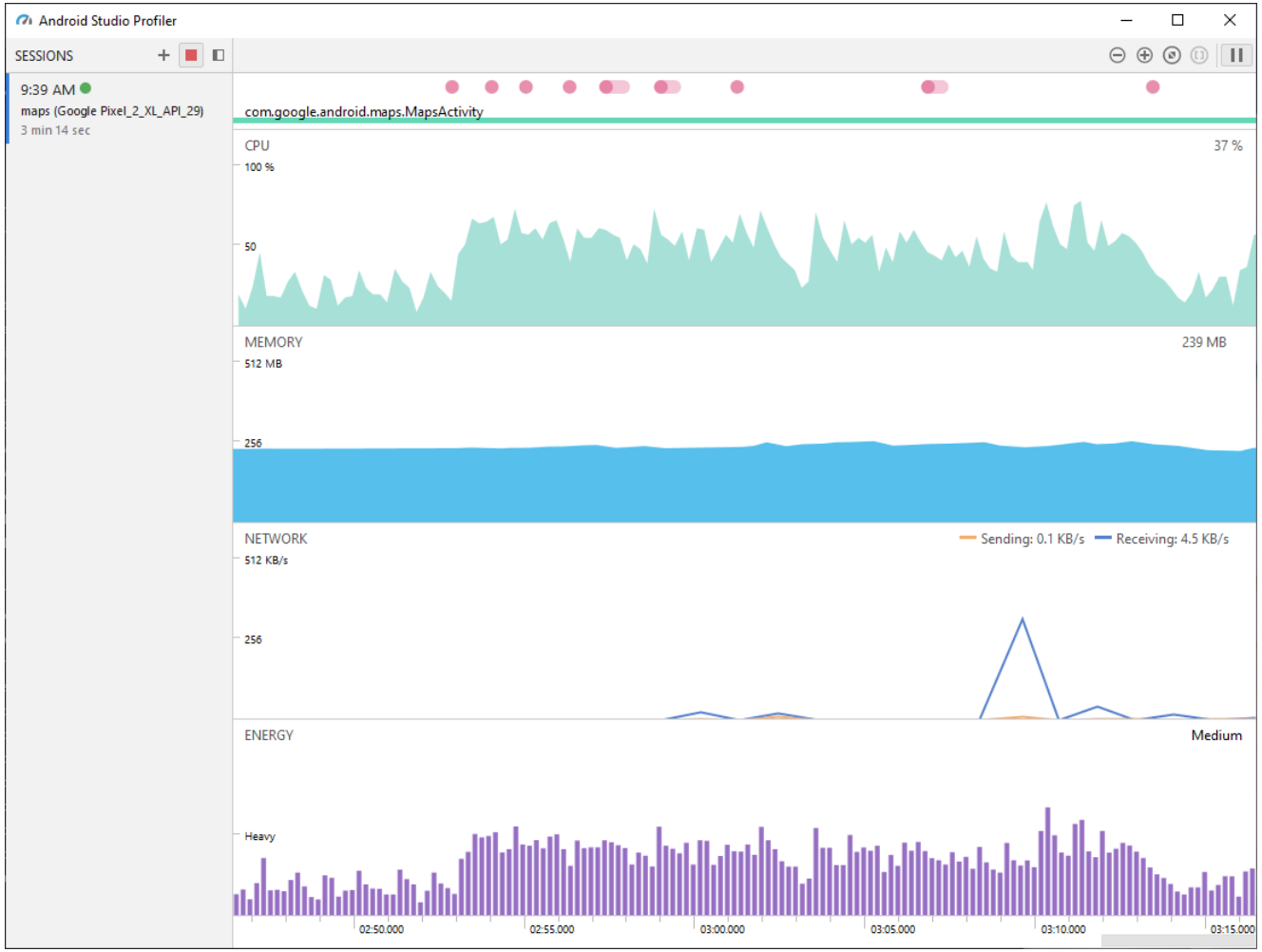


Source: https://developer.android.com/studio

Android Studio

3. Intelligent code editor
- based on IntelliJ IDEA

4. Realtime profilers
- measure app performance



Source: https://developer.android.com/studio

3. System Architecture

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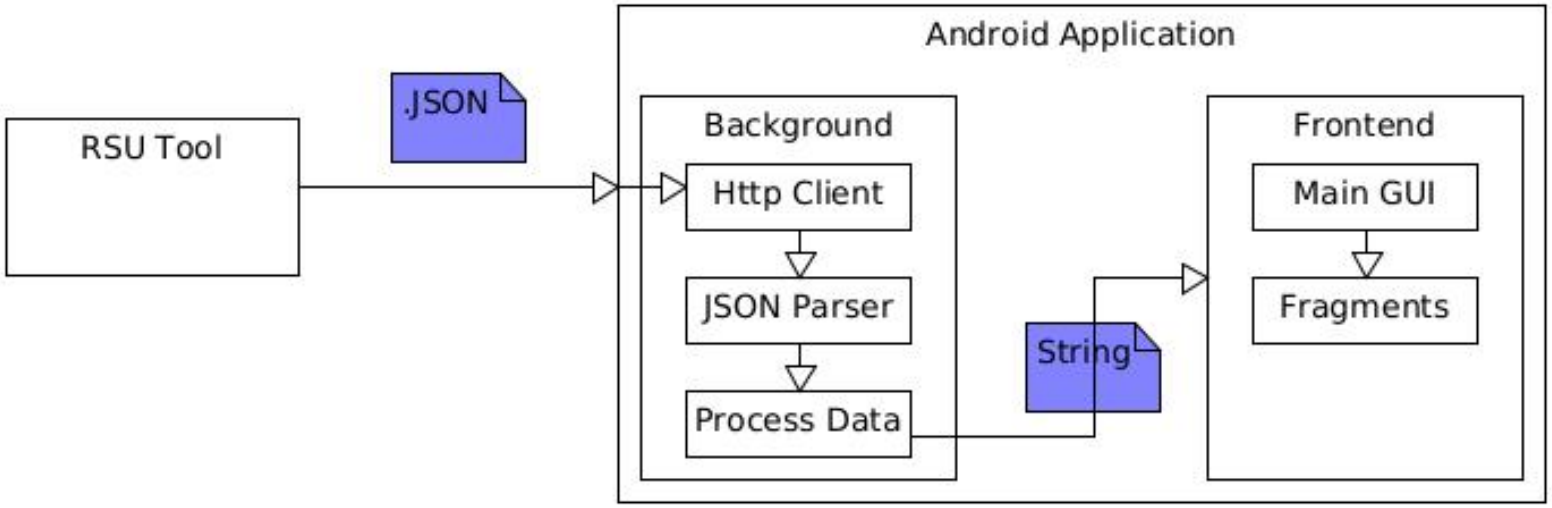

4. Tasks

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- Request, analysis and visualization of traffic lights information
- Decision of driving strategy
- Simulation and evaluation

4.1. Request, analysis and visualization of traffic lights information

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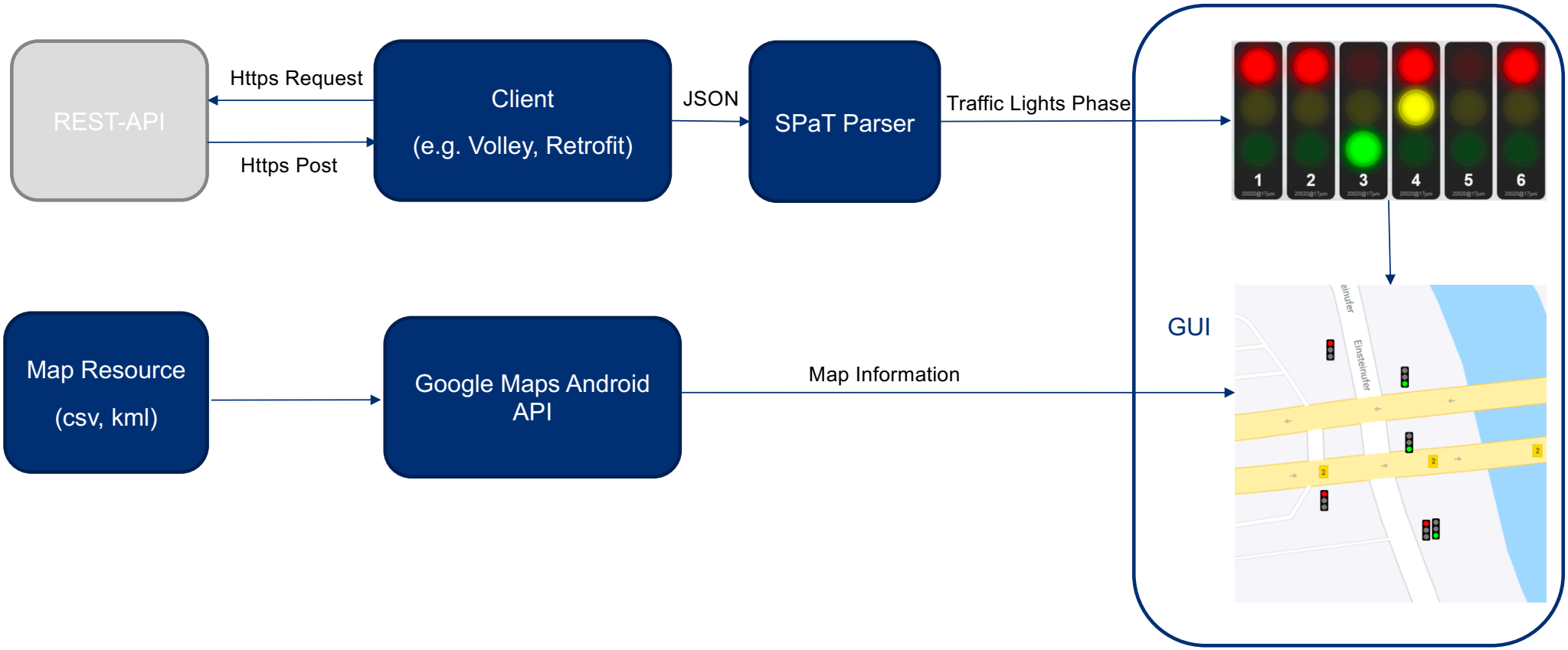

4.2. Decision of of driving strategy

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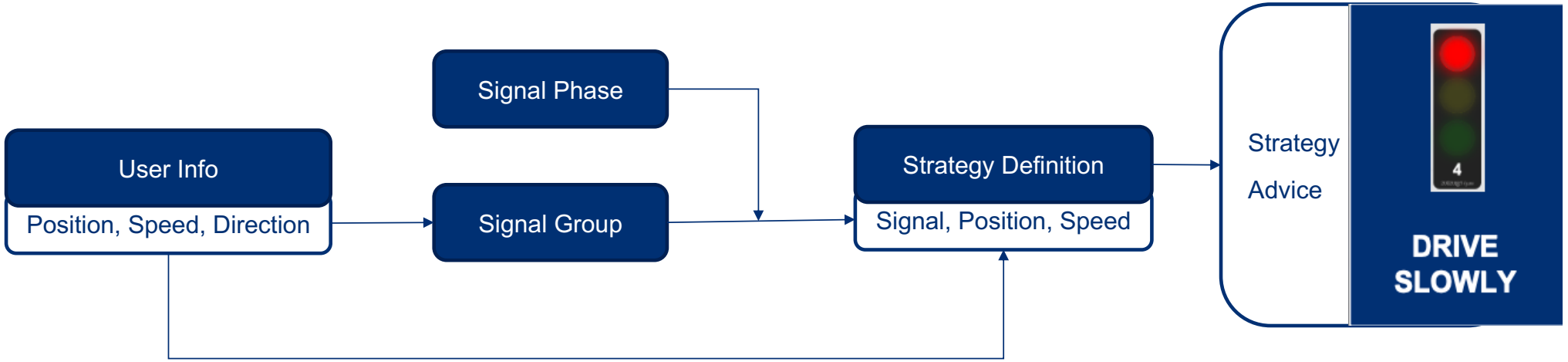

4.3. Simulation and evaluation

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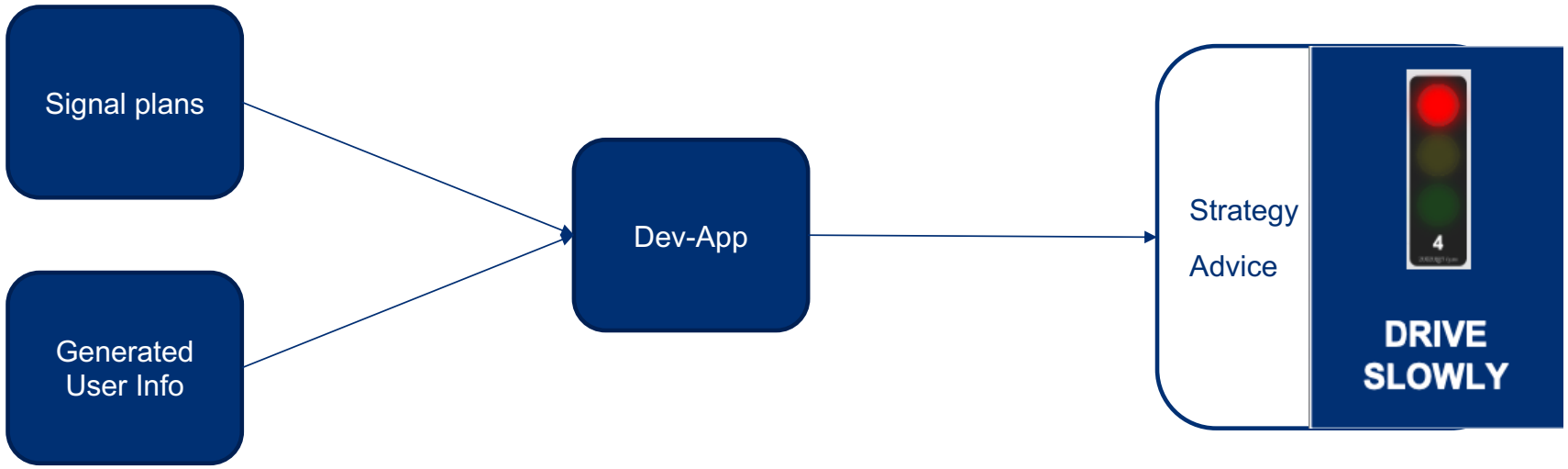
Testcases with different **signal plans** of traffic lights, **random users** (different position, direction and speed) and assertion of **driving strategies**



5. Milestone

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CW\Tasks	Literature Research	Framework & Libs Test	SPaT Analysis & Visual	Determination of signal group	2nd Pre.	Work about driving strategies	Simulation and Evaluation	3rd Pre.
47								
48	2nd Meeting							
49								
50								
51								
52								
53								
1					6-Jan			
2								
3								
4								
5								
6								10-Feb

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Thanks for your attention!

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