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Problem Statement

AUMOVIO’s reactive robot maintenance leads to frequent downtime, delays, and high costs due to the absence of a centralized monitoring system and limited visibility into key metrics like motor temperature and amperage.

Purpose

Develop a real-time robotics health dashboard for the 3XX production lines using Maple Systems CMT and PLCs to centralize robot data, enable predictive maintenance, reduce downtime to improve operational reliability.

Objectives

| Data integration (15%) |
| Real-time monitoring (25%) |
| Fault detection & prediction (20%) |
| Intuitive interface design (20%) |
| Robust analytics & reporting (20%) |

Team Members

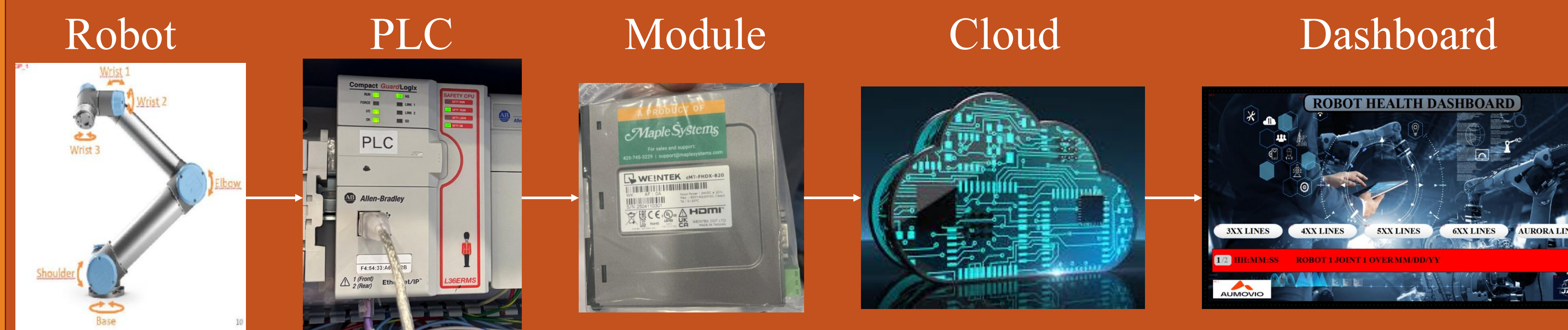


| Dylan | Gilberto | Jimena |

Background Information

AUMOVIO is a manufacturing company for vehicle sensors that has implemented automation with robots.

System Information Flow



Constraints

| Time – May 2026 | People – Schedule limitations |
| Data & equipment restrictions |

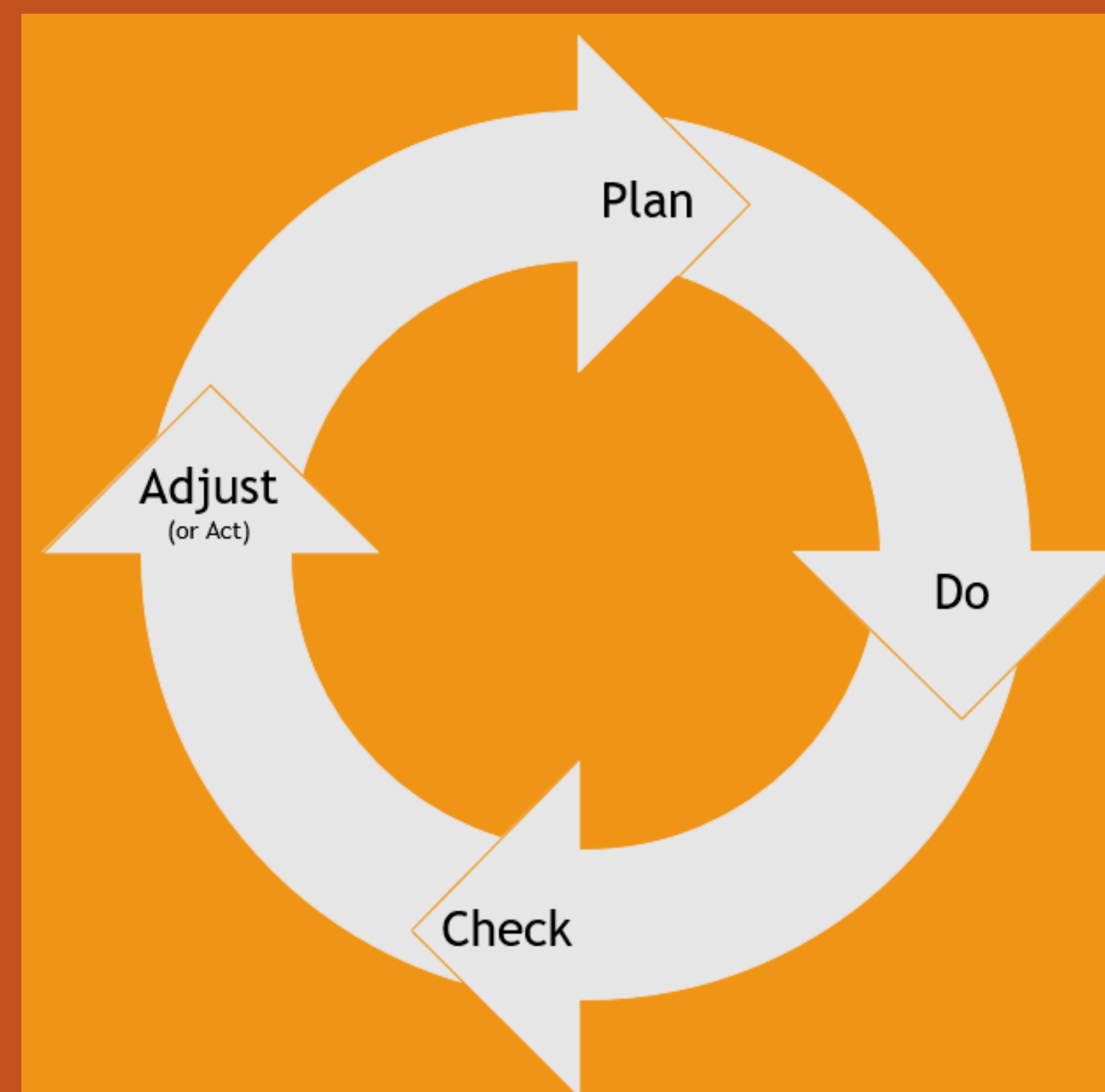
Design Approach

Plan

| Introductions | Tours |
| Research | Outline |
| Identification |
| Methodologies |

Do

| Training | Drafts |
| PKI Collection |
| Construction |
| Integration |



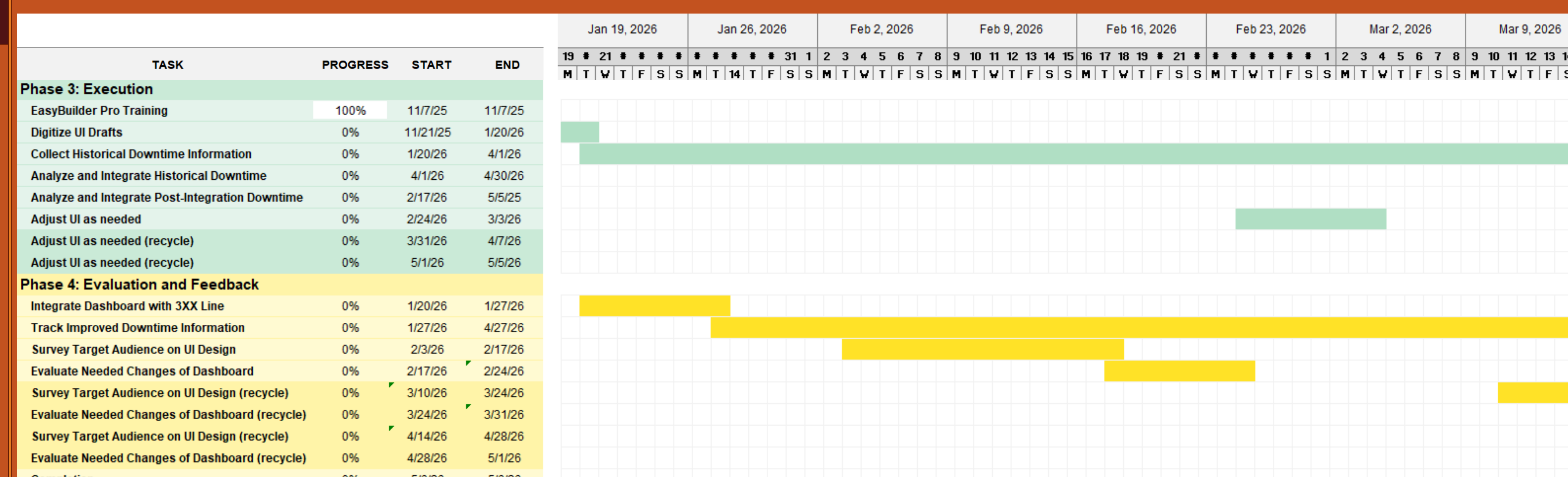
Adjust & Act

| ROI Collection |
| Analysis | Reassess |
| Apply Feedback |

Check

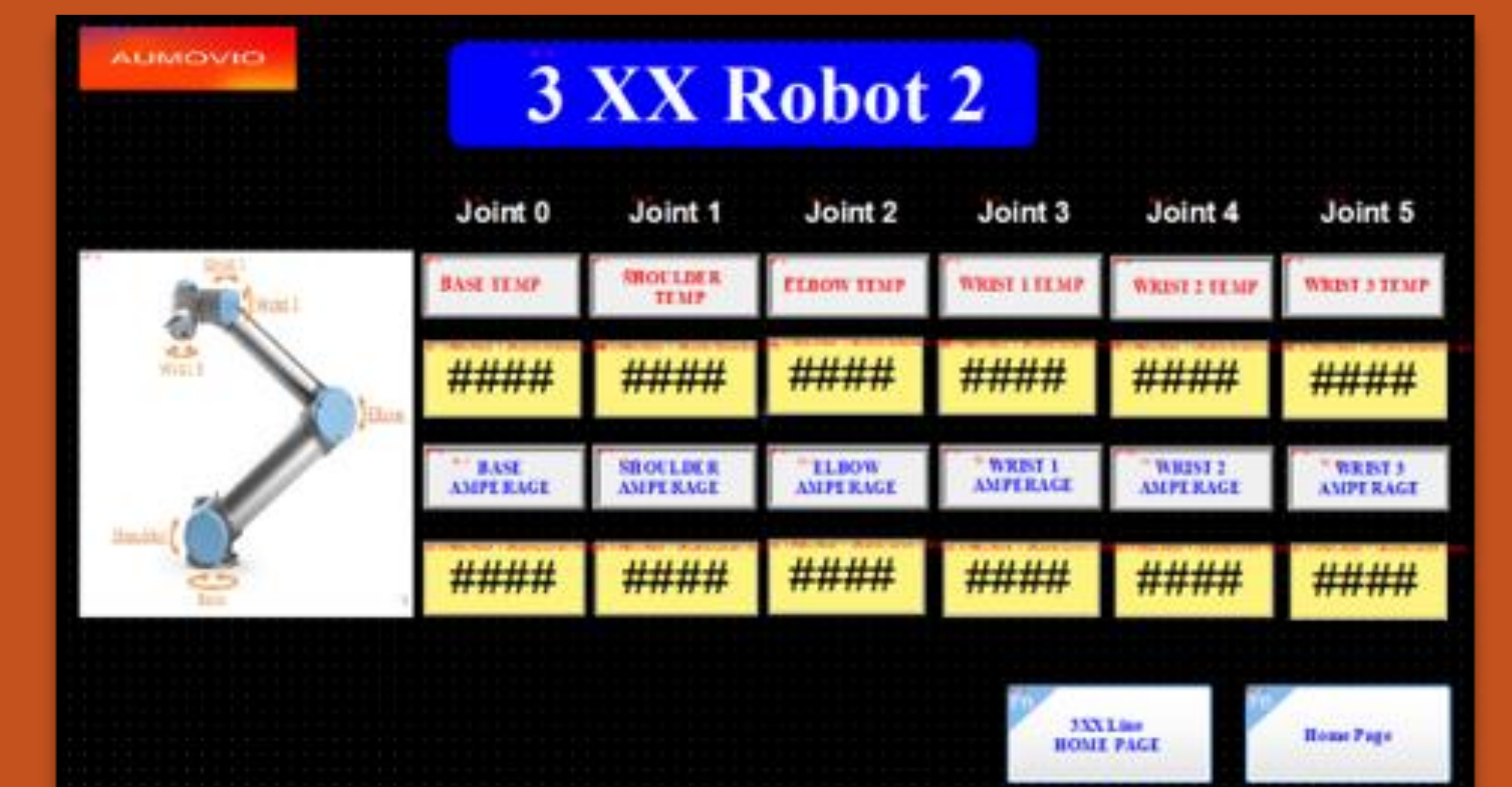
| Execution |
| Verification |
| Feedback | Survey |

Schedule



Human Factors

- Visual Sensory**
 - | Background consistency |
 - | Color coding | Font format |
 - | Overall layout |
- Auditory System**
 - | Avoid alarm masking |
- Vestibular System**
 - | Critical alerts stand out |
- Tactile System**
 - | Spacing and sizing | Ease of use |



Performance Measures

- PLCs communicate with the robots to collect real-time data (KPIs)
- The implementation produces a reduction in robot downtime (15%)
- Bar charts, trend lines, and ROI dashboards clearly indicate increase in savings to management.