NEA: Traffic Simulator

Joshua Smart

June 2021 - June 2022

Contents

1 Analysis

1.1 Project Overview

Physical infrastructure is a large and complicated subject, encompassing everything from running water to mains electricity. Below I have listed the main features included in physical infrastructure:

- Transportation
  - Road and highway networks
  - Mass transit systems
  - Railways
  - Canals
  - Seaports
  - Airports
  - Bicycle paths / pedestrian walkways
- Energy
  - Electrical power network
  - Natural gas pipelines
  - Petroleum pipelines
  - Coal production and processing
- Water management
  - Drinking water supply
  - Sewage collection
  - Drainage systems
  - Irrigation systems
  - Flood control systems
  - Coastal management
- Communications
  - Postal service
  - Telephone networks
  - Mobile phone networks
  - Television and radio stations
  - Internet services
  - Communications satellites
  - Undersea cables
- Solid waste management
  - Landfills
  - Incinerators
  - Hazardous waste disposal

1.2 The Problem

Development of transportation is a very expensive and time consuming process, so being able to evaluate the efficiency and cost-effectiveness of road layouts beforehand would be very beneficial. This project aims to develop a road network simulator that can be used to evaluate the efficiency of inputted designs under a range of different traffic conditions.

1.2.1 End user

1.3 Current Systems

1.3.1 System 1

1.3.2 System 2

1.3.3 System 3

1.4 Research

1.5 Proposed Solution

1.6 Objectives

2 | Documented Design

3 | Technical Solution

4 | Testing

5 Evaluation