Instituto Tecnológico y de Estudios Superiores de Monterrey

Modeling of Multi-Agent Systems with Computer Graphics (101)
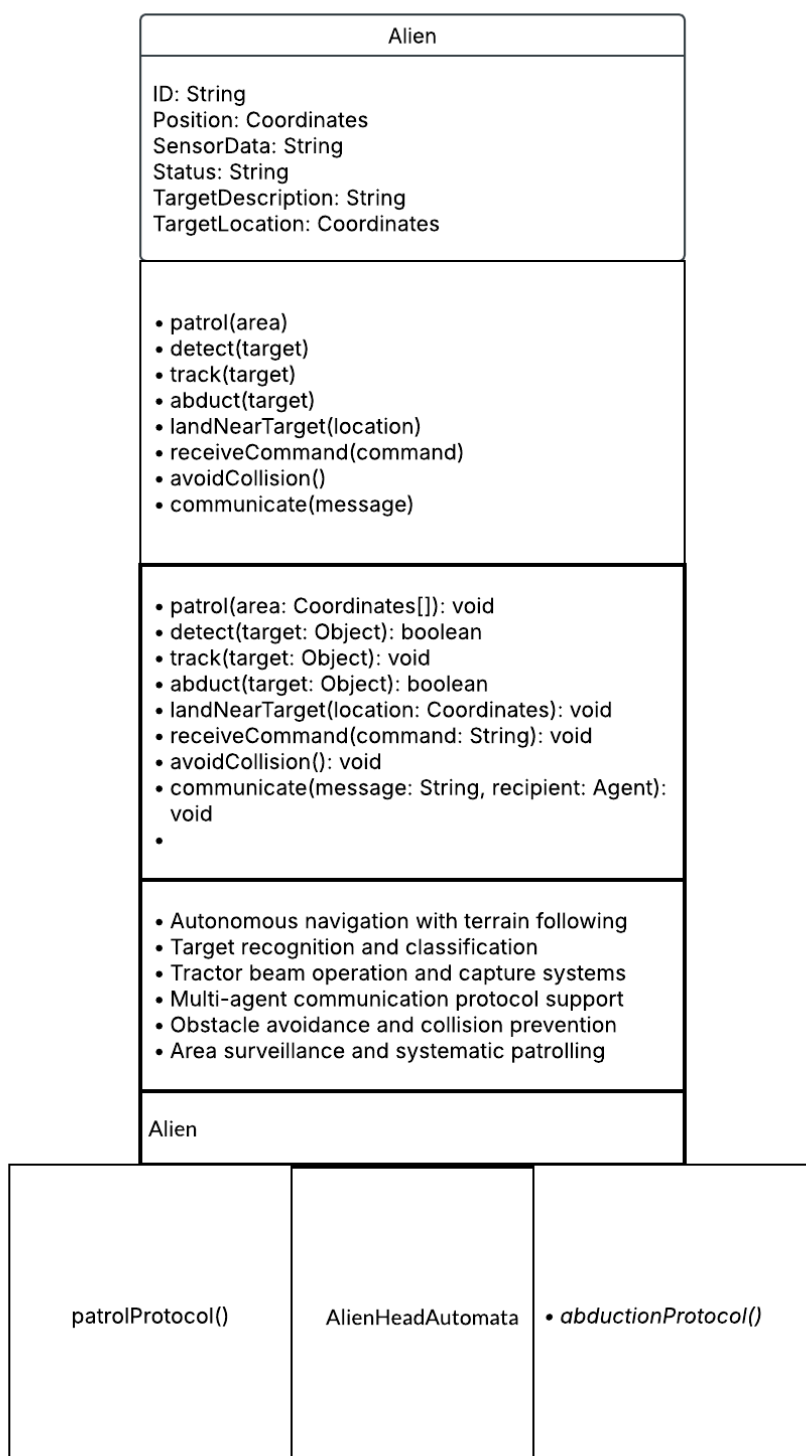**Evidence 2. Progress and presentation of the challenge.**
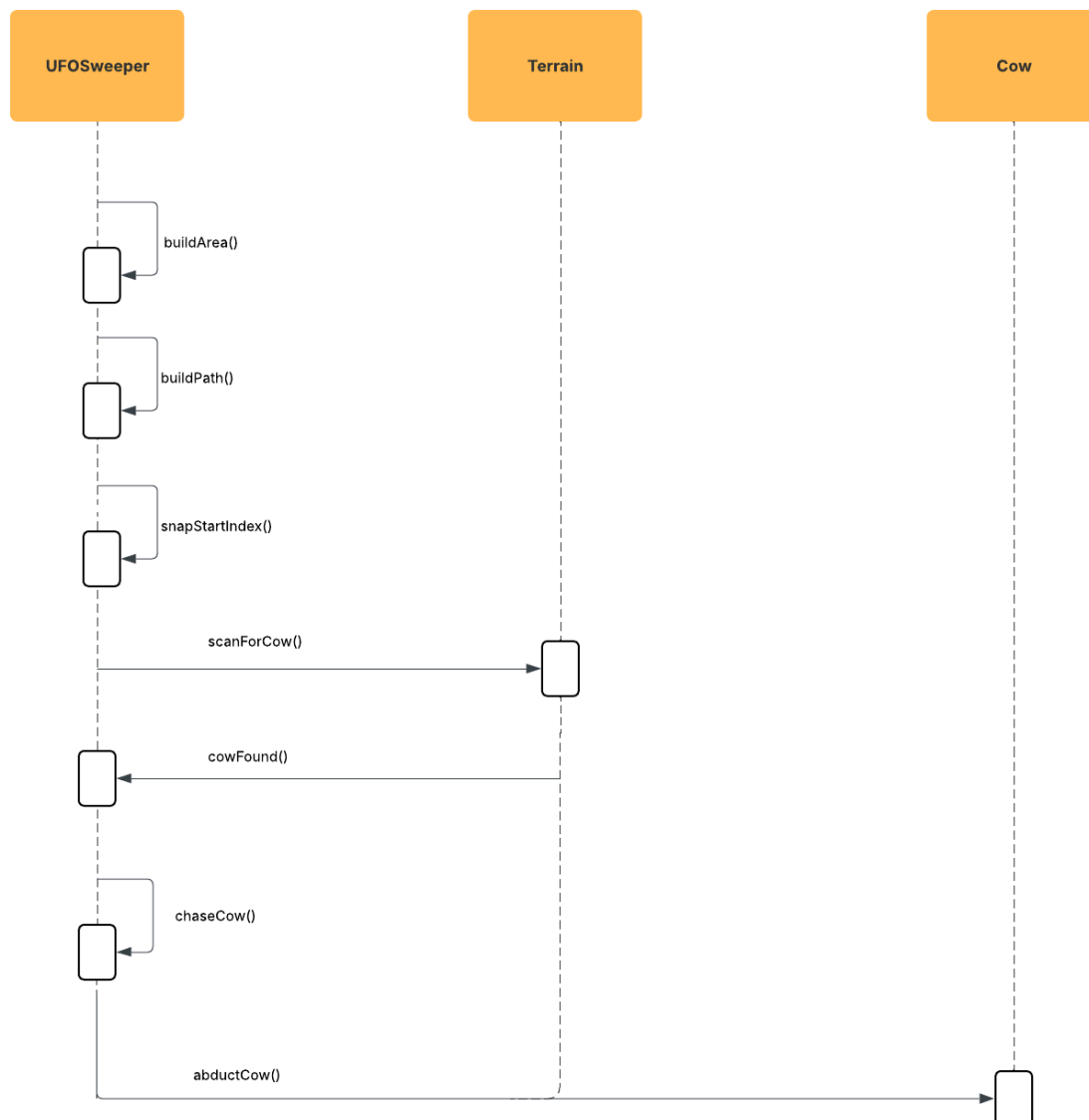**Review 3**

Professor:

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Campus Guadalajara

Final UML agent class diagrams and interaction protocols.

Alien

ID: String
Position: Coordinates
SensorData: String
Status: String
TargetDescription: String
TargetLocation: Coordinates

- patrol(area)
- detect(target)
- track(target)
- abduct(target)
- landNearTarget(location)
- receiveCommand(command)
- avoidCollision()
- communicate(message)

- patrol(area: Coordinates[]): void
- detect(target: Object): boolean
- track(target: Object): void
- abduct(target: Object): boolean
- landNearTarget(location: Coordinates): void
- receiveCommand(command: String): void
- avoidCollision(): void
- communicate(message: String, recipient: Agent): void
-

- Autonomous navigation with terrain following
- Target recognition and classification
- Tractor beam operation and capture systems
- Multi-agent communication protocol support
- Obstacle avoidance and collision prevention
- Area surveillance and systematic patrolling

Alien

| patrolProtocol() | AlienHeadAutomata | • *abductionProtocol()* |

UML Diagrams to explain the simulation and its elements.

Code (at least 50%) for implementing the agents.

In the Github repository: https://github.com/Lucianogrc/Person-of-Interest

Code (at least 50%) for implementing the graphical part of the solution or simulation

In the Github repository: https://github.com/Lucianogrc/Person-of-Interest

Work Plan and Learning Outcomes

Pending Activities and Estimated Timeframe

COMPLETE – 🟩

<div align="right">Table 1.2</div>

Activity	Responsible	Due Date	Estimated Effort
Finalize Class Diagrams of Agents (UML)	Daniel	20/08/2025	4 hours
Finalize Interaction Diagrams of Agents	Mariano	27/08/2025	3 hours
Implement Navigation Agent Module	Guille	03/09/2025	6 hours
Implement Perception Agent Module	Guille	03/09/2025	6 hours
Implement Decision-Making Agent Module	Daniel	03/09/2025	6 hours
Integrate MAV with all agent modules	All team	10/09/2025	5 hours
Develop and finalize graphical interface for simulation	Luciano	10/09/2025	5 hours
Consistency review and final documentation	All team	12/09/2025	3 hours

Team Work Plan for Review 2 (Week 2, 10%)

<div align="right">Table 1.3</div>

Task	Responsible	Due Date	Estimated Effort
Present initial Class Diagrams of Agents	Daniel	27/08/2025	10 min
Present initial Agent Interaction Diagrams	Karen	27/08/2025	10 min
Describe agent types and functions	All team	27/08/2025	15 min

Task	Responsible	Due Date	Estimated Effort
Explain MAV's mission flow and agent communication	Mariano	27/08/2025	10 min
Review graphical consistency and formatting	All team	27/08/2025	5 min

Team Work Plan for Review 3 (Week 4, 10%)

Table 1.4

Task	Responsible	Due Date	Estimated Effort
Present final Class Diagrams and Interaction Protocols	karen	10/09/2025	15 min
Submit at least 60% of agent implementation code	Daniel	10/09/2025	10 hours
Submit at least 60% of graphical simulation/interface code	Luciano	10/09/2025	8 hours
Update work plan and learning acquired	All team	10/09/2025	2 hours

Luciano Luna García – ⬛ Yellow

Karen Valentina Mariel Villagrán – ⬛ Blue

Guillermo Baltazar y Nungaray – ⬛ Green

Daniel Eden Wynter González – ⬛ Purple

Tarik Maina Gichuki – ⬛ Orange

Mariano Sánchez Bermúdez – ⬛ Red