Team Number: Group 32

Project Title: Multiple Drones Coordination System

Report Date: 1/20/2025

Part one:

All team members have detailed tasks listed on Teams Planner: YES or NO; if NO, explain.

No, we currently have tasks for short-term, mid-term, and long-term, we are just waiting to confirm deadlines that are reasonable and sufficient for each member.

Please answer the following questions:

1.   Have you met as a team this past week? If yes, give date/time, and the members attended the meeting. If no, explain.

No, one of our team members is overseas and can't meet through conventional means and other members have conflicting work schedules, so we try to meet various times with whoever is available.

2.   Have you met with the sponsor as a team? If yes, give date/time, and the member attended the meeting. If no, explain.

Not yet, we haven't had a meeting scheduled from the sponsor this semester yet.

3.   Describe verbally the tasks completed the past week and the challenges faced.

In the past week, we have created reasonable, efficient tasks to be used as an outline for the remainder of our project. The biggest challenges we continue to face are meeting all together as one group with every member present.

4.   Describe the tasks to be completed the coming week.

Brenden M. (Simulation Management Subsystem)

- Review the current placeholder environment in UE4.

- Identify gaps and areas for improvement in the existing simulation.

- Research GIS mapping integration with UE4.

- Set up tasks deadlines to efficiently track progress.

Matthew P.(User Interface)

- UI Refinement:

  Finalize the layout and design of the user interface based on feedback from initial prototypes. Ensure consistent styling, intuitive navigation, and responsiveness across all screens.

- Integration Planning:

  Outline and prepare for integrating the user interface with AirSim for real-time simulation data. Collaborate with team members working on AirSim to identify required APIs and data formats.

Tutku Gizem G. (Target Detection Subsystem)

- Refining the Target Detection Subsystem

  Improving the accuracy and speed of the machine learning model for real-time data processing.

- Preparing for Field Testing

Matthew Wyatt (Data Management and Communications Subsystems)

- Requirement Analysis: Analyze the requirements set by our proposal. No issues here.
- Database Review: Review MySQL database set up from last semester. May have some issues in syncing with other subsystems in the future, but is currently stable and functional.

Student Name	# Tasks completed past week	# Tasks not completed	# Tasks for next week
Brenden Martins	1	0	3
Matthew Paternoster	1	0	2
Matthew Wyatt	2	N/A	2
Tarek Kayali	1	N/A	N/A
Tutku Gizem	1	0	3

Name of the Member: **Brenden Martins**

Report Date: **1/20/2025**

List the following:

1.   All tasks completed the past week (in this example template, tasks between 1/20 and 1/26) (completion date in parenthesis) <mark style="background-color:#00FF00">Highlight these tasks headers in green.</mark>

    No tasks toward the project were completed and are still in progress.

2.   Tasks you attempted but did not get to complete due to time constraints or other factors in the week (in this example template, tasks between 1/20 and 1/26).

    Refining the 3D environment. This task is an ongoing task and doesn't necessarily have a due date for it. This task requires tweaks and changes that are constantly ongoing.

<mark style="background-color:#00FF00">For **each** task you have completed **during the past week**:</mark>

Name of the Member: Matthew Paternoster

Report Date: 1/20/2025

List the following:

1.   All tasks completed the past week (in this example template, tasks between 1/20 and 1/26) (completion date in parenthesis) <mark style="background-color:#00ff00">Highlight these tasks headers in green.</mark>

2.   Tasks you attempted but did not get to complete due to time constraints or other factors in the week (in this example template, tasks between 1/20 and 1/26). <mark style="background-color:red">Highlight these tasks in red.</mark> (attempt date in parenthesis)

<mark style="background-color:#00ff00">For **each** task you have completed **during the past week**:</mark> **Avoid leaving filler or template text in your reports**

1.   <mark style="background-color:#00ff00">Task #1/Completion of MDCS Press Release Document</mark>

2.   Short description – these descriptions form the basis of the final project report

      a.   Implementation:

          Key details, such as refining technical explanations, aligning the content with the project's goals, and ensuring the language was suitable for a press release, required multiple iterations. Balancing technical accuracy with accessibility for non-technical audiences took longer than anticipated.

      b.   Results:

          The document effectively presents the MDCS's features and benefits, highlighting its scalability, real-time coordination capabilities, and innovative design. Each section was refined to align with the project's goals and provide a compelling case for adoption.

3.   Outcome of the task activity

      a.   Completing the MDCS press release document advanced the project by providing a polished, professional communication tool to showcase the system's capabilities to stakeholders, potential users, and investors. The document effectively highlighted the project's objectives, technical innovations, and real-world impact, helping to:

      Generate Interest: It created a compelling narrative that attempts to capture the attention of disaster response teams and organizations.

Clarify Goals: Writing the document helped the team solidify the core features and benefits of the MDCS, ensuring alignment on project priorities.

Name of the Member: Tutku Gizem Guder

Report Date: 1/20/2025

List the following:

1. All tasks completed the past week (in this example template, tasks between 1/20 and 1/26) (completion date in parenthesis) <mark>Highlight these tasks headers in green.</mark>

I have not completely finalized any of the tasks towards the project, and I have a slow-steady progress towards it.

2. Tasks you attempted but did not get to complete due to time constraints or other factors in the week (in this example template, tasks between 1/20 and 1/26).

Refining the target detection subsystem in order to process more accurate data from sensors (like cameras), LIDAR, and GPS to identify target objectives on the ground. I think I will need to work on integrating machine learning models to enhance accuracy. At the moment this task is my primary focus, and is still ongoing. The more enhancement or improvement I make, the more I spend time on it.

<mark>For **each** task you have completed **during the past week**:</mark>

Name of the Member: Matthew Wyatt

Report Date: 1/20/2025

List the following:

1. All tasks completed the week before the past week (completion date in parenthesis). This is copied from the last report, and if this report is the first one, skip.

2. All tasks completed the past week (completion date in parenthesis)

    a. (1/26/2025) ==Requirement Analysis==

    Description: Analyzed the project requirements based on the proposal. This involved understanding the scope, objectives, and deliverables of the project.
    Outcome: Established a clear understanding of the project requirements, which will guide the subsequent phases of the project.

1	Requirement Analysis	Everyone	2 Weeks	05/11/2024	19/11/2024
2	Target Detection Subsystem	Tutku Gizem Guder	5 Weeks	20/11/2024	20/12/2024
3	Data Management & Communication Subsystems	Matthew Wyatt	3 Weeks	20/11/2024	10/12/2024
4	Drone Control Subsystem	Tarek Kayali	4 Weeks	21/12/2024	21/01/2025
5	Simulation Management Subsystem	Brenden Martins	4 Weeks	21/12/2024	21/01/2025
6	User Interface Subsystem	Matthew Paternoster	4 Weeks	22/01/2025	19/02/2025
7	Integration & Testing	Everyone	3 Weeks	19/02/2025	10/03/2025

    b. (1/26/2025) ==Database Review==

    Description: Reviewed the MySQL database that was already created to ensure it meets the project requirements. This involved checking the schema, data integrity, and relevance of the data.
    Outcome: Confirmed that the MySQL database itself is suitable for the project, ensuring that we have access to the necessary data. However, we may need to migrate the location of the server.

3. All tasks you are currently working on or planned for this coming week (completion date in parenthesis)

    c. (2/2/2025) ==Database Review Part II==

    Description: Continued evaluation and optimization of the MySQL database to ensure data quality and performance.
    Outcome: Optimized the MySQL database for better performance and confirmed its readiness for integration with AirSim.

d. (2/2/2025) <mark>API Review</mark>

Description: Reviewed the existing API created to sync data between the UI and MySQL.
Outcome: Confirmed that the API is suitable for syncing data between the UI and
MySQL, ensuring seamless data flow and integration.