# Chapter 1

# System Architecture

## 1.1 Introduction

In the **??** and **??**, the logical layering and the responsibilities of the components were introduced but how they fit together and work in harmony is still a mystery. In this chapter, I will put the pieces of the puzzle together by discussing of the actual architecture of the system and its behaviours with increasing levels of detail.

## 1.2 Top-level architecture

The top-level architecture is a simplified architecture where many low-level components are being grouped together and treated as a singular composite component. It is shown in the figure 1.1. The following components in the top-level architecture are composite component:

- Remote Sensing (See section 1.3)
- Backend (See section 1.4)
- Frontend (See section 1.5)
- Real-time (See section 1.6)
- Governor (See section 1.7)

### 1.2.1 Initialisation

The initialisation process is referring to a device such as a microcontroller attempting to connect with the server before it can send data and receive commands.

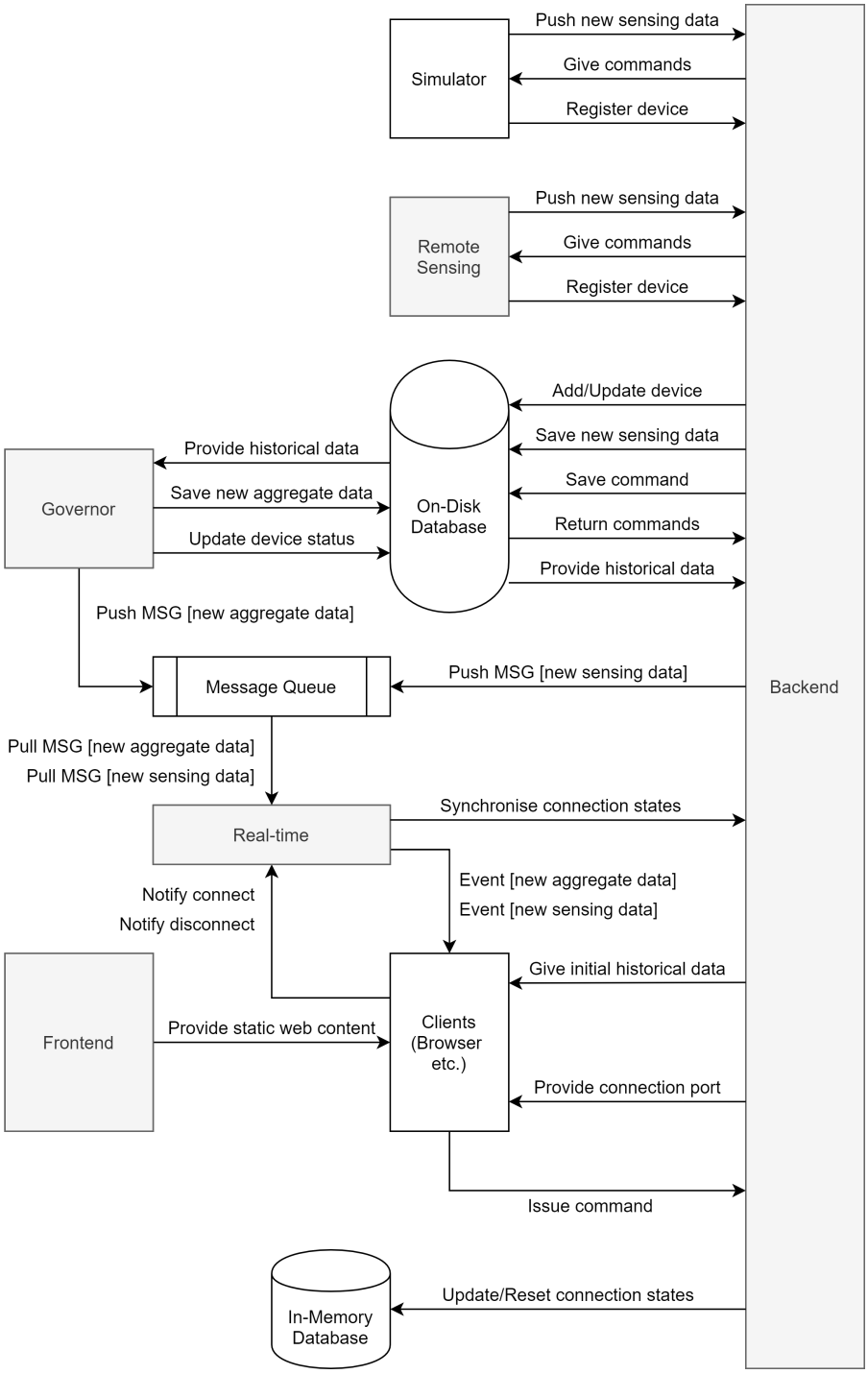


Figure 1.1: Top-level architecture of the proposed system.

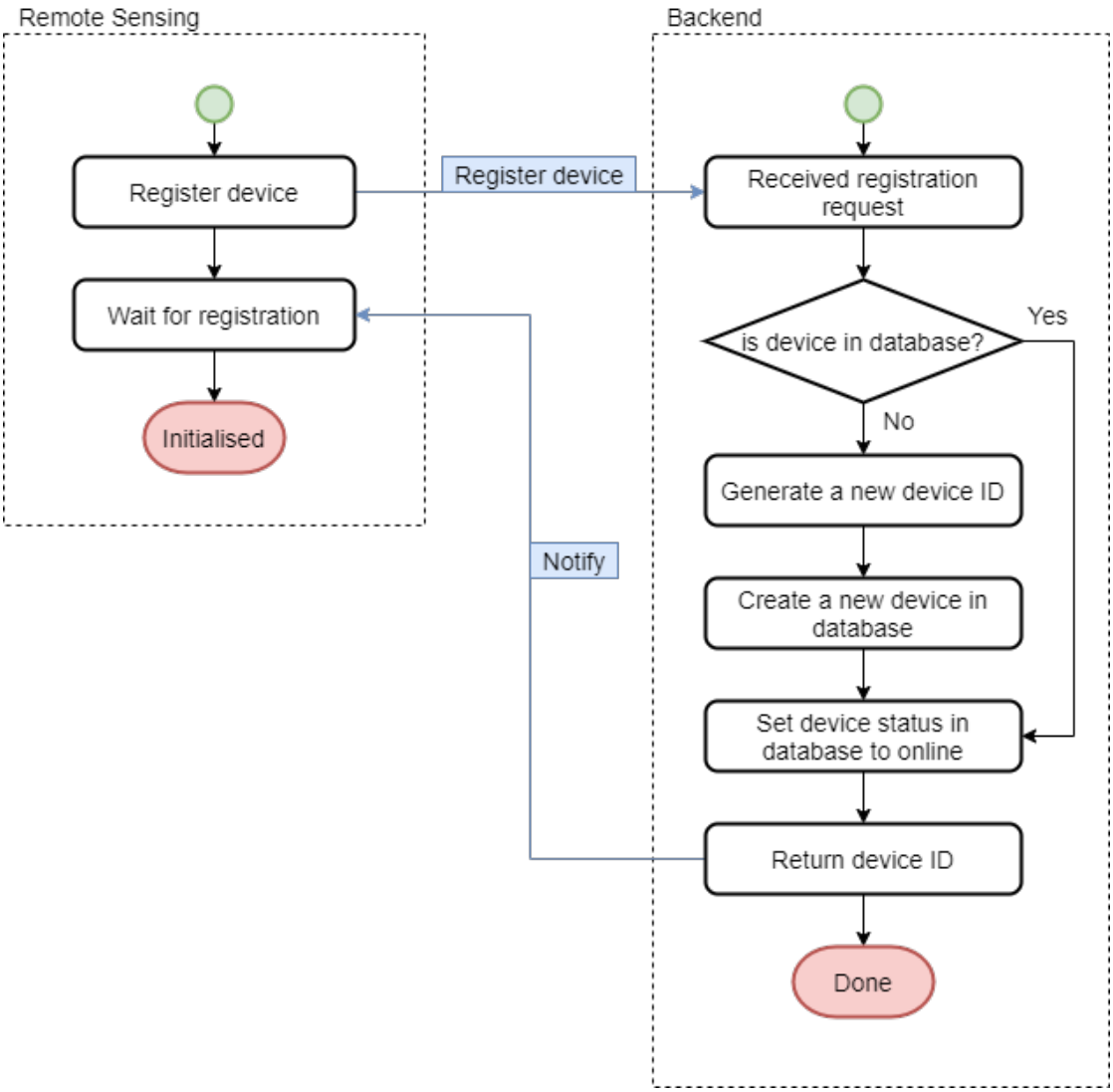


Figure 1.2: The initialisation process.

### 1.2.2 Monitoring

The monitoring process starts from recording the data from sensors, to visualising the data at a client such as a web application.

### 1.2.3 Controlling

## 1.3 Remote sensing

sdfsdf

## 1.4 Backend

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## 1.5 Frontend

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## 1.6 Real-time

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## 1.7 Governor

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## 1.8 Simulator

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## 1.9 Client