Goal ID	Goal Description	Checklist ID	Checklist Description	KAOS Diagram Node	KAOS Diagram Parent Node	Yes/No N/A	Method	Status	Reviewer	Date	Comments	Action(s)	Status of action(s)
G-01	*Design logic to assign an appropriate task to each agent at the start of the mission.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-22	"Appropriate task" needs definition. How do we measure "appropriate"?	Define criteria for "appropriate task"	Completed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [logic that assigns an appropriate task to each agent at the start of the mission]*	*Achieve [autonomous & Adaptive Task Allocation]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-02	*Ensure that when an agent fails, its assigned tasks are automatically reassigned to other functional agents, if system resources permit.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Drone failures are trigger task reassignment]*	*Achieve [autonomous & Adaptive Task Allocation]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-03	*Ensure that correct behaviour is maintained across the swarm despite failure or inconsistencies in the output of a single agent.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-22	"Correct behaviour" needs definition. What specific behaviors are considered 'correct'?	Refine "correct behaviour"	Completed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-22	Difficult to test without a clear definition of "correct behaviour." "Maintained across the swarm" is also vague.	Refine G-03 to include quantifiable metrics for "correct behaviour" or decompose into more testable sub-goals	Completed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Maintain [correct global behaviour even if one agent produces incorrect or inconsistent outputs]*	*Maintain [fault resilient consensus mechanism]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-04	*Ensure that the swarm reaches a collective decision for each task that requires coordination.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [The swarm reaches a collective decision for each mission task*	*Achieve [distributed Algorithm to manage system operations]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-05	*Ensure coordination among all agents when distributing the search area.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed

Goal ID	Goal Description	Checklist ID	Checklist Description	KAOS Diagram Node	KAOS Diagram Parent Node	Yes/No N/A	Method	Status	Reviewer	Date	Comments	Action(s)	Status of action(s)
		CL-04	Is the goal consistent with parent?	*Achieve [coordination among all agents to distribute the search area]*	*Achieve [distributed Algorithm to manage system operations]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-06	*Ensure that the provided simulation software is modified so that the implemented replanning protocol can be tested in that simulation environment.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Enable testing of the replanning protocol in simulation]*	*Achieve [Modify simulation software*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-07	*Enable the application of fault injection within the simulation to test system resilience and fault tolerance.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Enable fault injection within the simulation]*	*Achieve [Modify simulation software*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-08	*Demonstrate that the swarm can maintain mission continuity despite disruptions, failures, or changes in agent availability while operating under the chosen protocol.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Mission continuity is demonstrated in modified simulation]*	*Achieve [Swarm behavior is correctly demonstrated after fault injection]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-09	*Demonstrate that the swarm can recover from individual agent failures and continue operating effectively as a collective.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Demonstrate Swarm Resilience to faults in the modified simuation]*	*Achieve [Swarm behavior is correctly demonstrated after fault injection]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-10	*Measure the time required to locate the target subject using the newly implemented chosen protocol, in order to evaluate its performance.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed

Goal ID	Goal Description	Checklist ID	Checklist Description	KAOS Diagram Node	KAOS Diagram Parent Node	Yes/No N/A	Method	Status	Reviewer	Date	Comments	Action(s)	Status of action(s)
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Measure time in the modified simulation to find subject with the new protocol]*	*Achieve [Swarm behavior is correctly demonstrated after fault injection]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
G-11	*Ensure that agents can make individual decisions in appropriate situations.*	CL-01	Is the goal clear and unambiguous?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21			No action needed
		CL-02	Is the goal testable(can success be objectively measured)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-22	"Appropriate situations" needs definition. How do we measure "appropriate"?	Define criteria for "appropriate situations"	Completed
		CL-03	Does the goal contribute to a higher-level goal (traceability up)?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Verified	Emily Zainali	2025-10-21	From the Task Description → Objective → KAOS model → Goals		No action needed
		CL-04	Is the goal consistent with parent?	*Achieve [Agents make individual decisions in appropriate situations]*	*Achieve [distributed Algorithm to manage system operations]*	Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed
		CL-05	Is the goal relevant to the problem and its solution?			Yes	Traceability analysis KAOS model → Goals **and** Checklist	Validated	Emily Zainali	2025-10-21			No action needed