UCI Samueli School of Engineering | Department of Mechanical and Aerospace Engineering

EDI Engineering Design in Industry

Astrobotics

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Company Liaisons: Jesse Gillespie, Lee Wu, Susan Moran
Faculty Advisors: Dr. Vince Mcdonell, Dr. Farzad Ahmadknanlou

ASTRONICS TEST SYSTEMS

Team

Background

Astronics Test Systems has developed a semiconductor test system, the Single Slot Tester (SST), to meet the demand of low throughput test systems in industry. However, the current SST requires a technician to individually place DUT's (Device Under Test) into the BIB (Burn In Board) from the JEDEC tray and vise versa. This results in hours of medial work. As a result, the goal of this project is to integrate Astronic's existing SST with a FANUC six axis robot to fully automate the testing process.

Fall Quarter: Hardware Development

Week 1: Determination of Hardware Requirements

Weeks 2-3: Hardware Conceptualization and Solutions

Week 4: Down Selection and Preliminary Design Development

Week 5: Present Progress to Astronics

Week 6-8: Hardware Design Refinements; Complete Bill of Materials

Week 9-10: Order Materials for Proof of Concept; Determination of Software Requirements

Winter Quarter: Software Integration

Week 1-2: Build Workstation; Program General Robotic Movements

Weeks 3-4: Integrate & Refine Robot Programming & Workstation

Week 5: Present Progress to Astronics

Week 6-8: Program User Interface

Week 8-10: Integrate IR Vision into Robot Programming

Week 10: Automated SST Complete and Working

Contact Information

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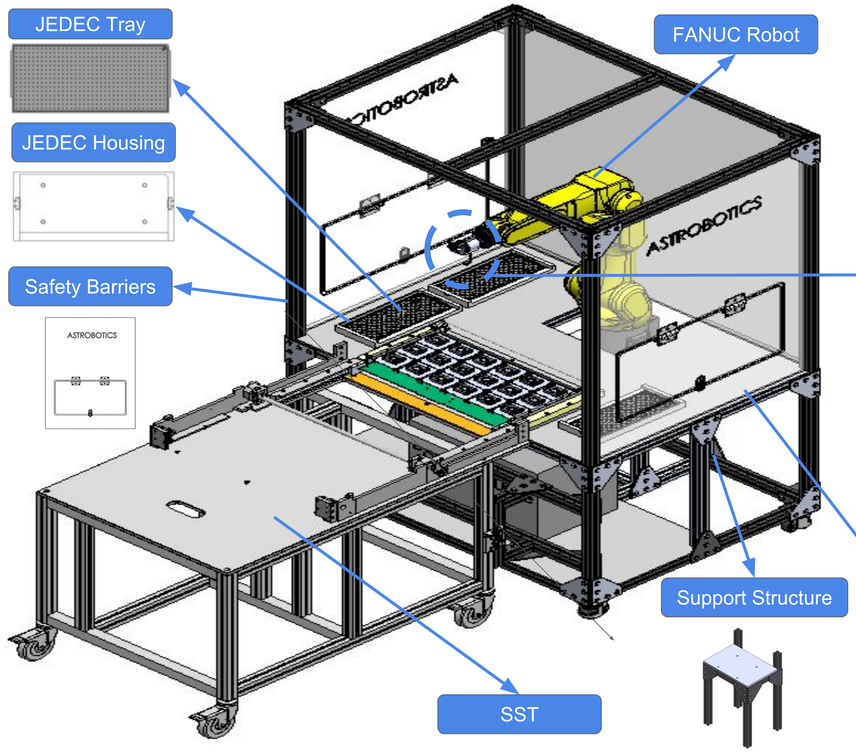
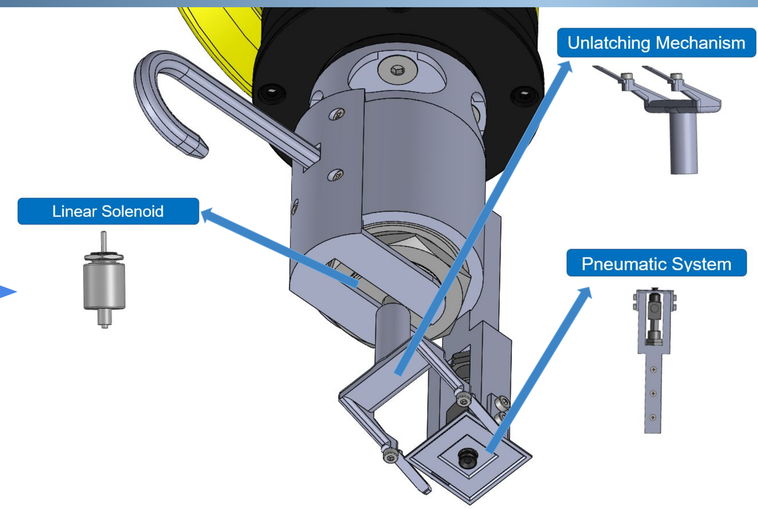
Automated Single Slot Tester



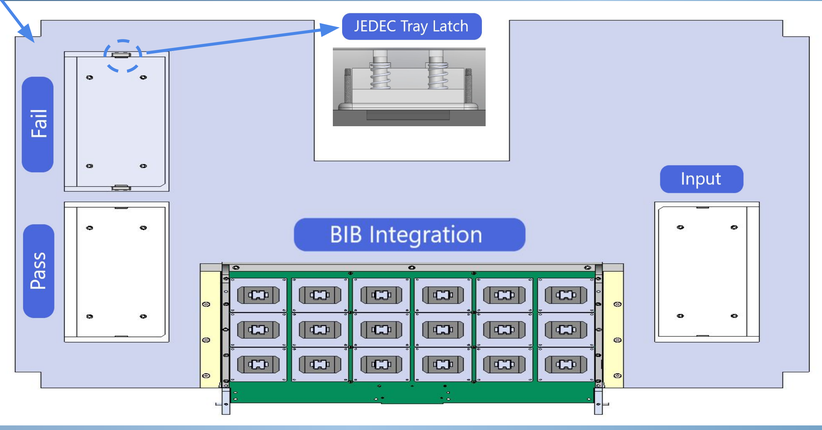
Tasks

- Design a structure to support the robot, workstation, and safety barriers
- Design a workstation that secures the BIB and JEDEC tray
- Design an end effector that can pick up DUT's and pull out the BIB
- Design safety barriers to protect workers

End Effector



Work Station



Robot Logic