Robotic Powder Coating for General Industry

Building on Omnirobotic's years of technology development in 3D Perception, motion planning and task planning AI, this Robot Behavior Template is built to make it easier for integrators and end-users to more rapidly deploy autonomous robotic systems in general industry or metal fabrication-driven powder coating.

Features

Robotic Powder Coating for General Industry has a variety of benefits:

- **Finally, Robots for High-Mix:** No fixed limit on the number of parts or process model variations that can be applied (e.g. color recipes).
- **Use Existing Hardware:** Make use of FANUC Line Tracking and other preferred robot controller features for adaptation to densely loaded, continuous moving lines.
- **Simplified Integration:** Because of persistent labor shortages and the variety of demands within general industry, Omnirobotic has developed specific methods to define and achieve expectations for final systems.

Technical Guide

What software components are needed to deploy a final system?

- **Cartesian constraints:** Safety zone and work volume must be defined for robot, while OmniBrain™ sends cartesian points to robot controller.
- **Smoothing:** A shape smoothing radius must be defined according to the degree of process accuracy required by end user.
- **Tool Parameters:** Fan width, standoff and tool angle must all be defined for proper Behavior Acceptance.
- **Per-Robot Scanning:** 3D Perception stations must be positioned to each side of a work volume within which a robot is expected to process parts.

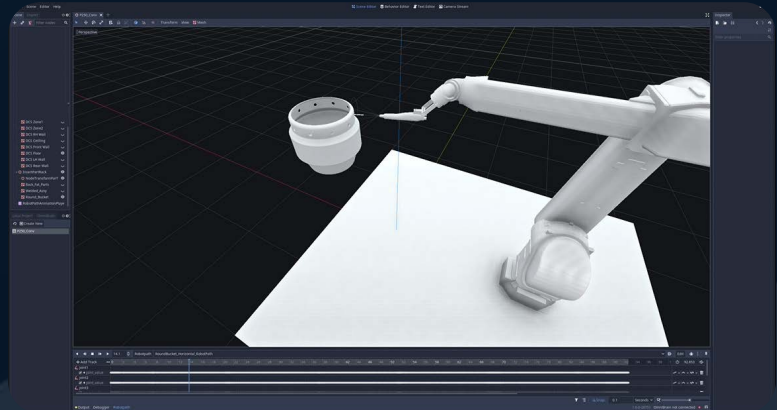# Robotic Powder Coating for General Industry

Template Specifications

Within the constraints of the current template, features-in-development have been excluded from scope of delivery. While specific capabilities may be lacking in this iteration, future improvements can ensure they are included. As of Q2 2022, specifications entail:

- No specific Faraday effect targeting.
- Wire mesh parts (<=3/8") are not applicable.
- Cameras must be placed outside the process booth.

What is a Behavior Acceptance Test?

Unlike traditional automation, High-Mix autonomy focuses on addressing frequent part variation within existing expectations for skilled labor. As such, a Behavior Acceptance Test can be used between end-users and integrators to facilitate proper system installation:

- End-User defines a sample of representative parts.
- Integrator tunes Behavior to existing operator instructions.
- End-User can experiment with Behavior at demo site or in facility.
- Integrator makes iterative improvement on subsequent contracts.

Through this process, installation isn't just faster, easier and cheaper, but accomplishes more too!

Want to Integrate or Deploy? Contact Omnirobotic to Learn More!

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