

Architecture Design, TI2806

Blazin and the Goons

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1 Introduction

In this document the design of the system being built will be discussed. The architecture of the system will be explained as well as split into smaller parts to explain further.

1.1 Design goals

- **Performance**

Since we need to improve the workflow of the camera crew performance is of utmost importance. The system needs to work fast with as little delay as possible. Too much delay can lead to problems when cameras are not in position when they need to be.

- **Reliability**

The system is being designed to lift pressure and workload off of the camera crew. If the cameras are not in the right preset at the right time or some other malfunction happens, the crew can't trust the system, especially not in a live environment. If they can't trust the system they also can't focus on the camera work.

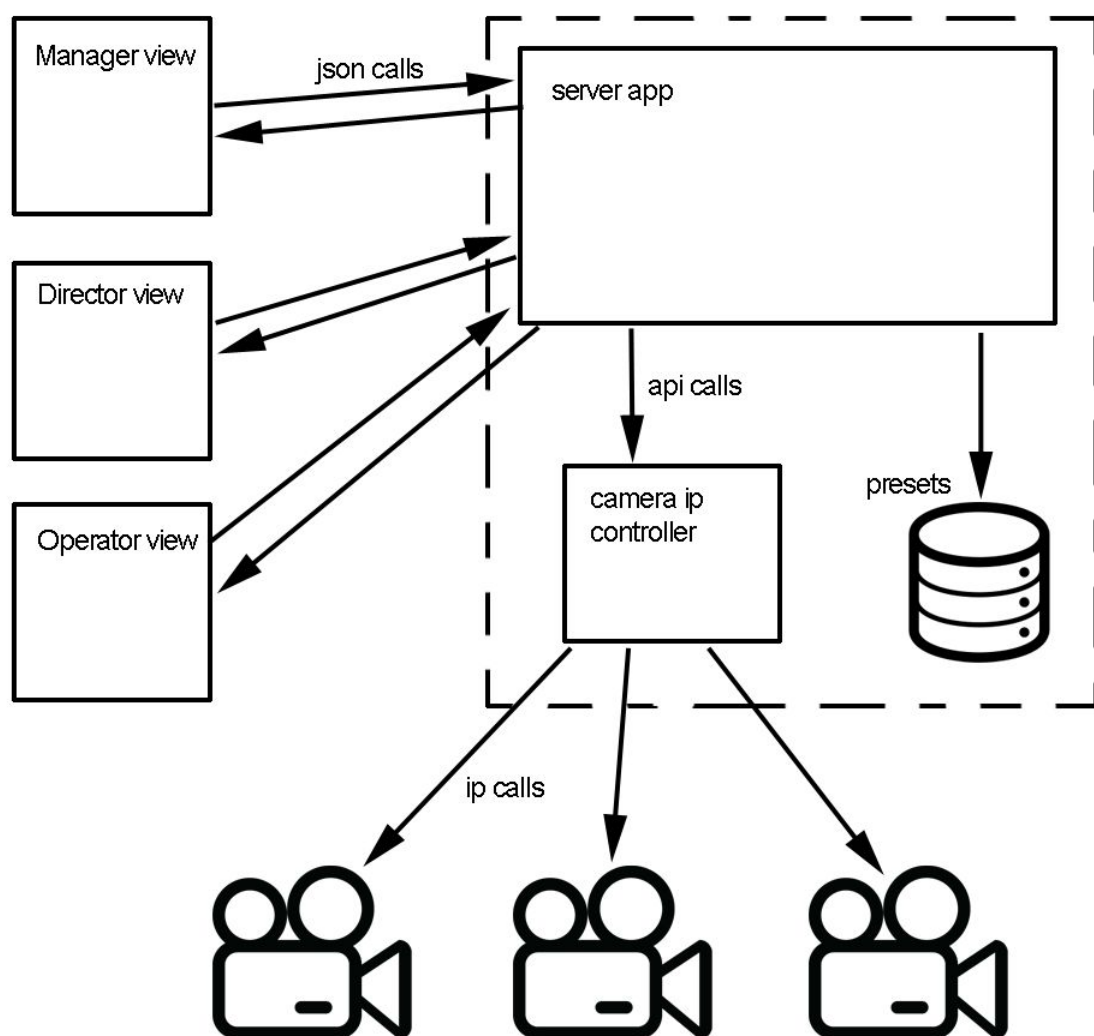
- **Securability**

If the server is not going to be local it should be unable for outsiders to go in the system and control the cameras or change the presets for obvious reasons.

2 Software architecture views

This chapter will explain the architecture of the system. The first paragraph will show the system as a set of subsystems and how they interact with each other. The second paragraph will explain the relation between the hardware and the software of the system. The third paragraph shows how the system manages its data. Lastly, the fourth paragraph explains how the system stays concurrent and prevents unwanted interactions.

2.1 Subsystem decomposition



The whole system is divided into subsystems:

- **Views**

There are different types of views which each a different purpose. A manager view

for creating presets and timelines for live performance, an operator view for the camera operators and a director view which gives an overview of the different cameras.

- **Database**

There is a database which holds the preset position the cameras are in. This database can also be extended with login information if the server won't be local. The script will also be stored in the database.

- **Camera ip controller**

A camera ip controller which converts api calls the server app will send into ip calls the cameras can handle.

- **Server app**

The server app here is the central part. It delivers the views to the client's computer, fetches presets from the database and converts the json calls to api calls for the camera ip controller.

2.2 Hardware/software mapping

Most of the hardware/software mapping is explained in the previous paragraph. A user can use a pc to connect to the server, which in turn will return one of the views. The user can then use those views to send calls to the server which will then handle those as explained in the previous paragraph.

2.3 Persistent data management

As of now, an in-memory database is used, causing all data to be lost when the server shuts down. Once we deploy the full database system, an adequate system will be used, like MySQL or some similar system.

2.4 Concurrency

As all views share the same database and running video process, concurrency can be an issue if not tackled rightly. To make sure no concurrency issues arise, the code must be properly tested using different threads to simulate multiple access.

3 Glossary

View - A way the program represents itself through a user interface/web page.