

# REQUEST FOR PROPOSAL (RFP)

Wright Ltd

## PROJECT OVERVIEW

Name: Forge Stacey Facility Upgrade  
Type: Facility Upgrade  
Location: Port Stacey, PR (Refinery Zone)  
Industry: Manufacturing  
Value: \$9,422,557  
Complexity: 3/5  
Date: April 09, 2025  
Disciplines: Industrial Automation, Process Engineering, Electrical Engineering  
Regulations: ASME Standards, OSHA Regulations

## SCOPE OF WORK

### Scope of Work: Automated Packaging Line Upgrade

**Project Goal: Upgrade an existing manual packaging line for a food manufacturing plant to a semi-automated system, increasing production efficiency by 30% and minimizing manual handling.**

### Disciplines: Industrial Automation, Process Engineering, Electrical Engineering

#### I. Industrial Automation:

1. PLC Programming and HMI Development: Develop a Rockwell Automation PLC program (using Logix5000) to control the automated packaging sequence, including conveyor belt speeds, robotic arm movements (Fanuc R-2000iB), and product labeling. The program will incorporate safety interlocks and error handling routines, with detailed documentation including ladder logic diagrams and HMI screen designs. Testing and validation will include simulated and real-world scenarios.
2. Robotic Integration and Programming: Integrate a Fanuc R-2000iB six-axis robot to perform pick-and-place operations of packaged products (dimensions: 10cm x 15cm x 5cm, weight: 0.5kg) from the conveyor to the packaging box. Develop and implement the robot's motion control program using RAPID programming language, ensuring compliance with all safety standards (ISO 10218-1). This will include creation of TCP points and detailed safety risk assessment documentation.
3. Vision System Integration: Integrate a Cognex In-Sight vision system to inspect product labels for accuracy and completeness (resolution: 1280x1024, accuracy:  $\pm 0.1$ mm). Develop the vision system algorithms to identify and reject defective products. This will be done through configuration of the Cognex software, ensuring system accuracy and speed is validated through statistical process control analysis.

#### II. Process Engineering:

1. Line Layout Optimization: Optimize the layout of the packaging line to accommodate the new automated equipment, minimizing distances and maximizing throughput. This will involve creating detailed 3D models (SolidWorks) of the new line layout, including all equipment dimensions and clearances, adhering to OSHA standards for walkways and emergency exits. This will also include generating detailed equipment placement drawings and a bill of materials.
2. Conveyor System Design and Specification: Design and specify a new conveyor system (stainless steel construction, food-grade compliant) to integrate with the robotic arm and existing packaging equipment. This involves calculating required conveyor speed and capacity (throughput: 60 units/minute), as well as selecting appropriate motor and drive components and providing detailed specifications for procurement. This will be documented using process flow diagrams.

#### III. Electrical Engineering:

1. Power Distribution Design: Design the electrical power distribution system for the new automated equipment, ensuring adequate capacity and safety compliance. This includes calculating power requirements for all components, designing the power distribution panel (using industry standard components), and specifying appropriate cabling (AWG sizes, materials, and installation methods) for safe power delivery to robots and other equipment. Detailed electrical schematics, BOM and panel layout design are required deliverables.
2. Safety System Implementation: Implement a comprehensive safety system (e.g., light curtains, emergency stop buttons, interlocks) to protect personnel from hazards associated with the automated equipment. This includes selecting and specifying appropriate safety devices complying with OSHA and relevant industrial safety standards (e.g., ANSI/RIA R15.06), developing safety procedures, and performing risk assessments. Full documentation of the safety system design and testing procedures will be provided.

#### IV. Cross-Disciplinary Tasks:

1. System Integration Testing: Conduct rigorous testing of the entire integrated system to ensure seamless operation and compliance with all specifications. This will involve collaborative testing efforts across all three disciplines to identify and resolve any integration issues. This will include detailed test procedures, documentation, and data analysis of the tests.
2. Commissioning and Handover: Commission the fully integrated automated packaging line and conduct training for plant personnel on its operation and maintenance. This includes a comprehensive handover document with system documentation, operational manuals, troubleshooting guide, and maintenance schedule.

**Complexity Impact: The complexity level of 3/5 reflects the integration of multiple automated systems and the requirement for extensive programming and safety system implementation.**

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Forge Stacey Facility Upgrade

Project Title: Forge Stacey Facility Upgrade - Automated Packaging Line Upgrade

Location: Refinery Zone, Port Stacey, PR

Industry: Food Manufacturing

RFQ Release Date: April 09, 2025

Questions Due: April 18, 2025

Proposals Due: May 01, 2025

Project Start Date: June 02, 2025

Project Duration: 17 Months

Contract Type: Time & Materials

Project Goal: Upgrade existing manual packaging line to a semi-automated system increasing production efficiency by 30% and minimizing manual handling. Throughput: 60 units/minute. Product dimensions: 10cm x 15cm x 5cm; weight: 0.5kg.

Scope of Work: The project encompasses Industrial Automation (PLC programming with Rockwell Logix5000, Fanuc R-2000iB robot integration using RAPID, Cognex In-Sight vision system integration), Process Engineering (line layout optimization using SolidWorks, conveyor system design ? stainless steel, food-grade), and Electrical Engineering (power distribution design, safety system implementation meeting OSHA and ANSI/RIA R15.06 standards). This includes system integration testing, commissioning, and operator training. Detailed scope is attached.

Required Deliverables:

- \* Comprehensive technical designs (1-2 pages).
- \* Detailed cost breakdown.
- \* System documentation, operational manuals, and maintenance schedules.

Qualifications: Minimum 3 years' experience in food manufacturing automation projects, demonstrated regulatory compliance (OSHA, ANSI/RIA R15.06).

Evaluation Criteria: Technical Approach (50%), Cost (30%), Experience (20%).

Submit Proposals To: procurement@manufacturing.com

Contact: [Insert Contact Name and Title Here]

Attachments: Detailed Scope of Work.

CONTACT

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TIMELINE

Include key dates such as submission deadlines, inquiry deadlines, and project start dates.