Modelação de Sistemas e Processos

MyWaze 1st Sprint Report

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Group Organization

Product owner: João Félix
Scrum master: Luís Lamy
Quality controller: Guilherme Santana
Team member: Yaroslav Hayduk and Bernardo Carvalho

Sprint 1 Planning

Project Start | 31/3/2025 | *columns used to create the chart*

CATEGORY	TASK	START	END	COLOR	Start	Blue	Red	Green	Brown	Orange	Purple	Working Days
Planning	Define Team Roles and Responsibilities #1	08/04/25	08/04/25	Blue	4/8/25	1	0	0	0	0	0	1
	Gantt Chart and Task Dependencies #2	08/04/25	08/04/25	Blue	4/8/25	1	0	0	0	0	0	1
Documentation	Generate Sprint 1 Burndown Chart #3	09/04/25	10/04/25	Blue	4/9/25	2	0	0	0	0	0	2
	SysML diagram for 15 FR. #4	10/04/25	15/04/25	Blue	4/10/25	6	0	0	0	0	0	6
	Model Main Business Process and Features (BPMN) #5	12/04/25	16/04/25	Red	4/12/25	0	5	0	0	0	0	5
Back End	Implement Back-End Logic for Basic Features #8	15/04/25	22/04/25	Red	4/15/25	0	8	0	0	0	0	8
Front End	Design Front-End UI #6	16/04/25	20/04/25	Red	4/16/25	0	1	0	0	0	0	1
	Implement Front-End #7	18/04/25	23/04/25	Red	4/18/25	0	6	0	0	0	0	6
Quality	Quality Check and Testing #9	22/04/25	27/04/25	Green	4/22/25	0	0	6	0	0	0	6
	Insert new rows above this one											

Figure 1 - Dependency Task Table

Gantt Chart

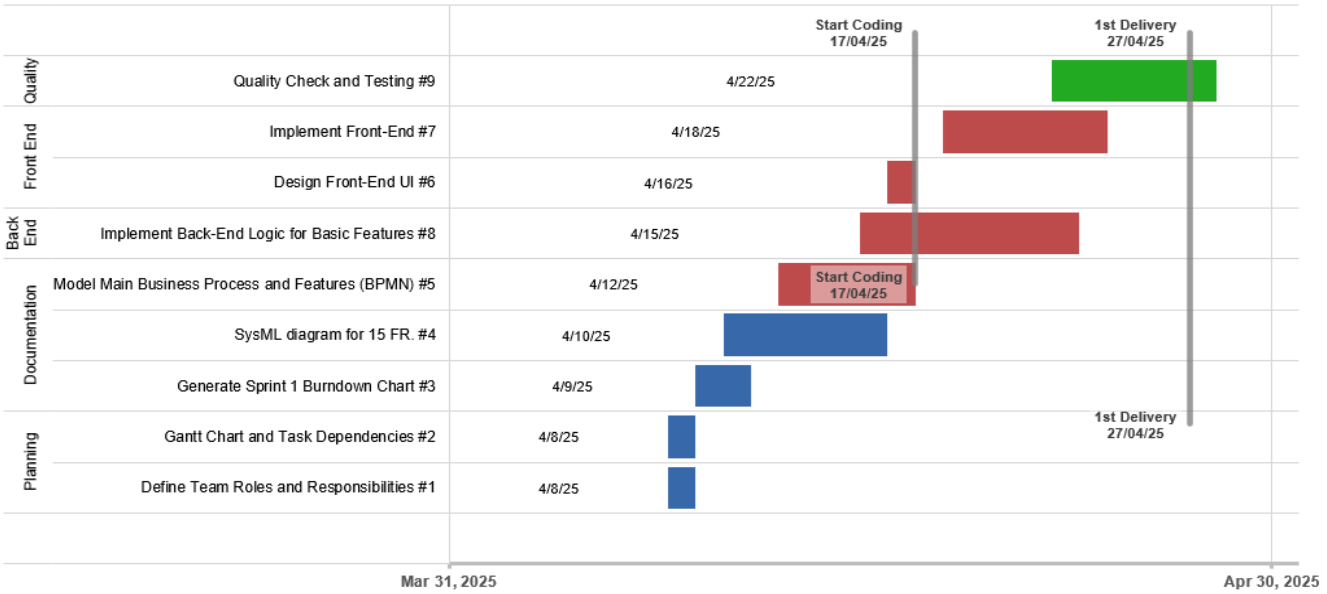


Figure 2 - Gantt Chart

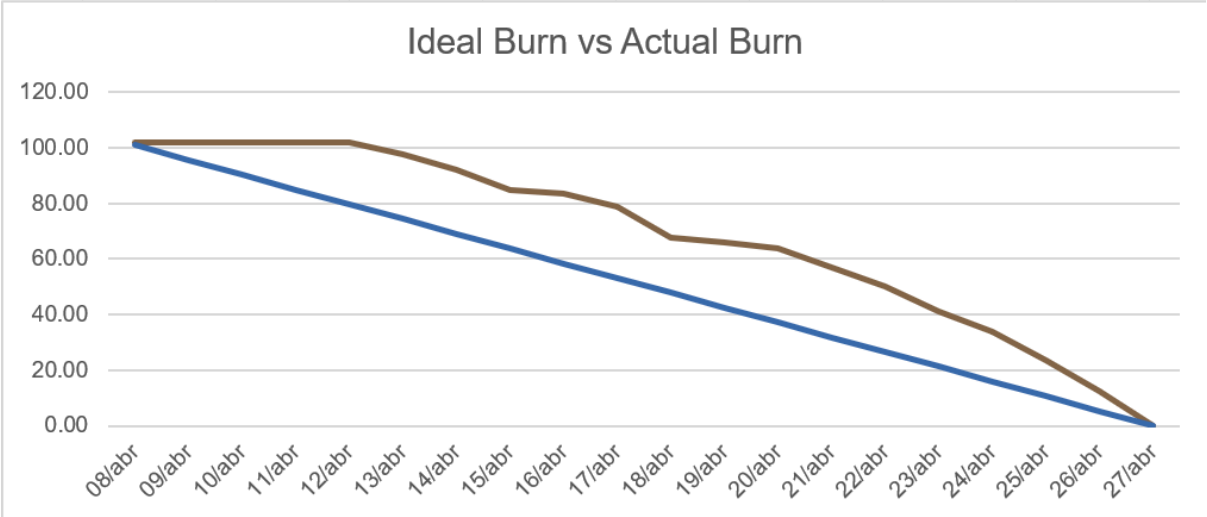


Figure 3 - Sprint Burndown Chart

Identified Features

5 Basic Features

1. Register account
2. Register type of vehicle
3. Define route
4. Alert if speed limit is violated
5. Calculate estimated time of arrival

7 Existing System Features

1. Voice-guided navigation
2. User-reported incidents
3. Alternative route suggestions
4. Integration with Spotify and other apps
5. Point of interest finder
6. Map personalization
7. Notification events

3 New Proposed Features

1. Carpooling Feature
2. Program Route with several stops
3. ETA on foot

BPMN Process Modeling

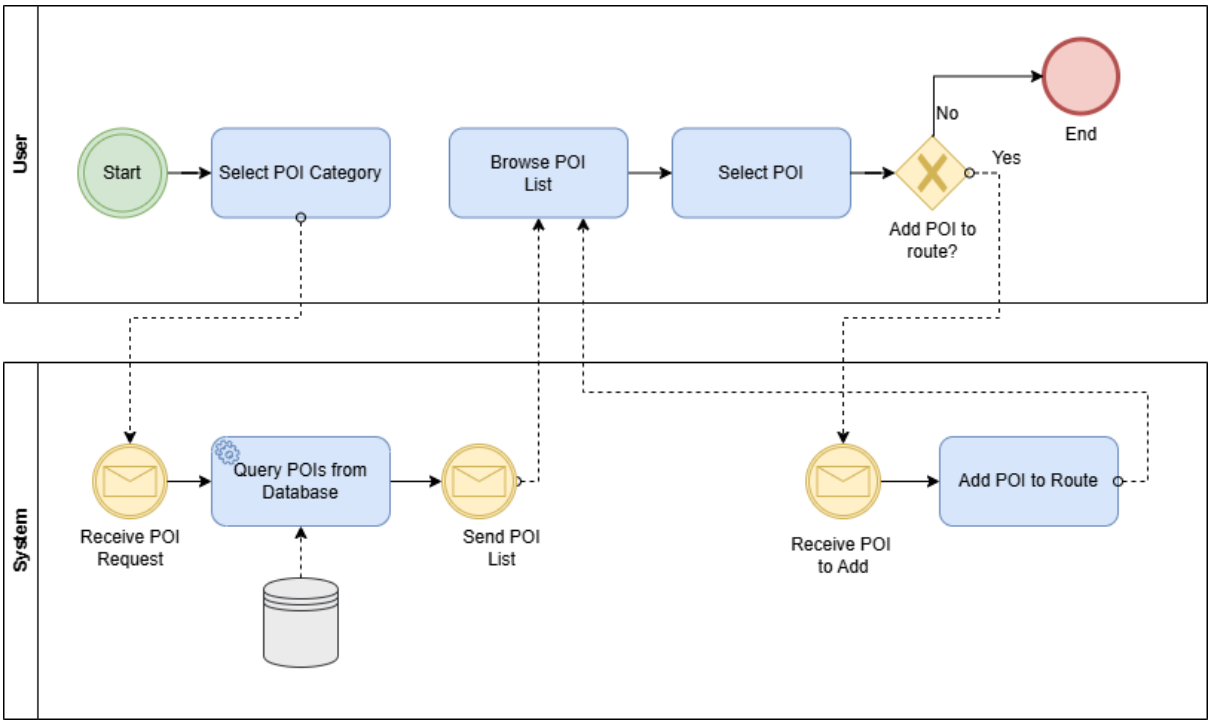


Figure 4 - BPMN for POI (Points of Interest) finder

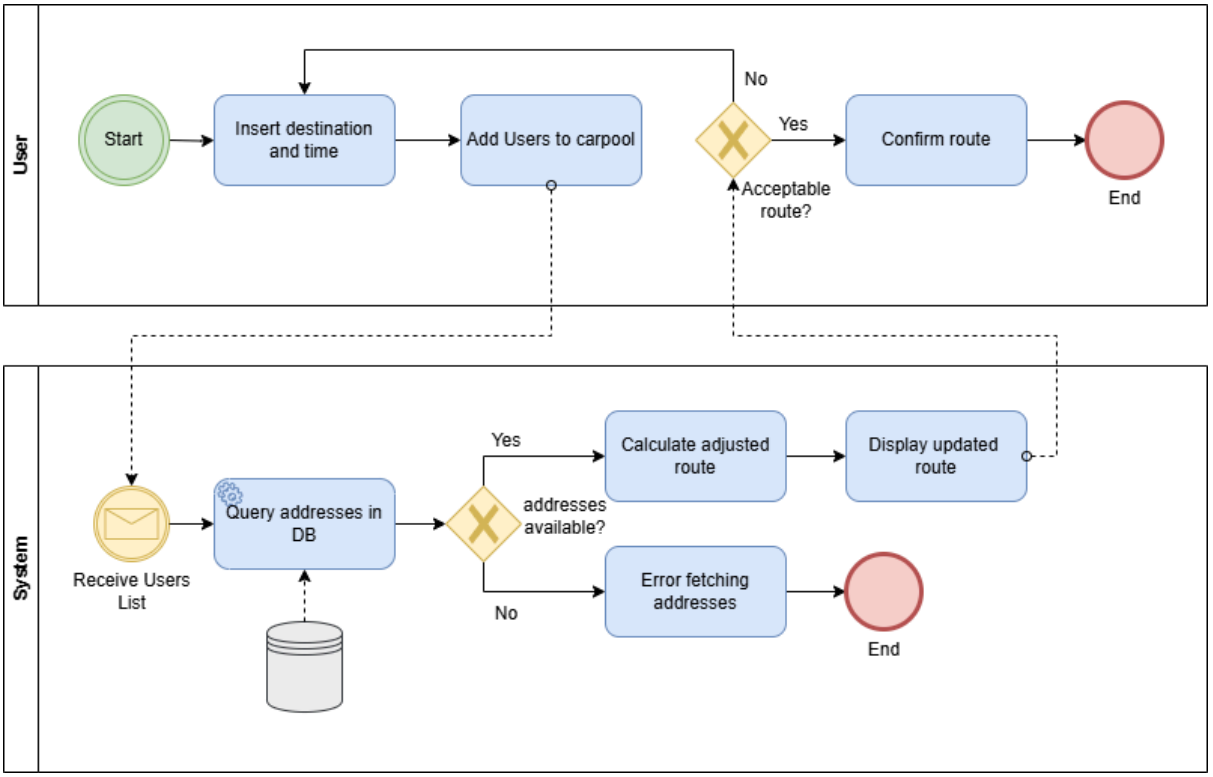


Figure 5 - BPMN for new feature: Carpool

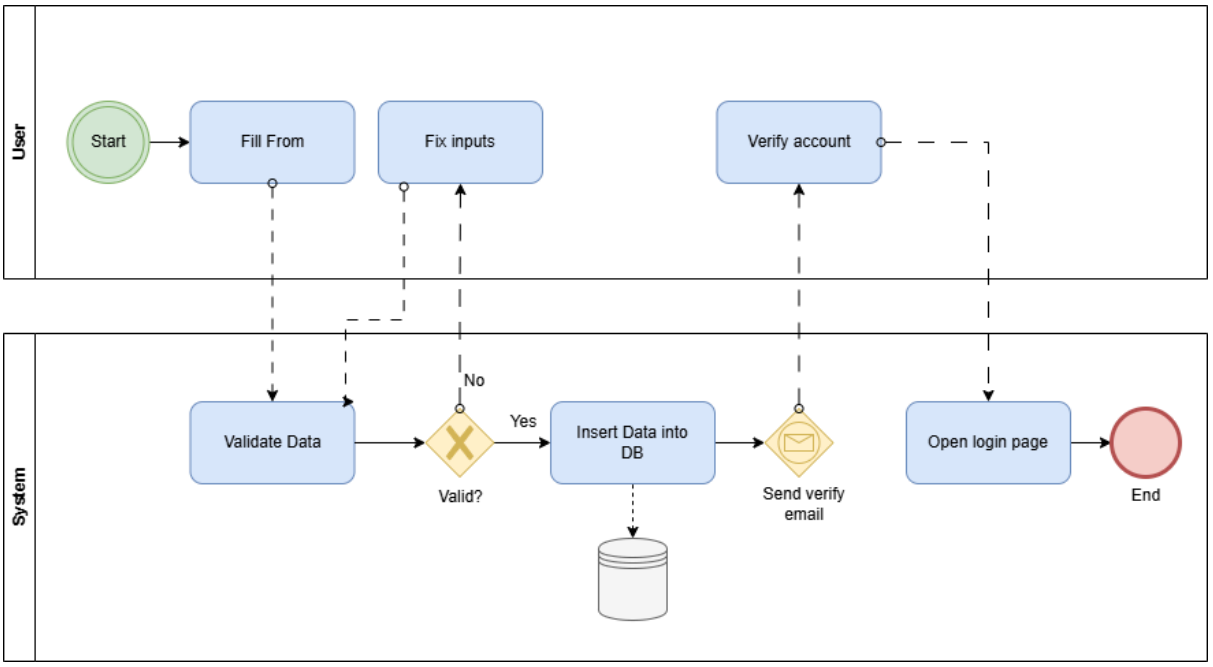


Figure 6 - BPMN for basic feature: Register User

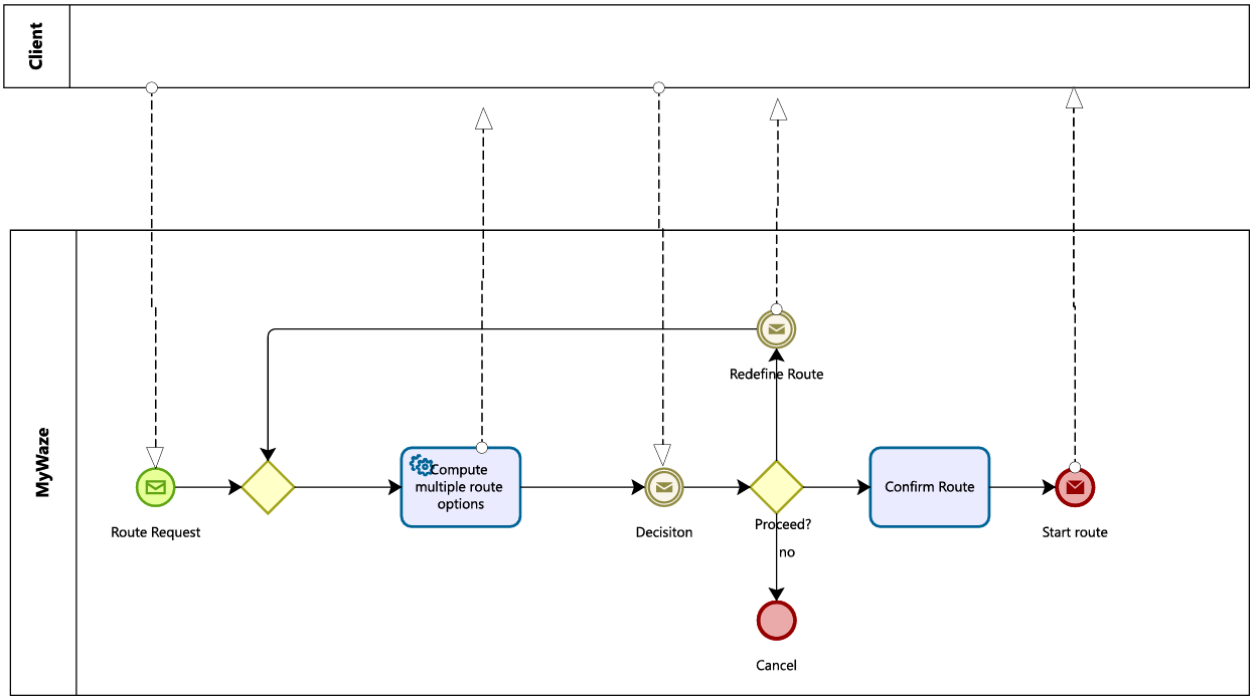


Figure 7- BPMN for basic feature: Define Route

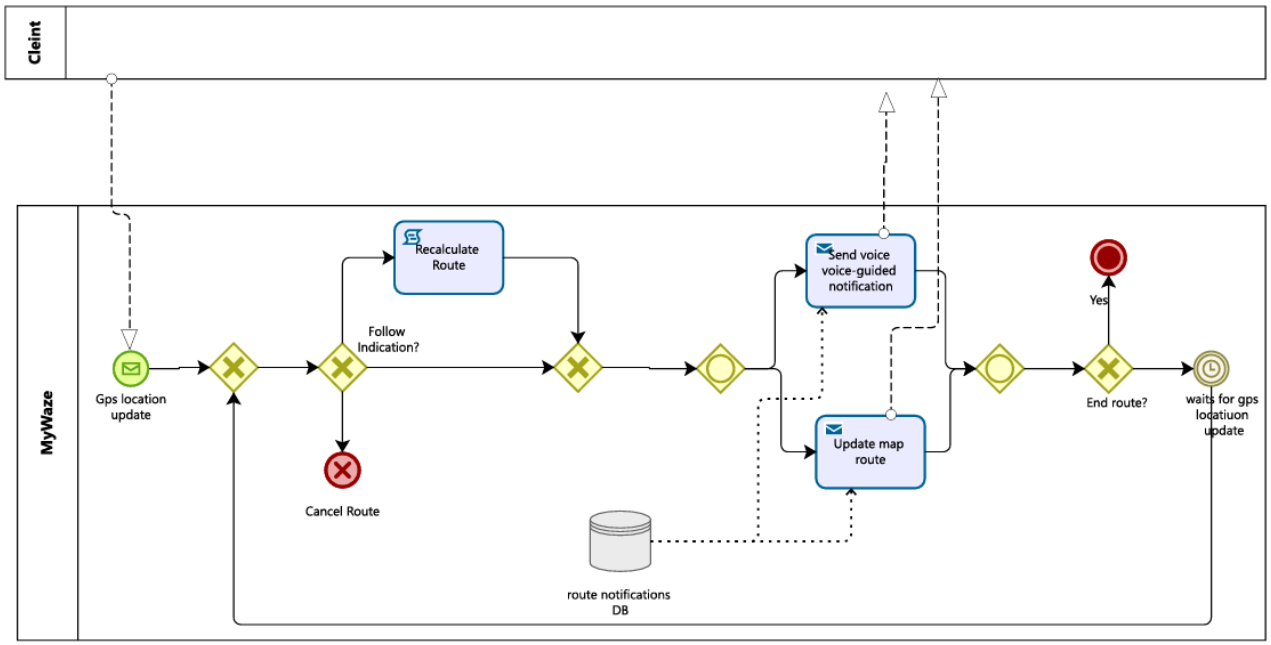


Figure 8- BPMN for existing feature: Music apps integration

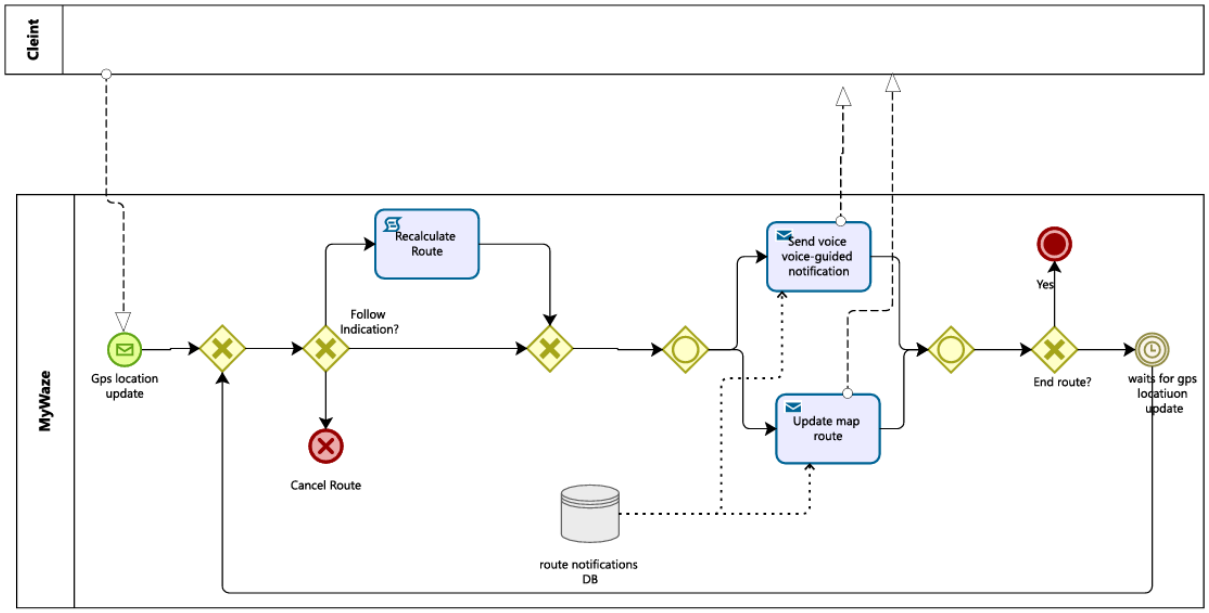


Figure 9- BPMN for existing feature: Voice-Guided notification

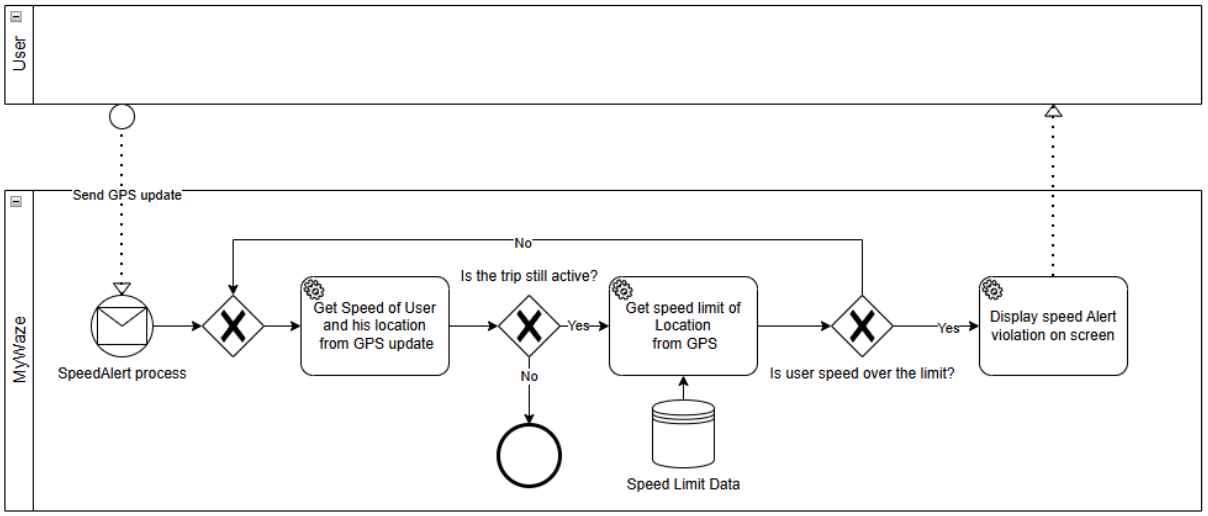


Figure 10- BPMN for basic feature: Speed limit alert

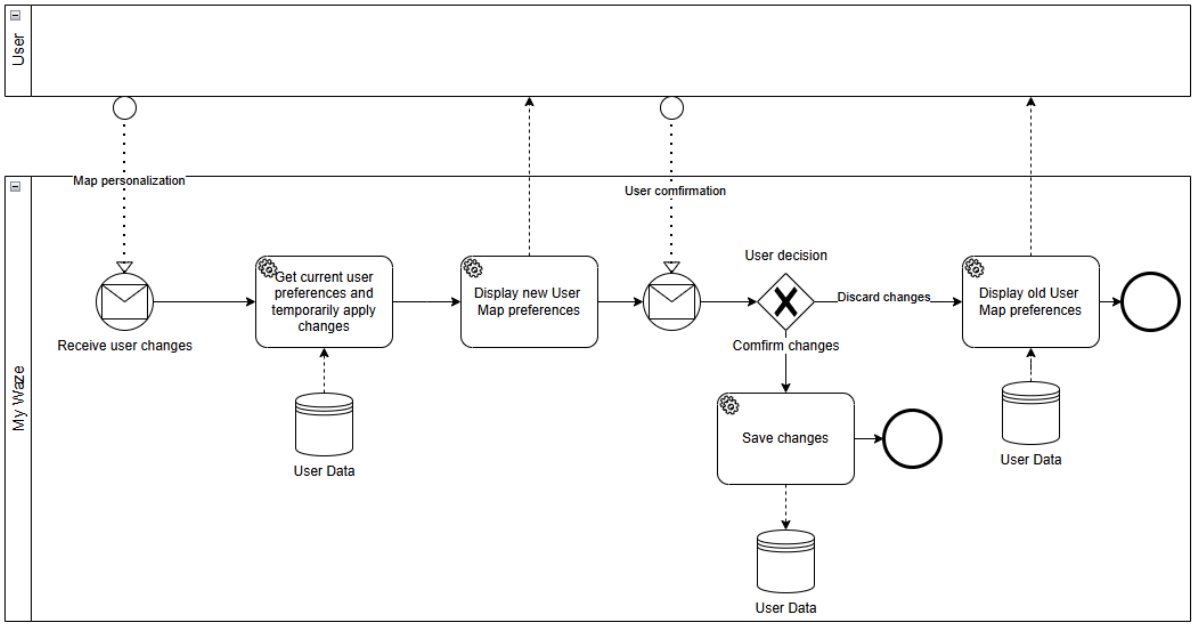


Figure 11- BPMN for existing feature: Map personalization

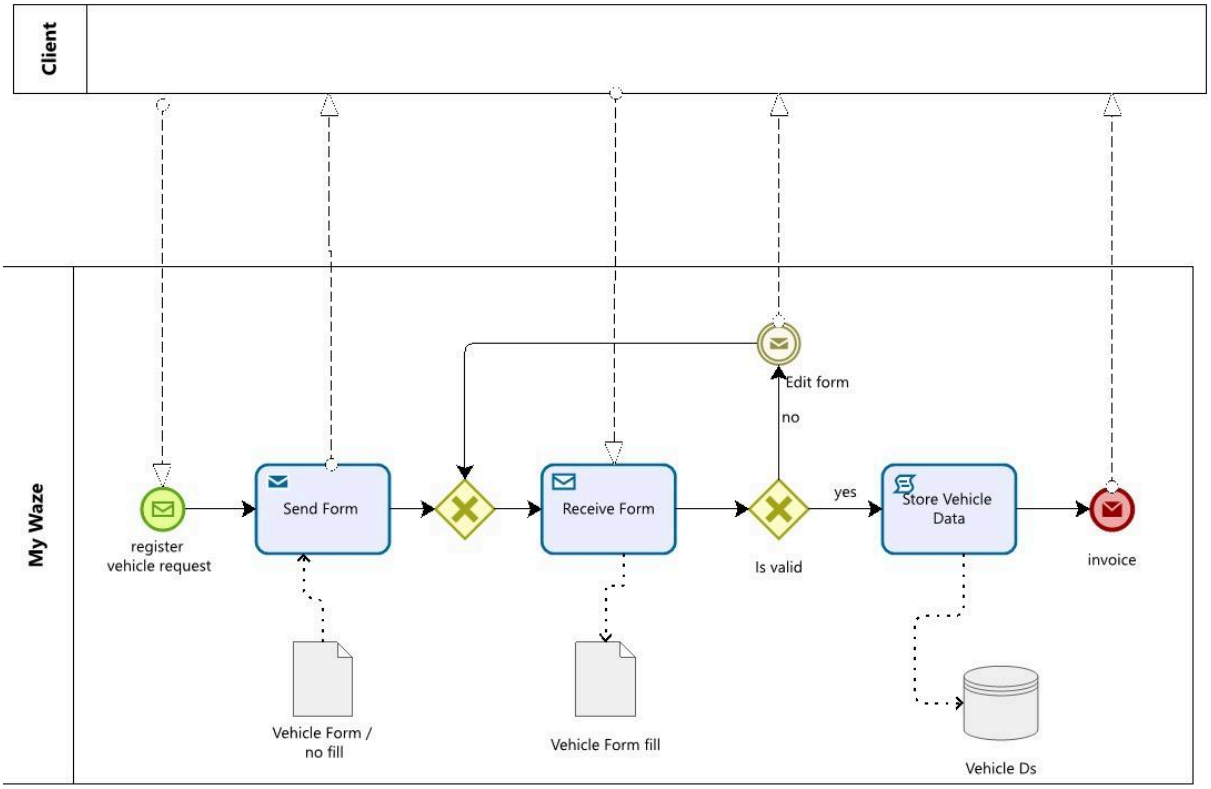


Figure 12 - BPMN for basic feature: Register Vehicle Type

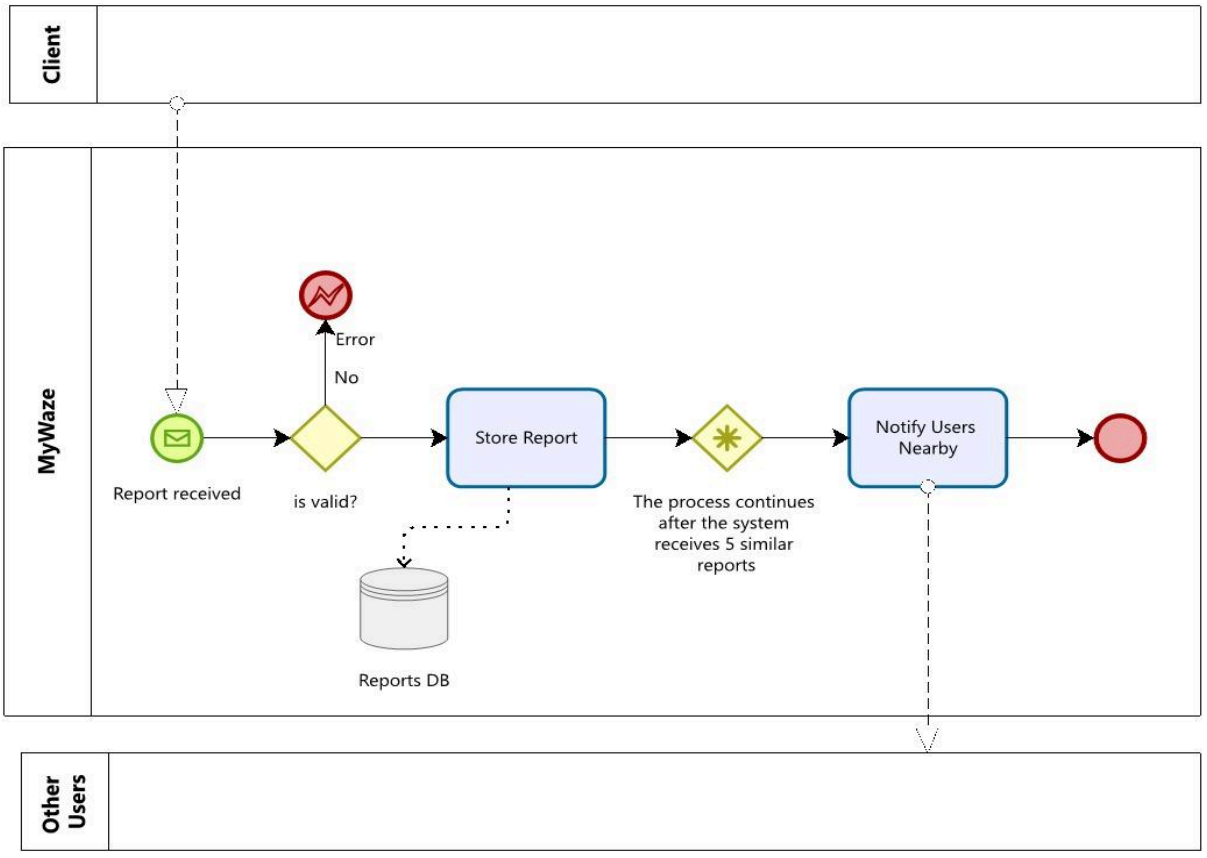


Figure 13 - BPMN for existing feature: User-Reported Incidents

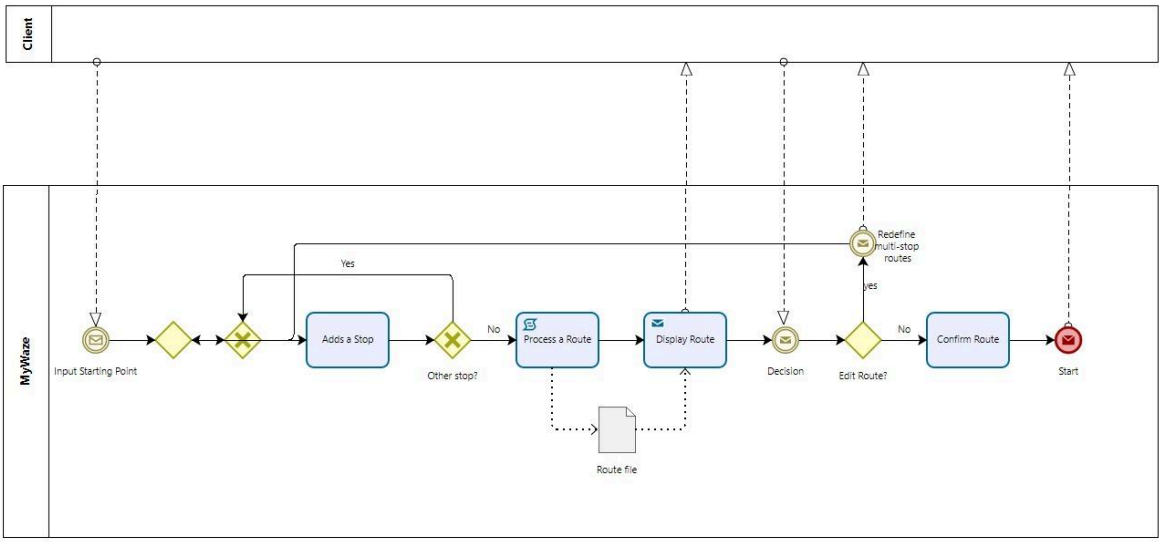


Figure 14 - BPMN for the new feature: Program Multi-Stop Route

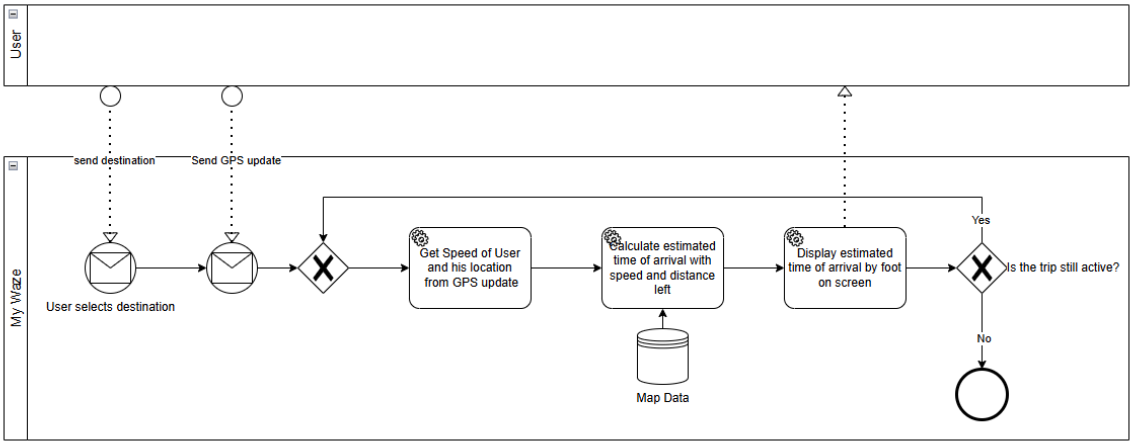


Figure 15 - BPMN for existing feature: Time of arrival by foot

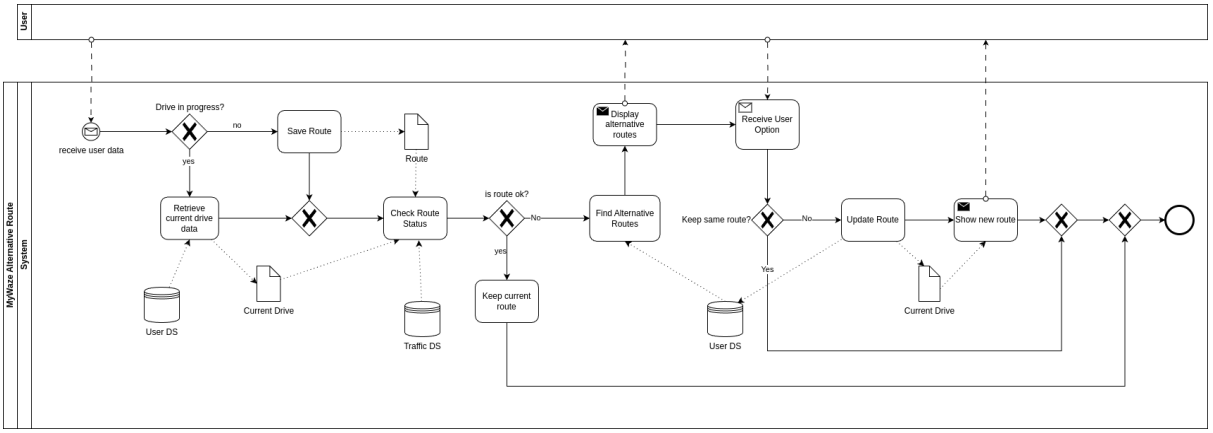


Figure 16 - BPMN for existing feature: Alternative Route Suggestions

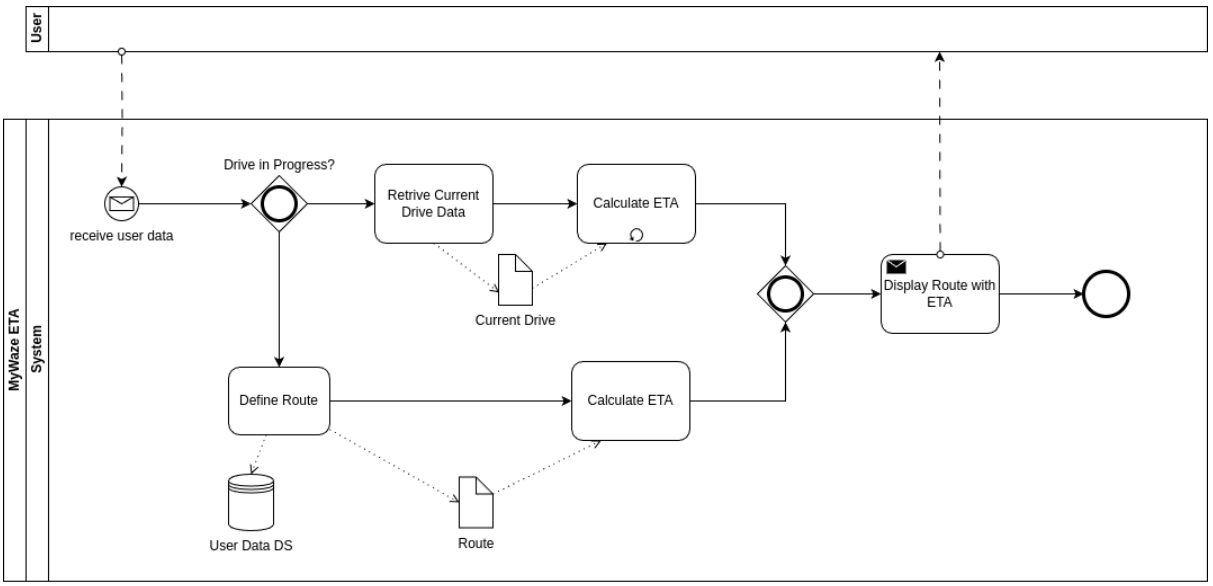


Figure 17 - BPMN for basic feature: Calculate estimated time of arrival

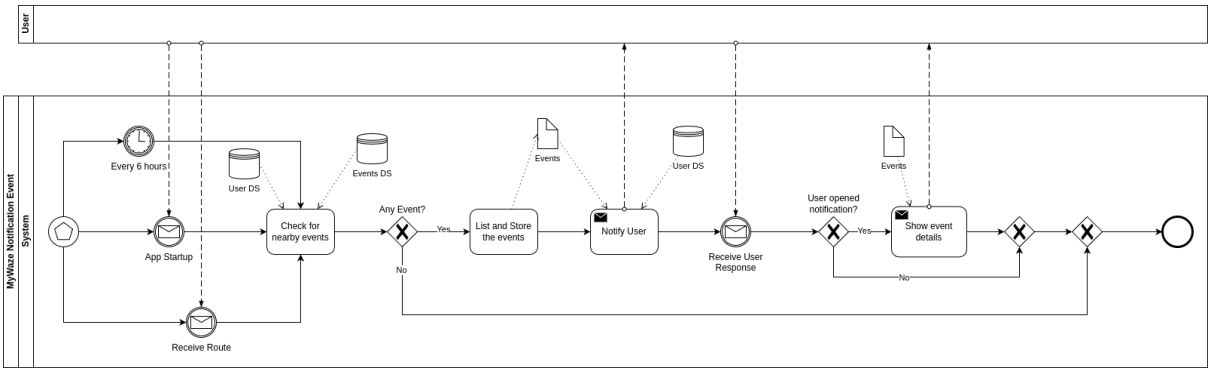


Figure 18 - BPMN for new feature: Notification Events

Requirements (Functional and Non-Functional)

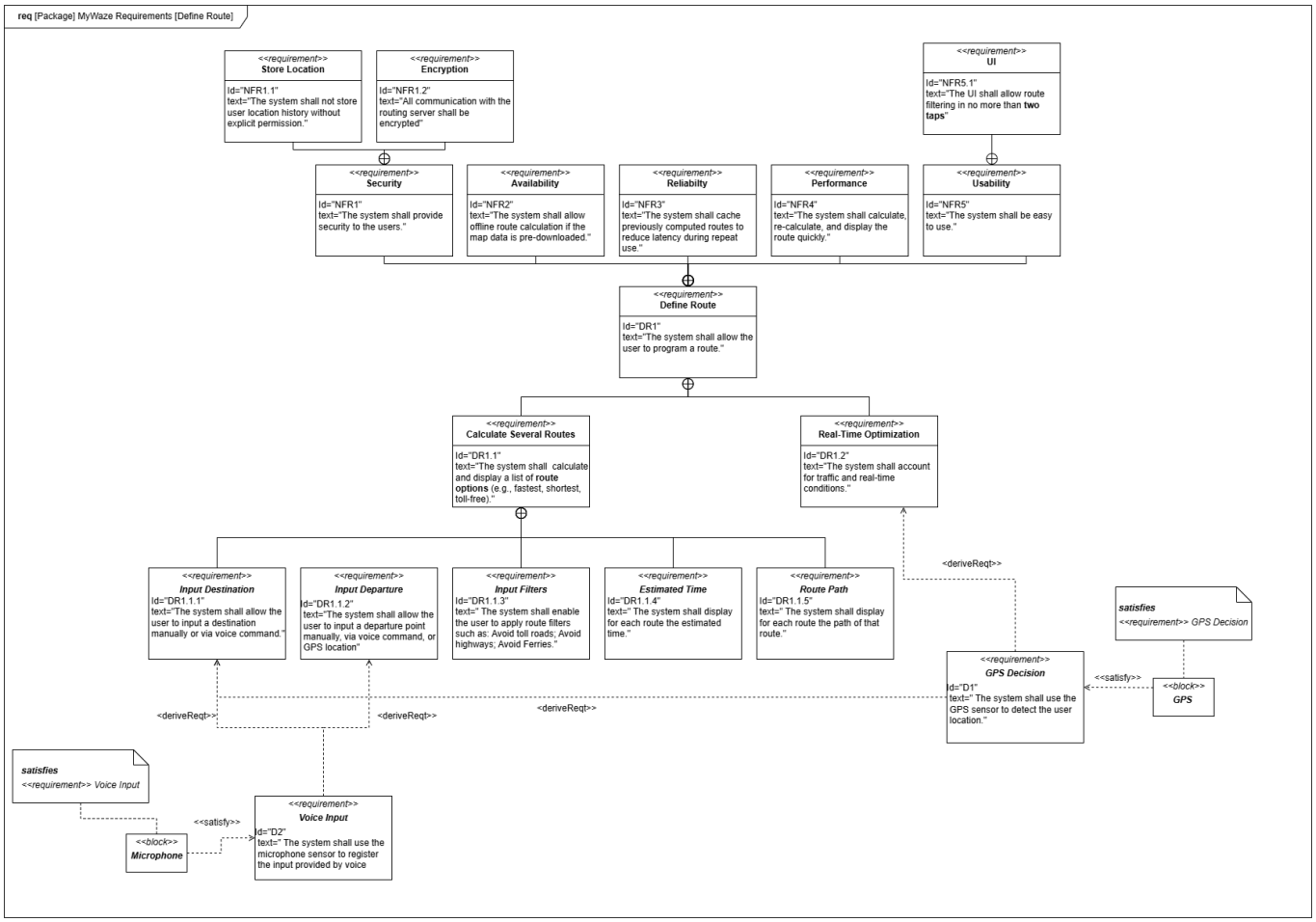


Figure 19 - SysML for the Basic feature: Define Route

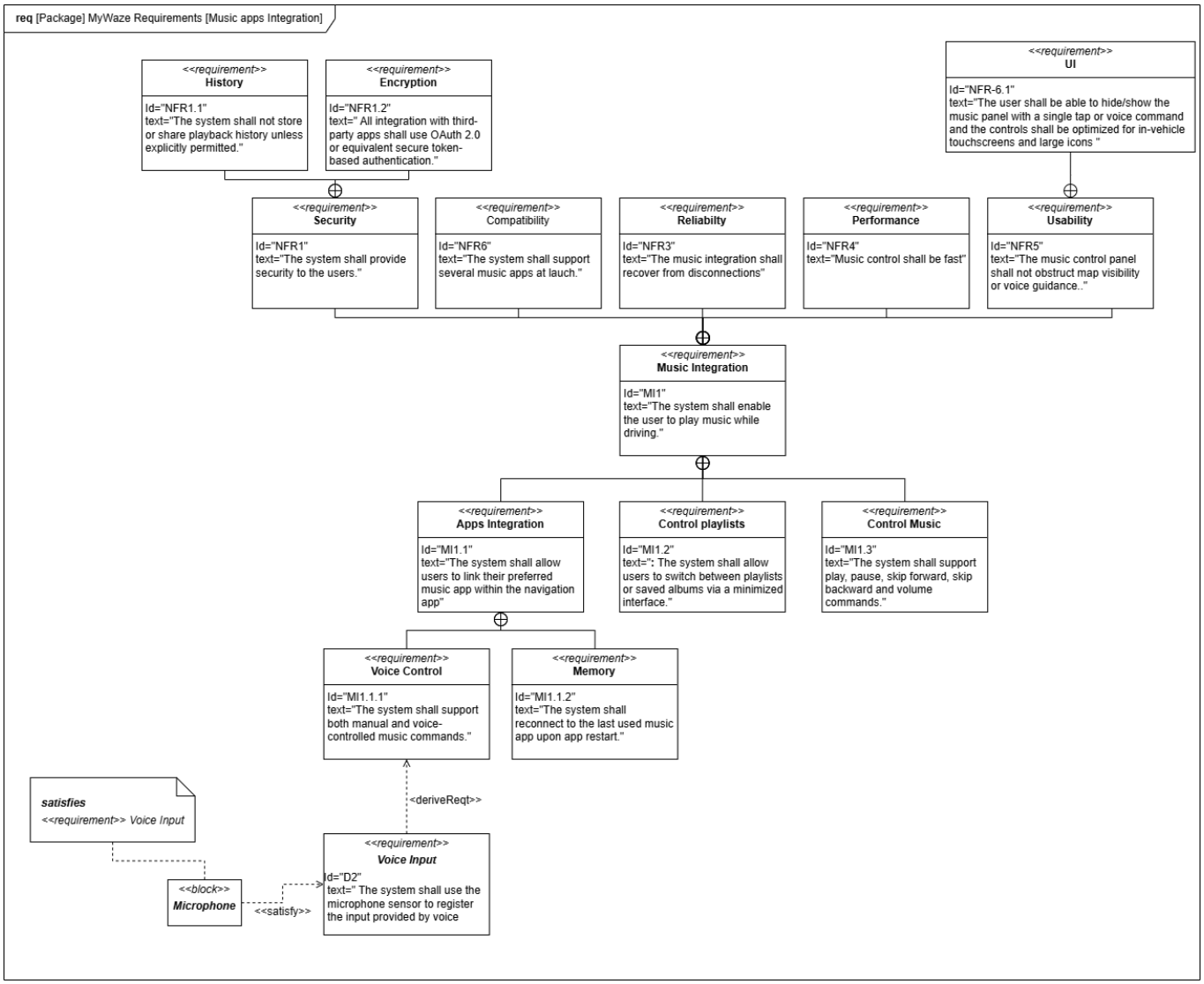


Figure 20 - SysML for the Existing feature: Music App Integration

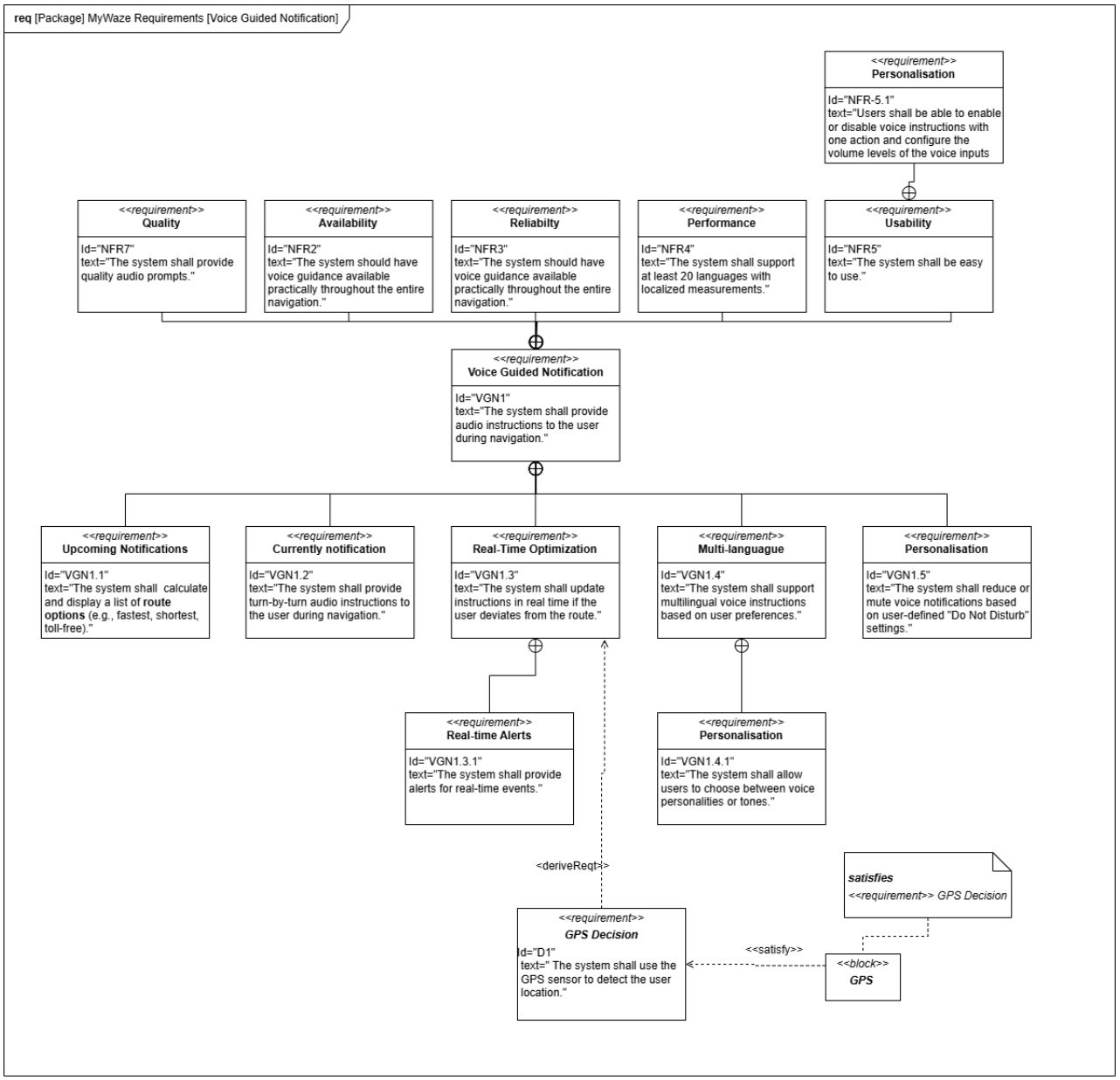


Figure 21 - SysML for the Existing feature: Voice Guided Notification

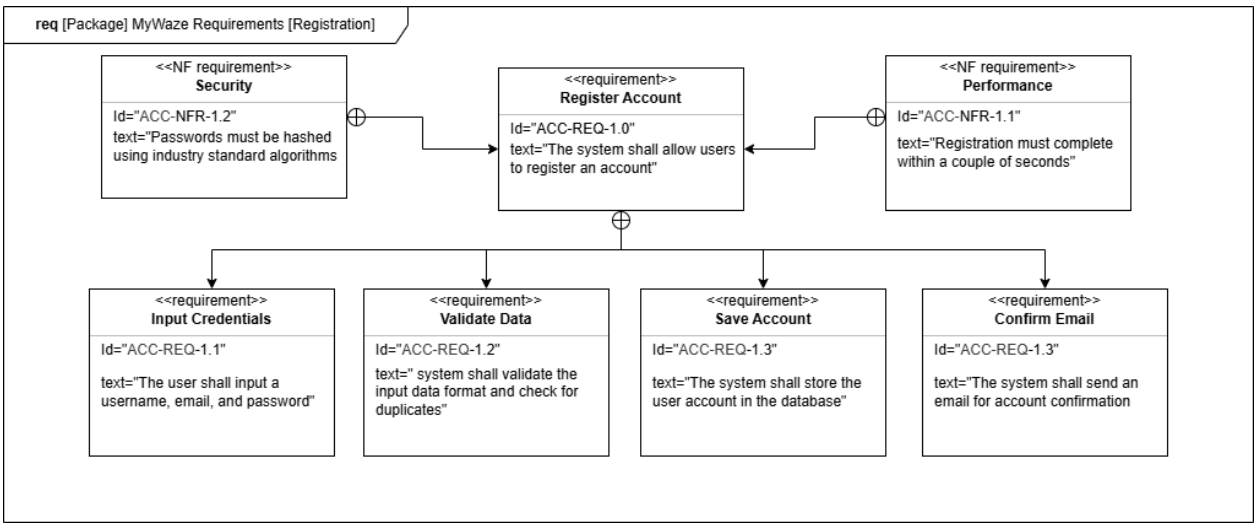


Figure 22 - SysML for the basic feature: Register User

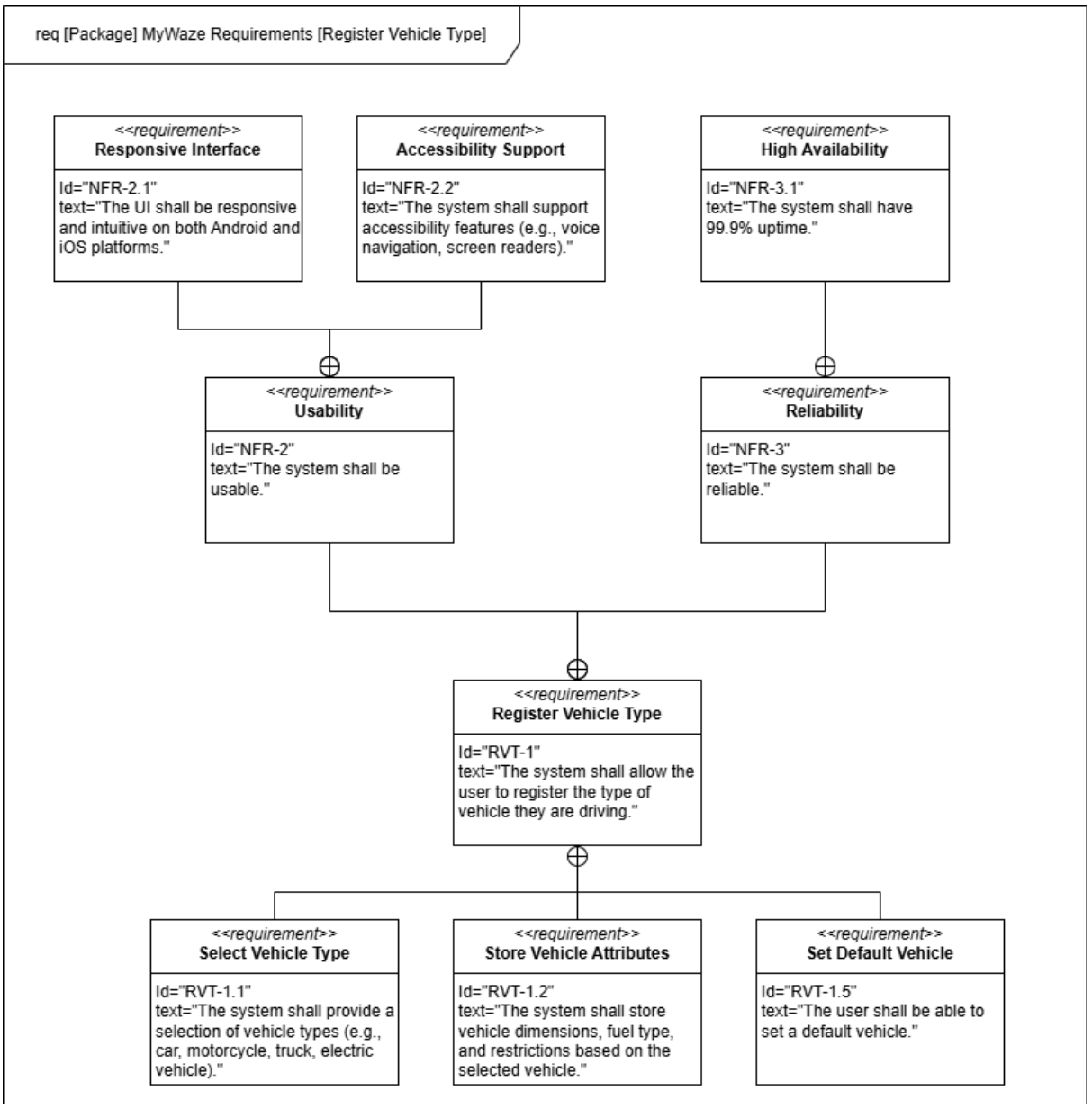


Figure 23 - SysML for the Basic feature: Register Vehicle Type

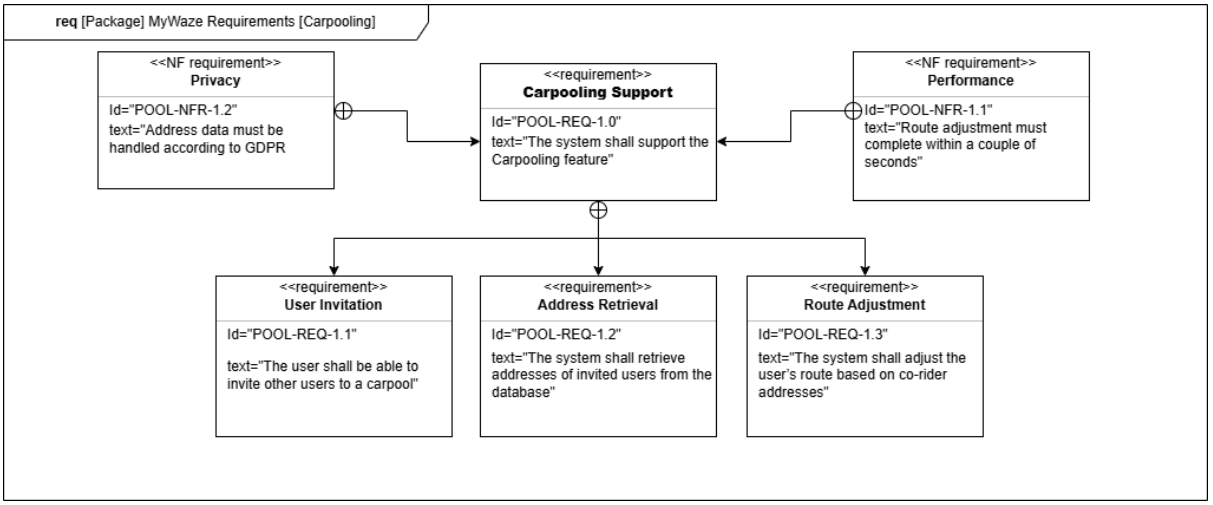


Figure 24 - SysML for the existing feature: Points of Interest finder

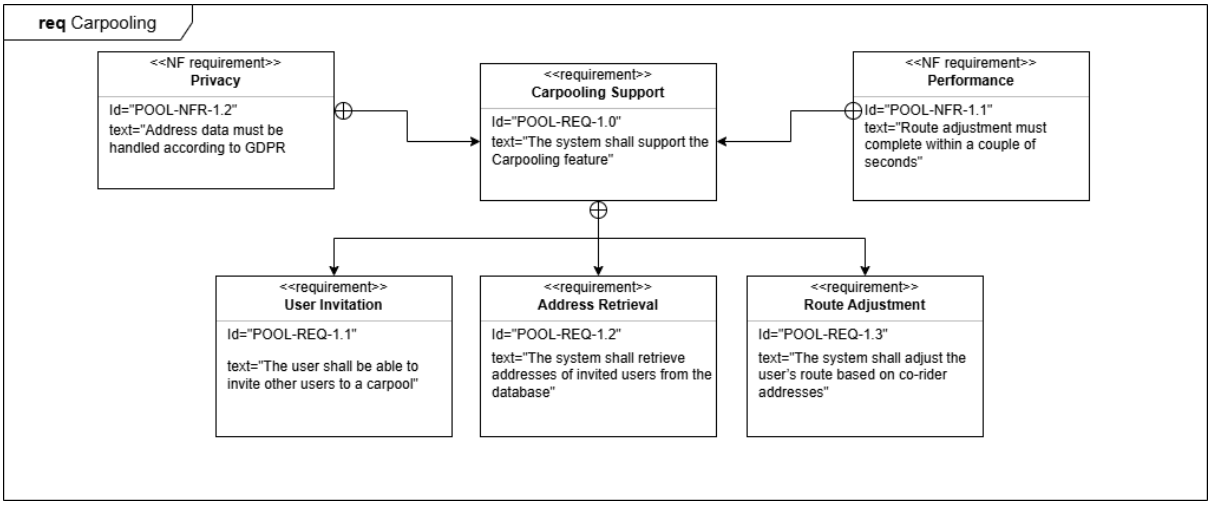


Figure 25 - SysML for the new feature: Carpool

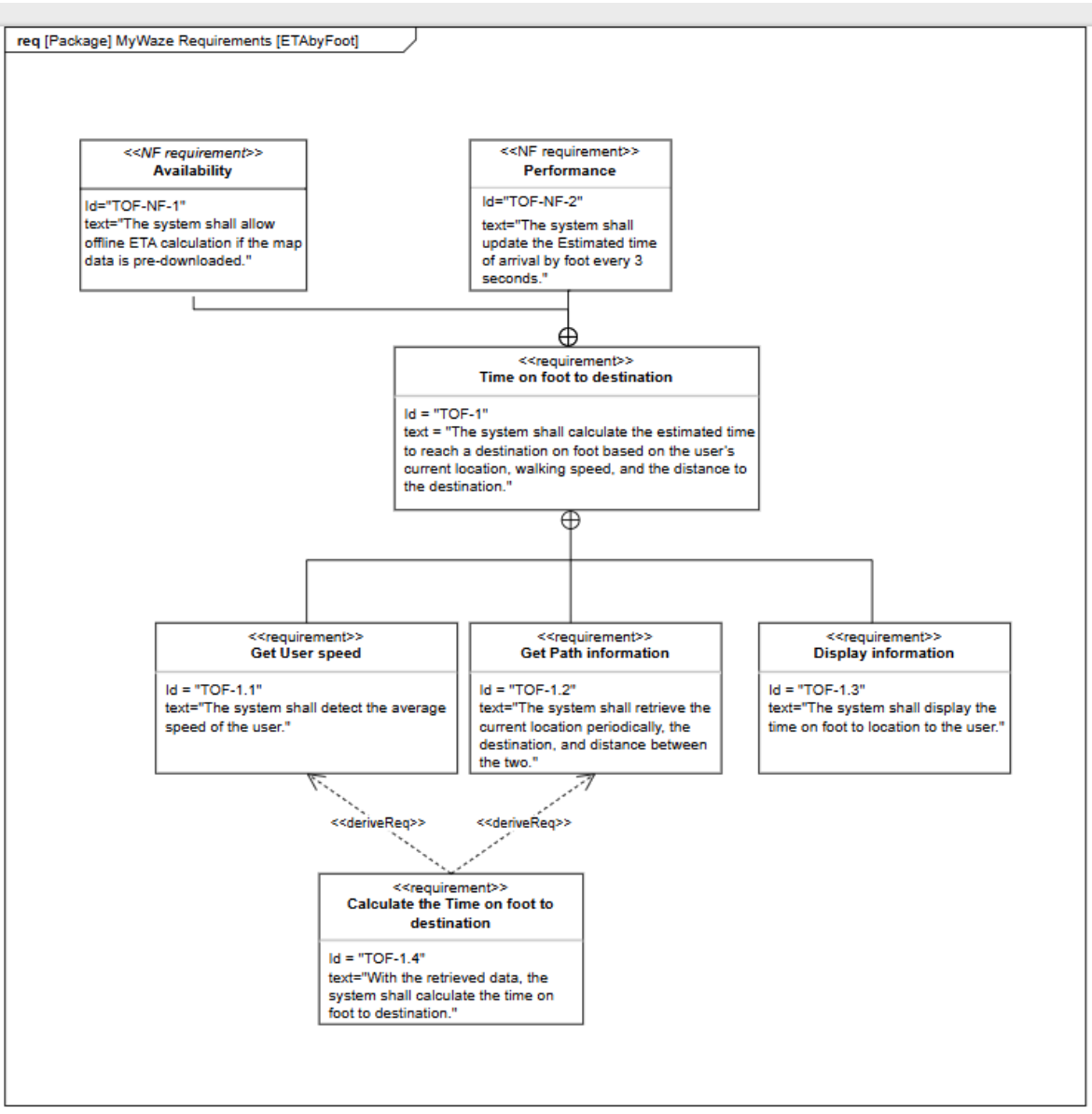


Figure 26 - SysML for the new feature: Time of Arrival by Foot

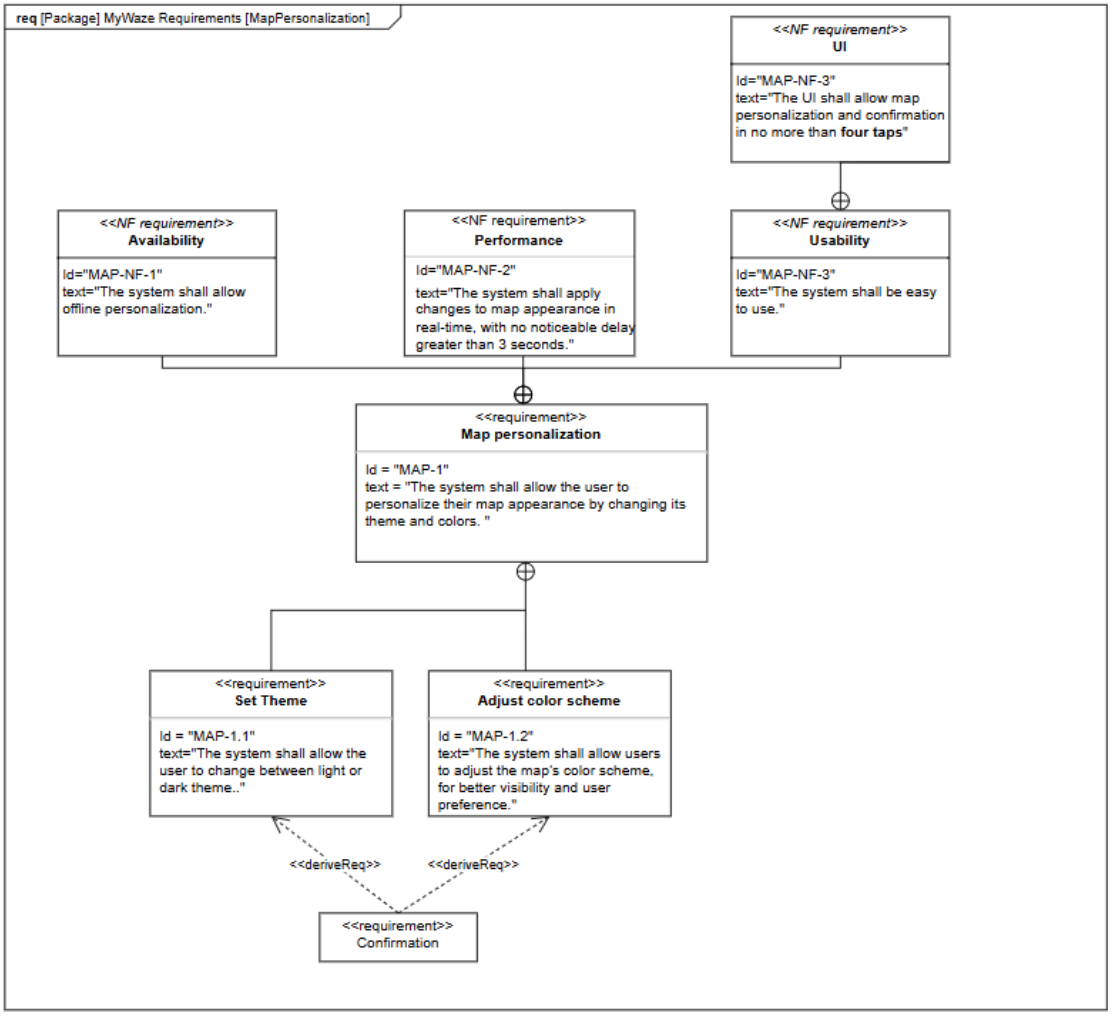


Figure 27 - SysML for the new feature: Map Personalization

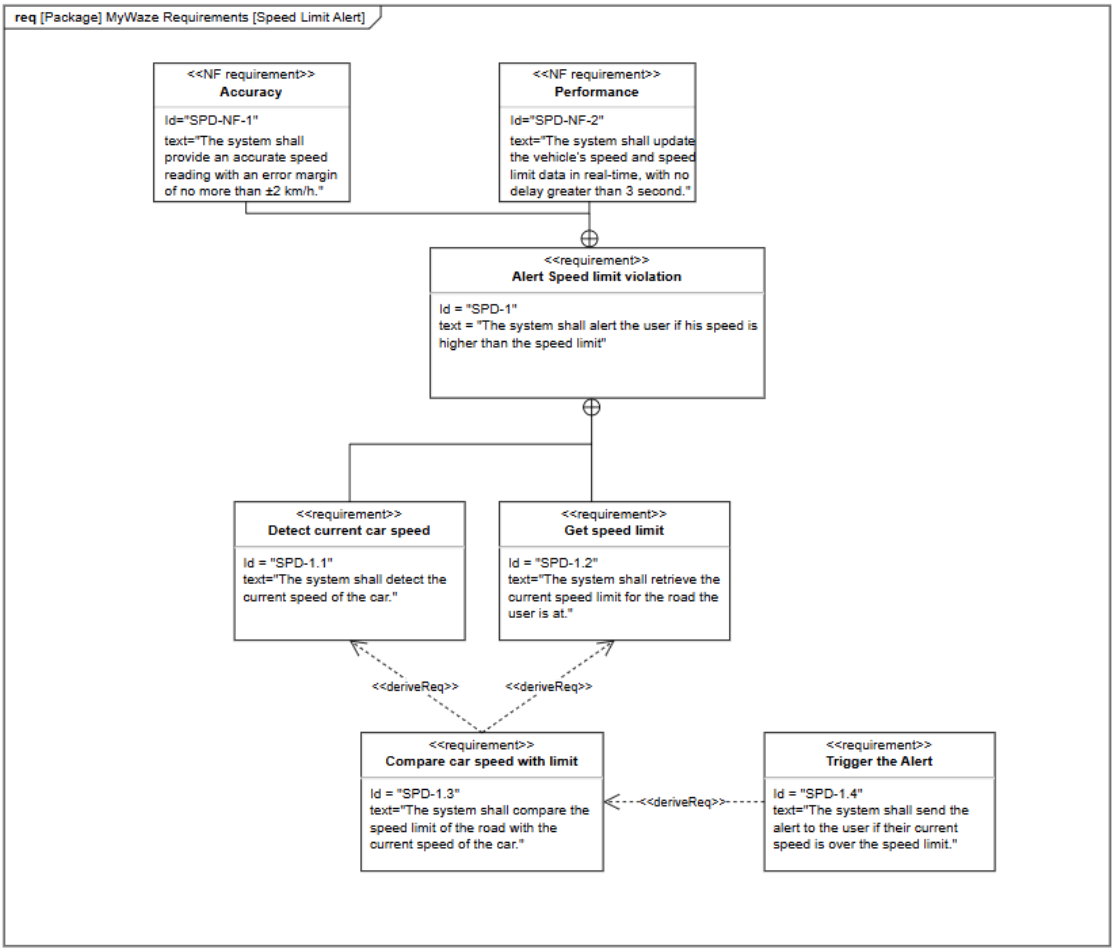


Figure 28 - SysML for the basic feature: Speed Limit Alert

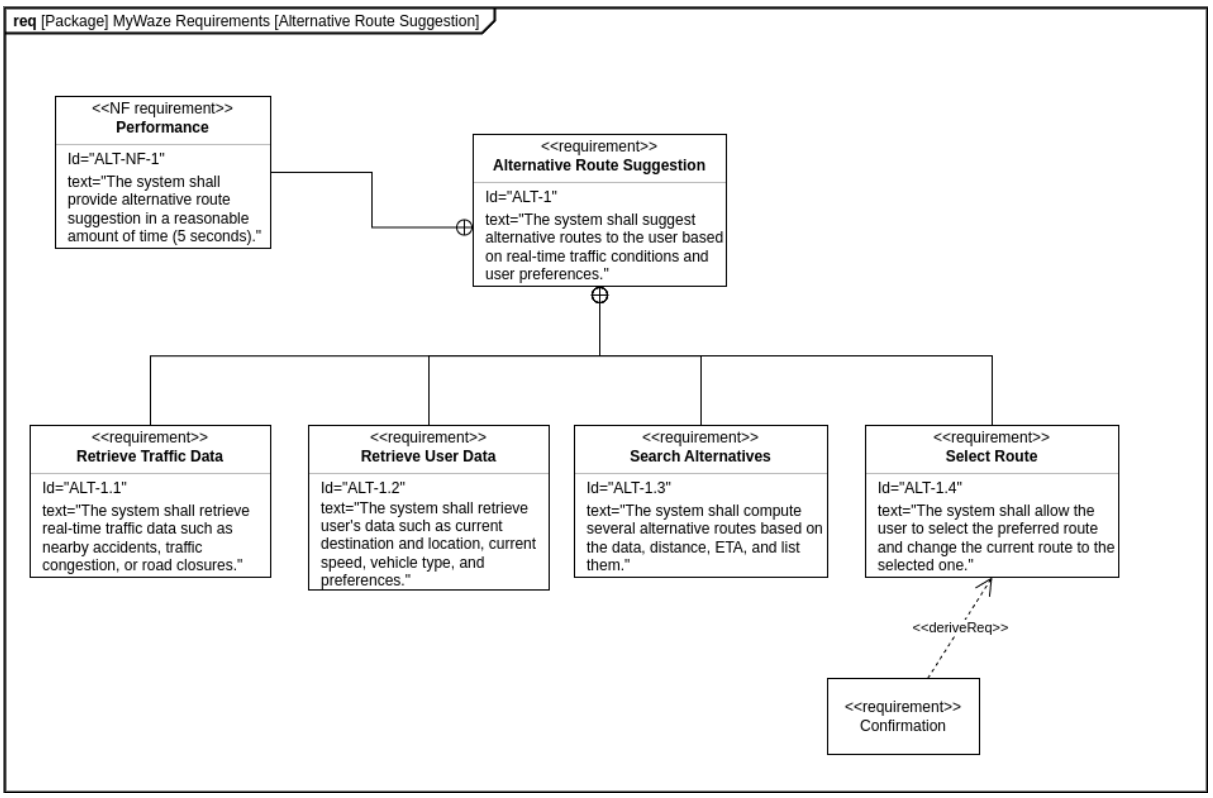


Figure 29 - SysML for the Existing feature: Alternative Route Suggestions

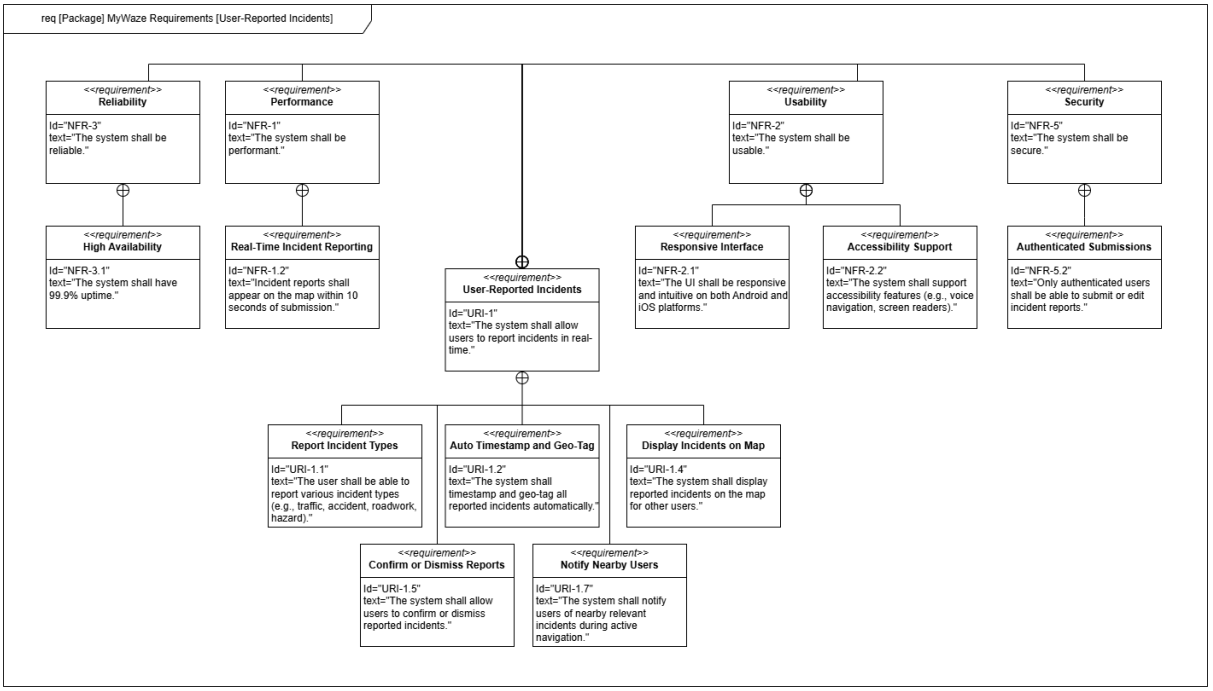


Figure 30 - SysML for the Existing feature: User-Reported Incidents

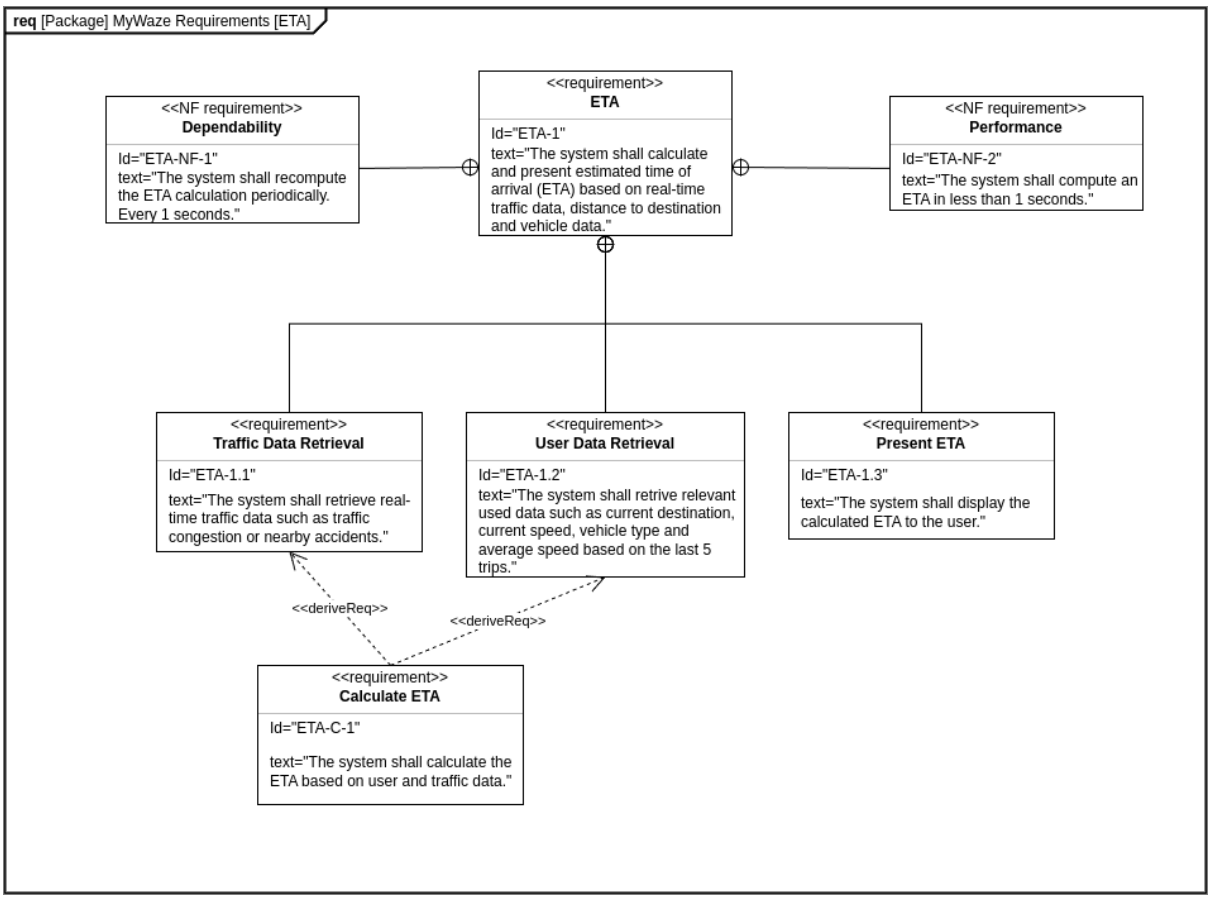


Figure 31 - SysML for basic feature: Calculate Estimated Time of Arrival

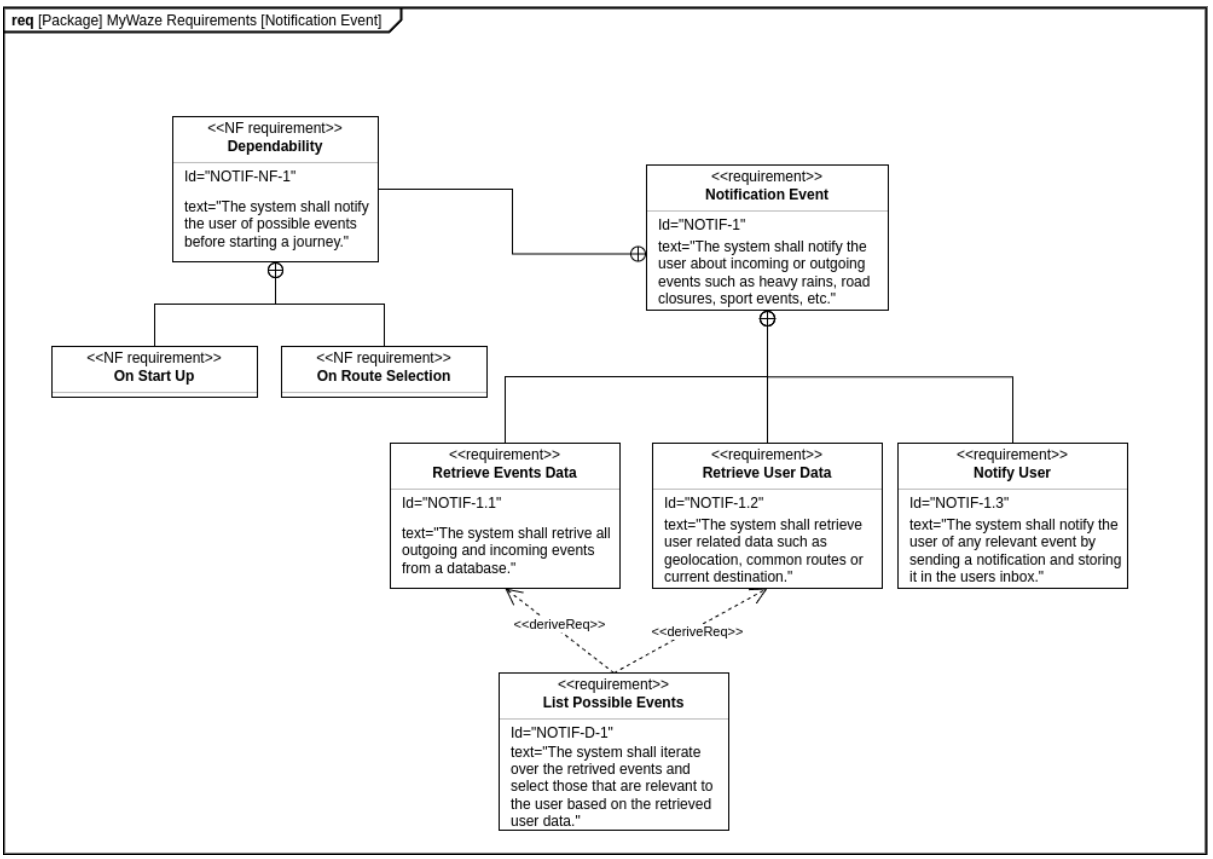


Figure 32 - SysML for the new feature: Notification Event

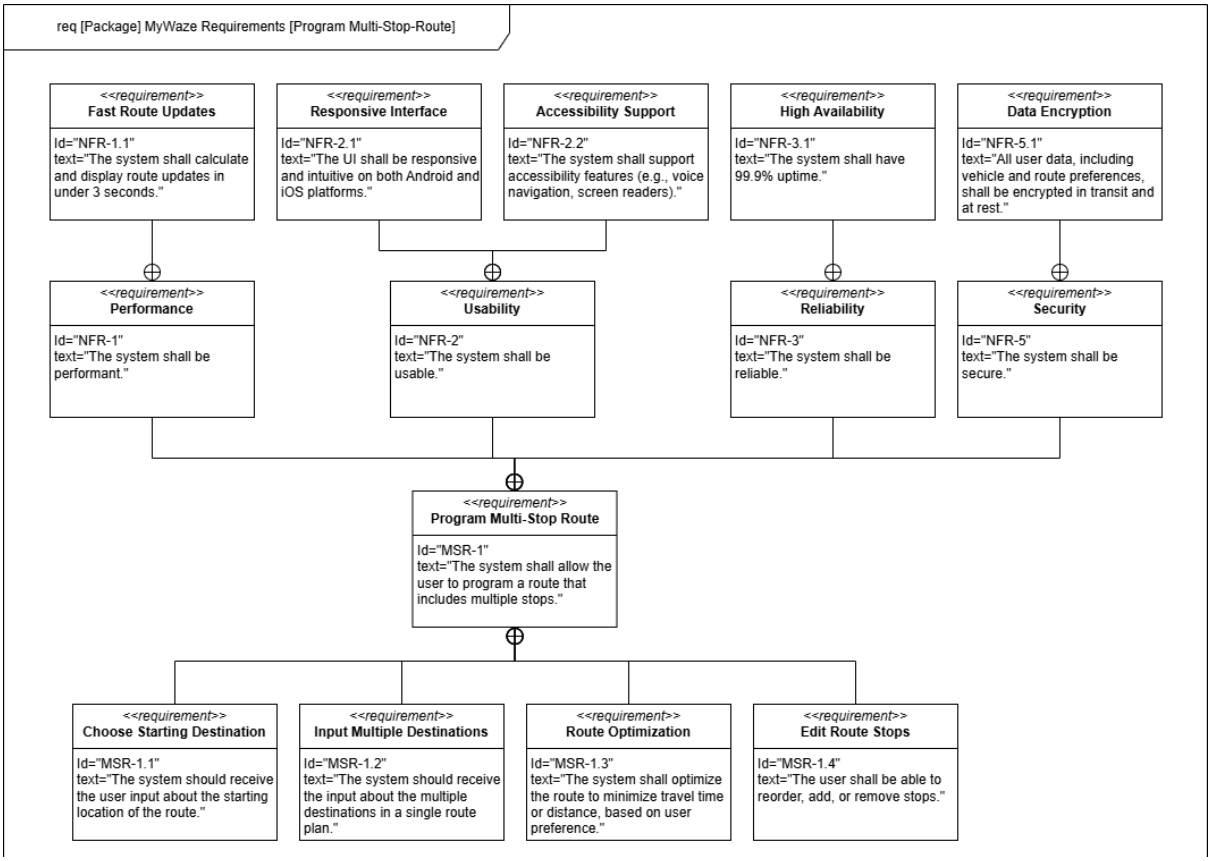


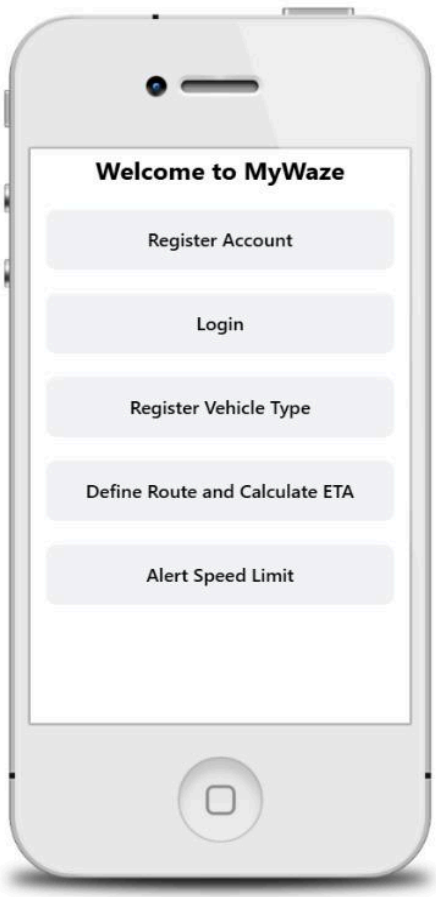
Figure 33 - SysML for the new feature: Multi-stop route

Prototype (Front-end and Back-end)

For the front-end of the project, we developed a simple user interface optimized for testing and demonstration purposes.
To simulate the experience of a real mobile application, we implemented a **phone frame** around the application content, providing a more realistic visual layout.
We also created a **main menu page** to allow easy access to all subpages, making it easier for the team and the professor to navigate and test each functionality individually.
The following pages were developed:

- **Login Page**: allows user authentication.
- **Register Page**: allows new user account creation.
- **Speed Limit Warning and Speedometer Page**: displays the current simulated speed and alerts if the speed limit is exceeded.
- **Register Vehicle Specifications Page**: allows users to enter details about their vehicle.
- **Define Route and ETA Page**: allows users to select a destination and calculate the estimated time of arrival.

The interface was kept simple and focused on functionality, enabling efficient testing of the prototype features developed during Sprint 1.



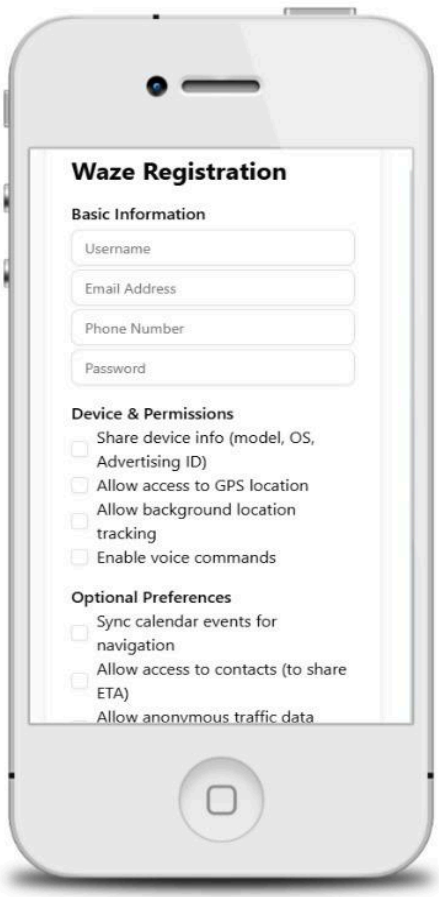
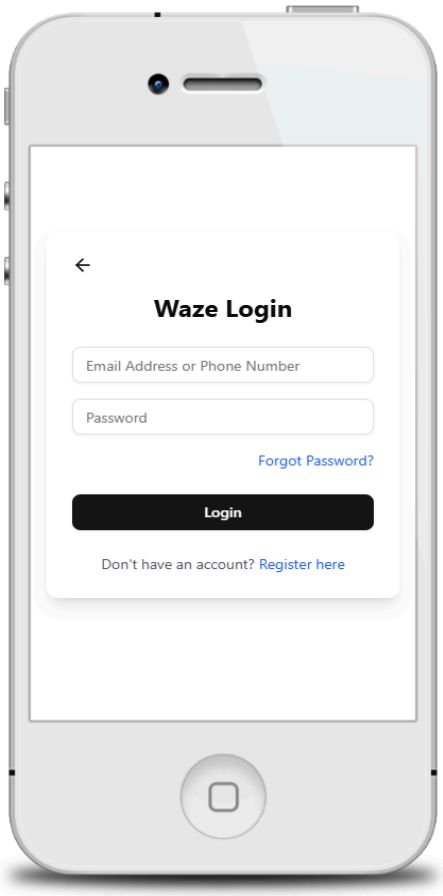


Figura 34 e 35 - Menu inicial e Registro de conta



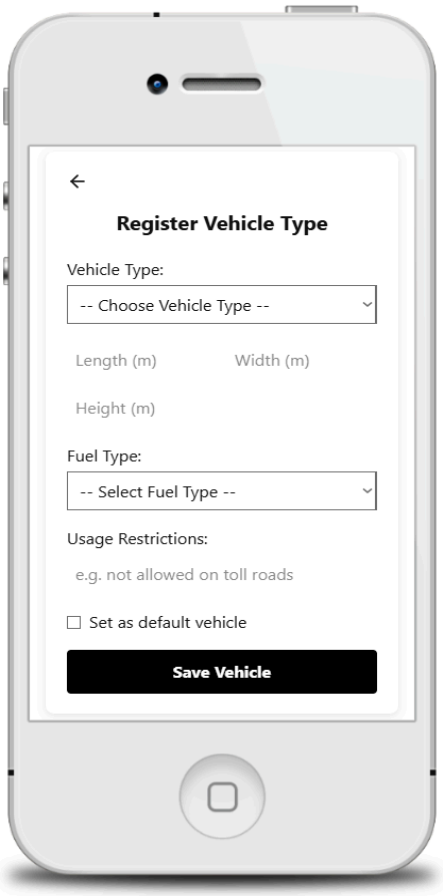
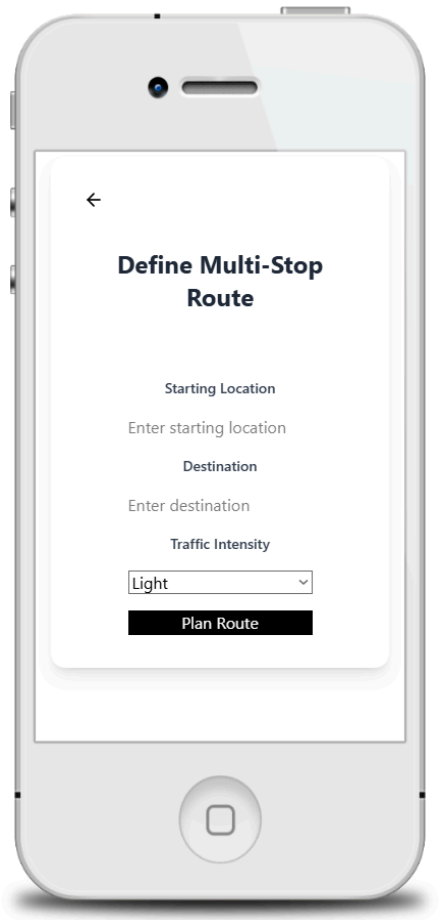
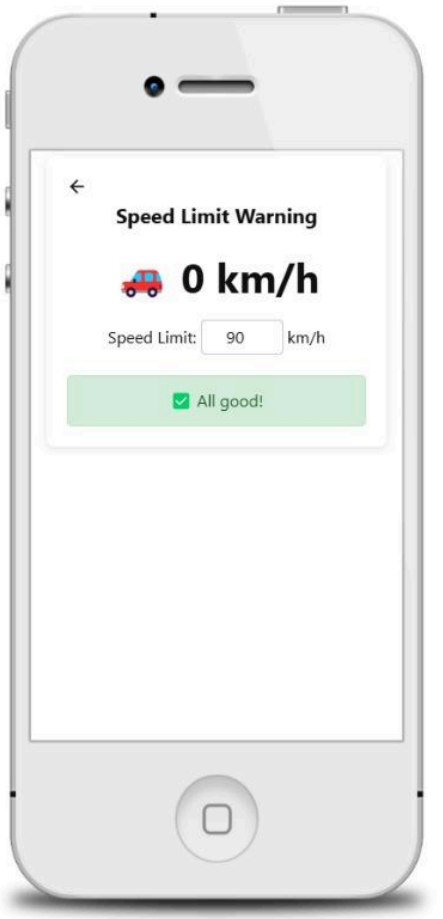


Figura 36, 37, 38 e 39 - Login, Register Vehicle, Route with stops e Speed control screen





When the system starts, it initially has only two users:
one administrator and one guest.
However, until this point, no differences have been implemented between the user experiences of the administrator and the guest.

While the program is running, new users can be registered.
These registered users are stored temporarily and will be deleted once the program stops running.

For simulation purposes, some user data — such as vehicle specifications (car type, dimensions, fuel type) — is stored in the browser's LocalStorage.
This allows the system to simulate data persistence during the testing phase, without requiring a real back-end server or database.

Figura 40 - Initial users

Proposal for Sprint 2

For the second sprint of the **MyWaze** project, the team proposes to implement the following features:

- Carpooling Feature (from existing system)
- Points of Interest Finder (from existing system)
- Favorite Locations Management (from existing system)
- Gas Station Price Comparison (from existing system)
- Custom Alerts Creation (from new proposals)

Selected Non-Functional Requirements (NFRs):

- **Performance**: Optimize system response times.
- **Security**: Ensure data encryption and safe login mechanisms.
- **Usability**: Maintain a mobile-friendly and accessible interface.
- **Availability**: Ensure system uptime during peak usage hours.

These features and non-functional requirements will allow the team to extend the core functionalities developed during Sprint 1, while focusing on key system qualities important for real-world usage.

Conclusion

In the first sprint of the **MyWaze** project, we successfully organized our team roles and completed the planned tasks. We identified and modeled 15 features, created BPMN diagrams, elicited functional and non-functional requirements, and developed a working prototype for the main functionalities.

Despite some challenges related to scope and integration, the team maintained good collaboration and adapted quickly. The deliverables meet the objectives defined for Sprint 1 and provide a solid foundation for the second sprint, where we will focus on system architecture, additional features, and final integration improvements.