ENPM 663: Building a Manufacturing Robotic Software System
RWA 3 – Task 1
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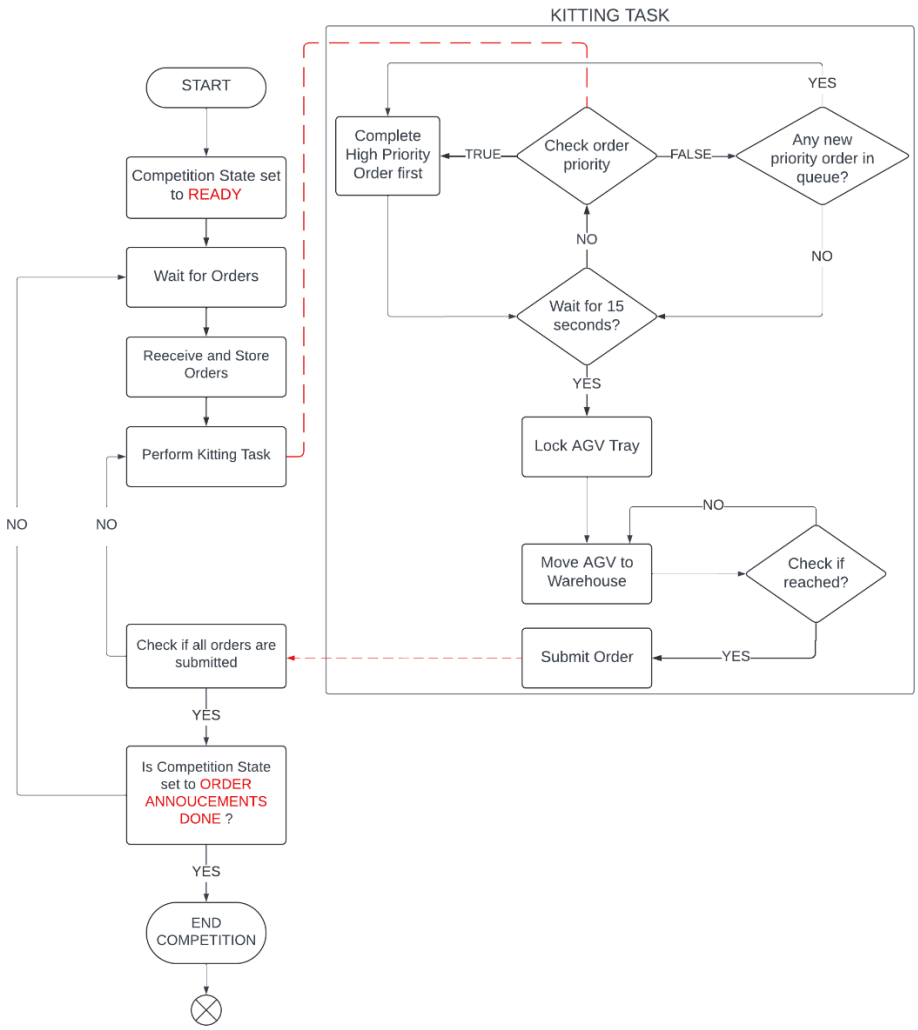

Process:
1. Start: Commencing the competition.
2. Wait for Orders: The system waits for the orders.
3. Receive and Store Orders: Orders are received and stored.
3. Check for Priority: Each order is checked for its priority status.
   - If the order is a high priority, the system waits for 15 seconds and processes it.
   - If the order is not of high priority, the 15-second wait time does not elapse and hence, it goes back to check its priority.
4. Locking Tray: After 15 seconds, the kitting takes place, and the tray gets locked.
5. AGV: The AGV is then programmed and moved to the warehouse
6. Check if Reached: The System checks if the AGV has reached the warehouse.
7. Submit Order: Once the AGV reaches the warehouse, the order is submitted.
8. Check if all orders are submitted and the competition state order is done: If this is true, the process ends; if not, it loops back to check if there are more orders to process.

Our project adopts a hybrid architecture by employing a hierarchical architecture for task-level planning, optimization, and breakdown of complex tasks into manageable sub-tasks while integrating a reactive architecture to address dynamic changes by reallocating resources and reorganizing the execution sequence to ensure timely fulfillment of the priority orders. This hybrid approach ensures adaptiveness to the current challenge and the upcoming challenges as well.