	The Hashemite University **Prince Al-Hussein bin Abdullah II Faculty for Information Technology** **Department of Information Technology** **Introduction to Artificial Intelligence (2010042220)** **First Semester 2024/2025** **Assignment**	

Analyzing AI Agents in Real-World Scenarios

Scenario: Autonomous Delivery Drone
A logistics company is deploying autonomous drones to deliver packages in Amman. The drones must:

- Pick up packages from distribution centers.
- Navigate through busy city streets, avoiding obstacles like buildings, trees, and other flying objects.
- Deliver packages to customers' doorsteps accurately.
- Return to the distribution center to recharge when the battery is low.

Assignment Tasks:

Part 1: PEAS Framework

1. Define the **Performance Measure** for the delivery drone. What criteria should be used to evaluate its success?
2. Identify the key characteristics of the **Environment** in which the drone operates (e.g., static or dynamic, deterministic or stochastic).
3. List the **Actuators** that the drone uses to interact with its environment.
4. Identify the **Sensors** that the drone needs to perceive its environment.

Part 2: Agent Type

1. Determine the **type of agent** that would best suit this scenario (e.g., simple reflex, model-based reflex, goal-based, or utility-based).
2. Justify your choice by explaining how the selected agent type aligns with the drone's tasks and environment.

Part 3: Ethical Considerations

Task:

Discuss the ethical implications of deploying autonomous delivery drones. Your answer should address the following:

1. Potential ethical issues the system might face in its operation.
2. How these issues could impact individuals, society, or the environment.
3. Suggestions for addressing these concerns while designing or deploying the drone.

Deliverables:

1. A detailed document (1-2 pages) outlining the PEAS components, the agent type and the ethical implications.
2. Diagram or flowchart to illustrate the agent's interaction with the environment.

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