Your Company Role: Process Manager

The **Process Manager** is responsible for:

- Observing the overall progress of the team in real-time,
- Intervening at specific times, selecting from a list of given interventions.

Observing the team's process in real time, the process manager will have the opportunity to intervene at, and only at, specific times throughout the sessions. The purpose of intervening is to prod the team into a more efficient problem-solving process. The process manager will interpret the actions the members take and the communications between them to determine if the team should be prodded through an intervention.

If the process manager does not see the need to intervene, they do not have to. The first potential intervention will occur at 5 minutes into each problem-solving session, and then in 2.5-minute intervals after that, for a total of 6 potential interventions during each session (12 for the total experiment). The permissible interventions will be listed in the Mediation Interface (Figure 2), as well as a "No Intervention" option. Either an intervention or the "No intervention" button must be selected at each interval time. A countdown timer in the interface will help the process manager keep track of when the next intervention should occur. The interventions will only be able to be selected once the countdown reaches 0, and for 15 seconds afterwards. Otherwise, the default selection will be "No Intervention."

Mediation Interface – Process Manager

Using the **Mediation Interface**, the process manager can:

- Assess the discourse among the team in the four different communication channels,
- Assess the actions each role within the team is taking,
- Determine when the next intervention needs to take place,
- Choose from a set of prescribed interventions to inject at distinct intervals.

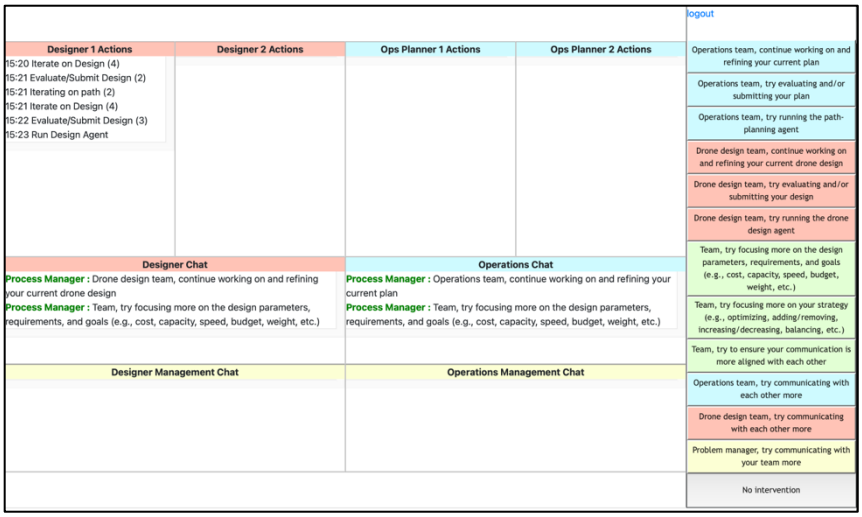

Figure 3 – Mediation Interface

Through the Mediation Interface shown in Figure 3, the process manager will be able to observe the problem-solving process of their team. This includes the team communication in each of the different communication channels and the actions from the two Drone Designers and the two Operations Specialists. The actions are categorized as working and refining current designs, evaluating and submitting designs, and utilizing agents (each of the disciplines have access to assistive agents that can help them with either the design of their drones or optimizing their operations paths). Using this information, the process manager can determine whether an intervention is required, selecting from the following list of possible interventions:

Action Interventions:

1. "Ops planners, why don't you continue working on and refining your plans a bit more."
2. "Hey operations team, try evaluating and/or submitting your plan and start fresh."
3. "Hi operations team, try running the path-planning agent to help."
4. "Drone designers, why don't you continuing working on and refining your drone designs a bit more."
5. "Hey drone design team, try evaluating and/or submitting your design and start fresh."
6. "Hi drone design team, try running the drone design agent to help."

Communication Interventions:

7. "Team, try focusing more on some of the design parameters and goals of the problem, such as: cost, capacity, speed, budget, weight, etc."
8. "Team, try focusing more on your problem-solving strategies; try optimizing, adding/removing, increasing/decreasing components."
9. "Hi team, why don't you all try aligning your communication more with each other.
10. "Ops team, please try talking with each other more."
11. "Drone designers, please try talking with each other more."
12. "Hi problem manager, please try talking with your team more."

No Intervention Needed:

13. No intervention.

Problem Brief: Design of a Drone Delivery System

You are overseeing a team for a new company that specializes in package and food delivery using drones. Your new company is the first entrant in a market. To be successful in the market, your company must maximize profit by designing and implementing a drone fleet.

Your company has an initial budget of $15,000 to build and operate a drone fleet. As part of your business strategy, your company can choose to provide service to any customers on the map you want to acquire. Your company will receive $100 in profit per each pound of package delivered and $200 in profit per each pound of food order delivered.

The duration of your design session will simulate one business year. Your session will be broken into two equal time periods (20 minutes), and each time period will simulate one typical day in the six months.

Team Structure

- There will be five people on your team, and each person will be assigned one role.
- The arrows in Figure 1 below represent the communication channels between members on your team.
- Team members will communicate through a text-only chat tool during the design sessions. Team members are not allowed to communicate verbally.

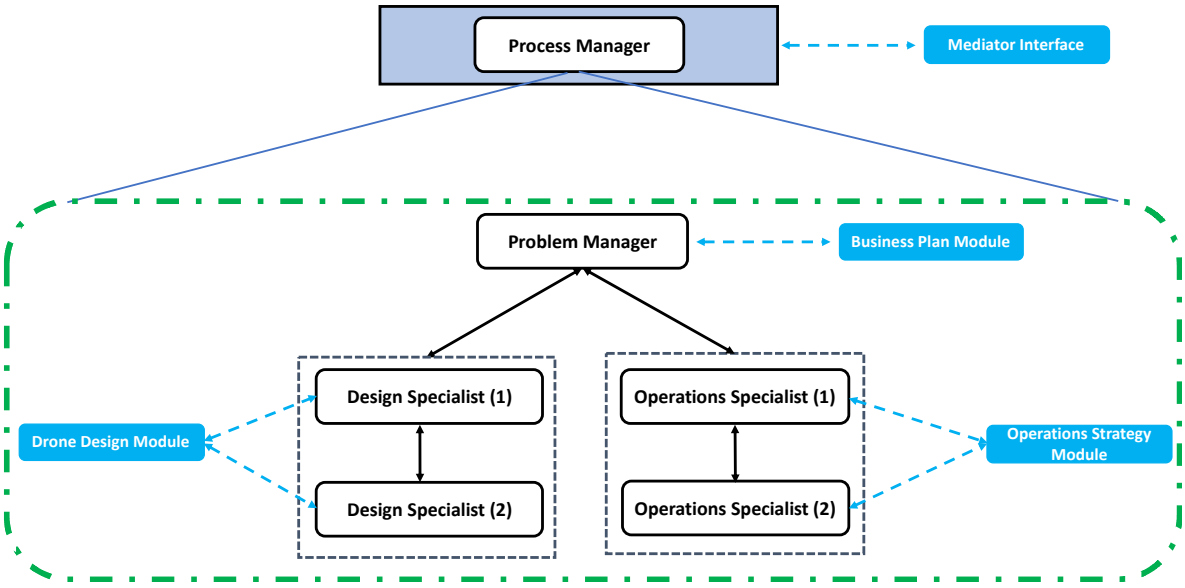

Figure 1 – Example of your Team Structure and Communications Links. ***Operations Specialists*** can communicate with each other through the 'Operations' channel in the chat tool. Similarly, the ***Design Specialists*** can communicate with each other through the 'Design' channel. The ***Problem Manager*** can directly communicate with each discipline (operations specialists and design specialists) through the respective manager channels (the 'Operations Manager' and 'Design Manager' channels).

Team Roles and Capabilities

The two **Design Specialists** are responsible for designing drones using the Drone Design Module and submitting completed designs to the operations team.

The two **Operations Specialists** are responsible for developing operation plans by generating delivery routes with designed drones to deliver parcels.

The one **Problem Manager** is responsible for handling the company budget, choosing the customers using the Business Plan Module, and communicating its progress. The Problem Manager serves as the bridge of communication between the design specialists and operations specialists. The Problem Manager can decide to approve or reject the operation plans.