

## Exercise 01

- Name: Quirin Ecker
- Student ID: k12310122
- Group: 21

### Part 1 - Questionnaire

#### Q1: What is Dronology about, and what are its two main goals?

- The first goal of dronology is to provide a research environment, where students can study aspects like systems engineering, software engineering and cyber physical systems.
- The second goal is that it should provide a framework for controlling UAS (Unmanned Aerial Systems). This includes forming different formations and coordinating flights and should help fields like search and rescue, surveillance, and scientific data collection.

#### Q2: Name the layers of the Dronology architecture, explain which layers exchange messages and how Dronology communicates with the Unmanned Aerial Vehicles (UAVs).

According to the figure provided, there are three layers. Those being named CORE, Services and UI. There is also an external component called GCS. The UI layer communicates with the Services layer, while the Services layer communicates with the CORE layer. The CORE layer uses the CGS Middleware internally to communicate with the external CGS component.

#### Q3: Who are the Dronology stakeholders? For this, consider the stakeholder onion diagram from the SE lecture and its four layers: the kit, our system, the containing system, and the wider environment.

- The Kit
  - Software Engineers
  - Hardware Engineers
- Our System
  - Project Managers
  - Maintenance Teams
- The Containing System
  - Customers
  - Business Partners
    - Universities
    - Companies
- The Wider Environment
  - Government Agencies
  - General Public
  - Competitors

#### Q4: Which are the available artifacts for Dronology? For each artifact, summarize which information they provide

- Components: Components are self contained units in a software system. They are used throughout the system.
- Use Cases: Use Cases specify the different scenarios/interactions that the system must support. Its a step by step instruction on how the user interacts with the system and how the system responds.
- Requirements: The Requirements list specifies everything that is required to meet the goal of the users and stakeholders. It describes what the system must do and how it should behave.

## Part 2 - Use Case Diagram

- Group: 21
- UseCase: UC3

