CONTROL SYSTEM DESIGN for ABB ROBOT PRODUCTION CELL

Objective

Design a basic, expandable control system and electric cabinet for ABB robot production cell, simulate on IRB1200 and typical pick & place scenario

Background & motivation

Industry 4.0 demands smart, connected manufacturing. A standardized, modular architecture enables faster integration, consistent quality, and easier training to support flexible, future-ready automation with PLCs, HMIs, sensors, and industrial network connectivity.

Feature

- Sample program of pick and place for 2 different object types (set alternating)

Yogurt Pack

Milk packet

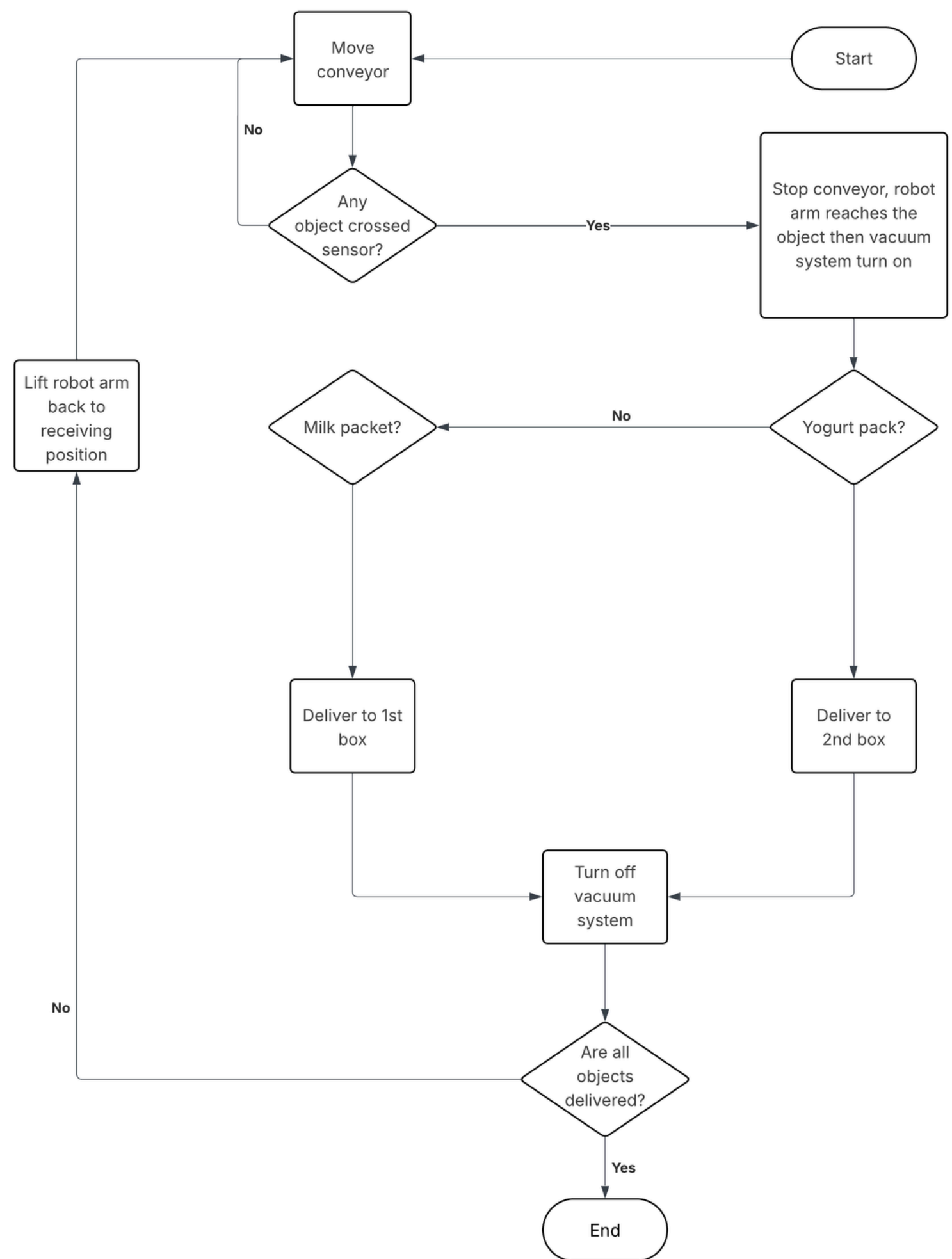- Connection from controller to PLC to send signal to robot IRB1200
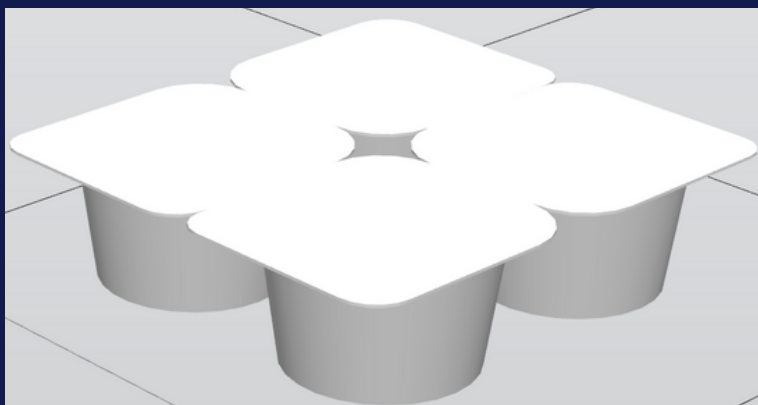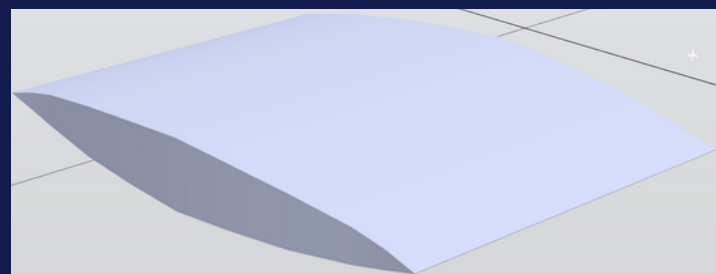
Solutions

Hardware: Robotic cell that separates two types of items,
Software: statistical web application that displays robot uptime, item transferred, etc...

Station Workflow

Conclusion

Delivered a functional control system for ABB IRB1200 with object sorting, PLC integration, and web-based monitoring

Future work

- Finish the wiring of the cabinet, connection to station modules
- Start the simulation of robot, controller and connection to B&R PLC using Profinet