

# CPS Robot Blueprint family

## Overview

Robotics is an important tool for achieving the SDGs. Workers will be able to focus on decent work and new innovation by improvement of labor productivity using robot, as a result, they can move toward new economic growth.

However, there are industries where it is difficult to apply current robotics. For example, agriculture, restaurant, food factory, etc..

The biggest challenge current robotics faces in the industry is how to control elastic and non-uniform object under variable circumstance.

To apply robotics to any industry easily, this blueprint family develop and provide open software stack which can achieve the challenge.

## Family Template

Case Attributes	Description	Informational
Type	New or Modification to an existing submission	
Blueprint Family - Proposed Name	Robotics for elastic and non-uniform object under variable circumstance Blueprint Family CPS for Robot Blueprint Family Cognitive CPS for Robot Blueprint Family	
Use Case	Robot for restaurant and ready-to-eat industry Robot for agricultural forestry industries and fishers	
Blueprint proposed	Robot basic architecture based on Sensor-rich soft end-effector system (SSES)	
Initial POD Cost (capex)	\$50K/one robot hardware	
Scale	Expandable to automate the drug industry, garment factories, and serviceability industries	
Applications	Robots control elastic and non-uniform object under variable circumstance	
Power Restrictions	Need approx.500~1500W per one robot arm.	
Preferred Infrastructure orchestration	Robot App: ROS2, Node-Red, Python, MQTTprocessingPLC OS:Ubuntu  In the future, automatic calibration (using GPS signals), including measurement equipment, etc.	
Additional Details	NA	

## Blueprints in this Family

Blueprint	PTL	TA Family Coordinator Nominee (Y/N)
Robot basic architecture based on SSES		

## Proposal Presentation



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#### ONE Summit 2022 Presentation



117\_LF\_ONE\_Sum...Sensor\_v10.pdf

#### Akraino Fall Summit 2022 Presentations



Fujitsu\_Introdu...Summit\_2022.pdf



Akraino\_Fall\_Sum...022\_Robotics.pdf