

---

Functionality specification

< Project name >

< Arstotzka PTMS >

## Functionality specification

<12.01.2026 >

Functionality specification

< Project name >

## Version history

Version	Date	Author	Comment

## Document certification

Name	Role	Company	Date	Signature

## Content

Version history .....	1
Document certification.....	2
Introduction .....	3
Scope of the project.....	4
Concepts .....	4
Role description.....	4
Requirements related to functionality .....	4
IoT embedded device with NFC readers .....	4
Reporting unusual activity.....	4
viewing real time transit schedules .....	4
Real time tracking of position of transport vehicles.....	4
Managing public transport routers .....	4
Visualise passenger statistics.....	4
Requirements related to characteristics.....	4

## Introduction

This is a new and improved PTMS system for the state of Arstotzka. It includes a mobile and web application which lets passengers register on the transport vehicle via NFC, lets the passengers see the active rides and ride schedule. The operators will also be able to manage, add and remove transport routes and see relevant user data.

## Scope of the project

A mobile app that will be available in English, German, Italian and French, a web application that will be available in English and German, under 500ms response time on both applications. The applications will have the possibility to track routes and rides in real time, the mobile app will work via NFC to be able to validate passengers on the rides with an IoT device,

## Concepts

### Role description

Passengers will be everyone using the transportation system, commuting normally.  
Transit operators are the people managing and driving the transport vehicles.

## Requirements related to functionality

### IoT embedded device with NFC readers

used by passengers for registering when they enter vehicles.

### Reporting unusual activity

Passengers will be able to report unusual activity inside the app and on the website.

### viewing real time transit schedules

The passengers will be able to see real time transit schedules.

### Real time tracking of position of transport vehicles

Passengers will be able to see the live location of transport vehicles.

### Managing public transport routers

The transit operators can add and modify lines and their stops.

### Visualise passenger statistics

The transit operators will be able to see a visual representation of the passenger statistics.

## Requirements related to characteristics

The app response time has to be, under 500ms for a smooth experience both web and mobile. The mobile app will be displayed in English, German, Italian and French and the web version in English and German. The communication between NFC readers and the servers needs to be encrypted.