


Multi Drone Task Allocation

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Overview

- Background
 - Recap
 - User Interface Specification
 - High Level Design
 - Low level Design
 - Project Plan
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Background

- ▶ **Multi drone task allocation (MDTA)** consisting of coordinating a team of drones and assigning them tasks
- ▶ This task includes the following subtasks:
 - Target search
 - Task Allocation
 - Drone monitoring

Recap

User Requirements and Requirements Analysis

- **Target search**
 - Coordinates of the locations
- **Task allocation**
 - Task efficiency
- **Drone monitoring**
 - Collision avoidance
 - Restricted area avoidance

User Interface Specification

GUI Elements:

- Welcome screen
- Information and Hints sections
- Search and retrieval interface
- Data entry interface
- Output display section
- Data access section

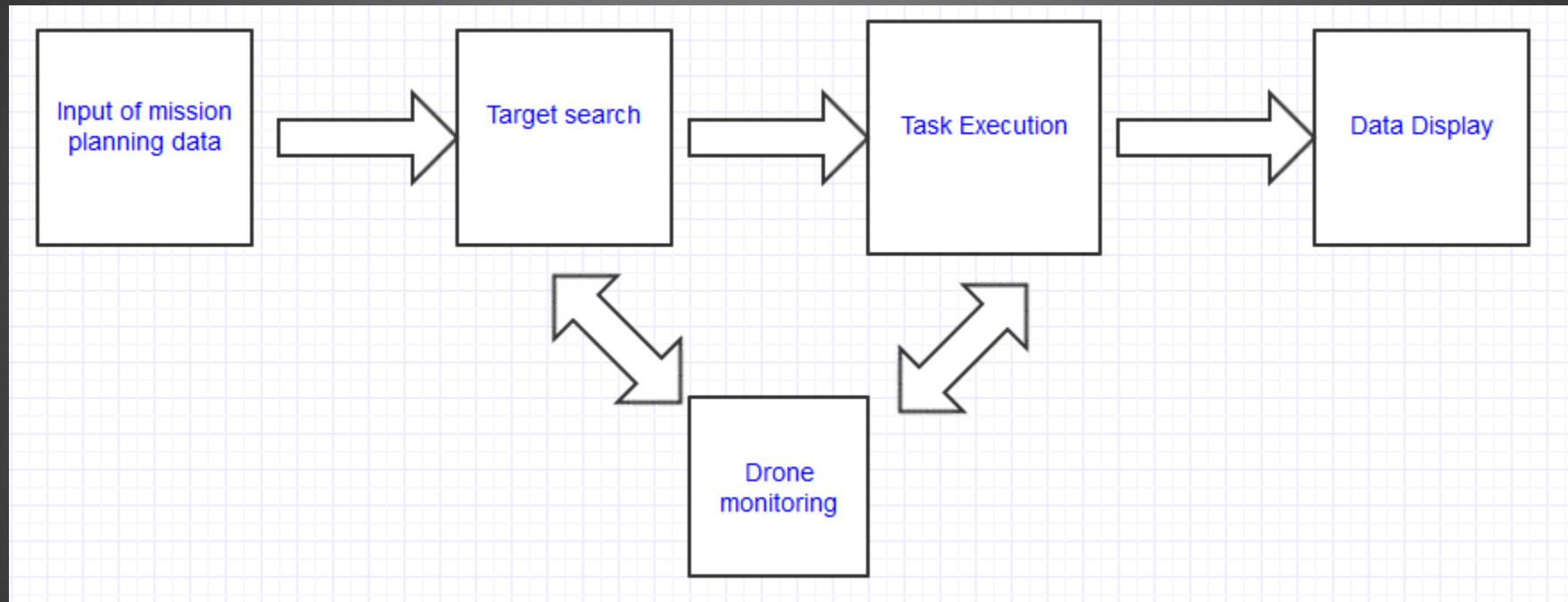
The screenshot shows a window titled "Input" with a background image of several drones flying in a blue sky. The interface contains several input fields and buttons:

- A "Latitude" label followed by a text input field containing the value "18.33222".
- A "Longitude" label followed by a text input field containing the value "35.80900".
- A "Latitude" label followed by an empty text input field.
- A "Longitude" label followed by an empty text input field.
- A "Latitude" label followed by an empty text input field.
- A "Longitude" label followed by an empty text input field.
- At the bottom, there are two buttons labeled "Previous" and "Next".

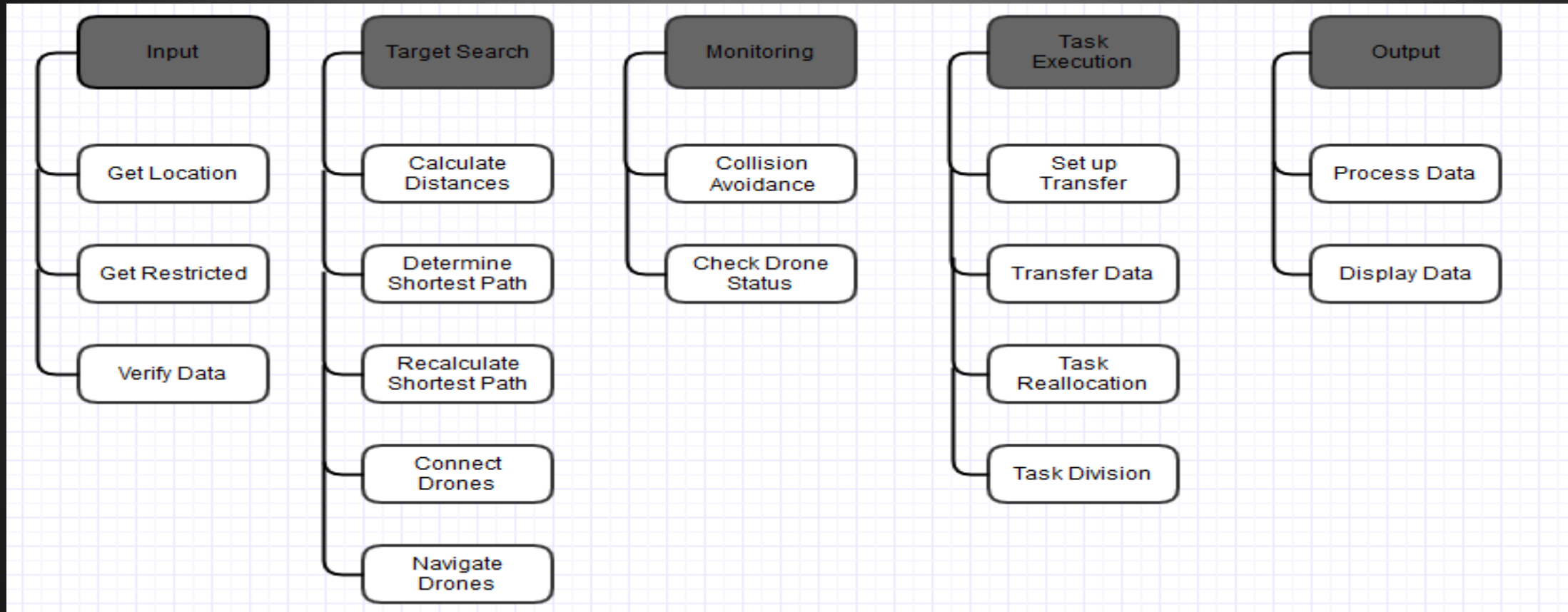
High level design

- Input of mission planning data
- Target search
- Task execution
- Drone monitoring
- Data display

Interaction between Subsystems



Low level Design



Project Plan

Term1

- Identify User Requirements, Analyse User Requirements, Literature Survey
- Become Acquainted with OpenCV

Term2

- Identify Objects and Classes in the OOD and analyse the Class methods and attributes, Design UI
- Familiarise myself with the Parrot SDK and API

Term3

- Create the Input , Target Search and Task Execution Modules
- Develop the Task Monitoring Application

Term4

- Test the application against the User Requirements
- Optimise where possible and iron out bugs



References

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