MANUFACTURING SKILL STANDARDS COUNCIL

Definition of Autonomous Robots

An autonomous robot is a robot that performs behaviors or tasks with a high degree of autonomy. Autonomous robotics is usually considered to be a subfield of artificial intelligence, robotics, and information engineering.

Fully autonomous robots in manufacturing are commonly needed for high-volume, repetitive processes — where the speed, accuracy and durability of a robot offers unparalleled advantages. Increasingly, autonomous robots are programmed with artificial intelligence to recognize and learn from their surroundings and make decisions independently.

Autonomous robots are capable of operation without human intervention. After programming they are able to pilot environments without intervention and can perform production process independently. The benefits are seen in the accuracy of operations improving speed and quality. In addition, they can reduce employee risk of injury by operating in hazardous environments.

Autonomous robots are increasingly seen in the form of self-guided vehicles that move about the factory floor. They are programmed, for example, to deliver parts to assemblers on time and to move assembled goods to inspection stations for quality control.

Sources: Deloitte, Tristian Kanwar, Rockwell Automation