M-TRACK

Intelligent Robotic Path Planning and Guiding System

An Intelligent Wireless Solution for Precise Robotic Path Planning



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M-TRACK

Intelligent Robotic Path Planning and Guiding System

Scantech's M-Track is intelligent path planning and guiding system consisting of 3D tracking system, a tool simulator, and path planning software. It serves as robots' eyes and brains by allowing visual perception, target recognition, and path planning.

The system is compatible with different robots and can be widely applied in various sectors with high precision, reliability, and safety. It is capable of planning paths for multiple tasks ranging from object transporting to grinding, coating, and welding for flexible and automatic production.

By tracking the path of a tool simulator and obtaining the 6D poses of its TCP, M-Track can achieve quick path planning so that robots can reach the goal position and execute specified tasks. It breaks through the limits posed by high labor costs, inefficient human-machine interaction, and low efficiency, thus greatly enhancing product quality. It is a great helper for manufacturers to overcome challenges and fulfill daily operations.

6D Pose Recognition

Automatic Path Planning

Intelligent and Efficient

Highly Safe and Reliable

Intelligent and Efficient Path Planning

M-Track is an optimal solution for manufacturers to plan robotic paths as it is flexible, reliable, and highly adaptive to environmental changes. It helps robots reach the target position accurately to complete the preset task.

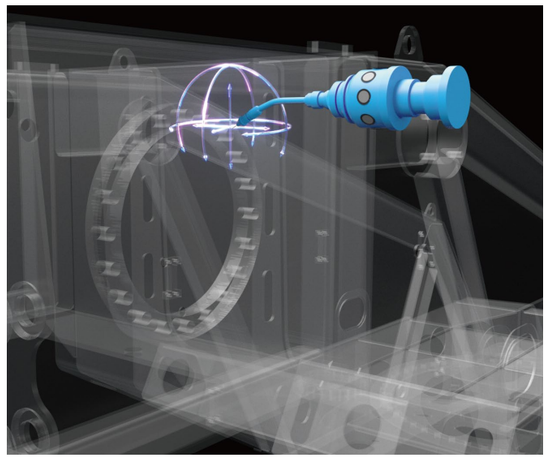
By identifying the positions and orientations of a tool simulator in the workspace, M-Track's tracking system can transmit the information to path planning software. Its path planning software can automatically devise a safe and effective path ready for execution.



Accurate 6D Pose Tracking

Based on stereoscopic vision technology, the tracking system can accurately and efficiently capture the path of the tool simulator. It supports the accurate output of 6D poses of the simulator and comprehensively captures the pose of the tool center point.

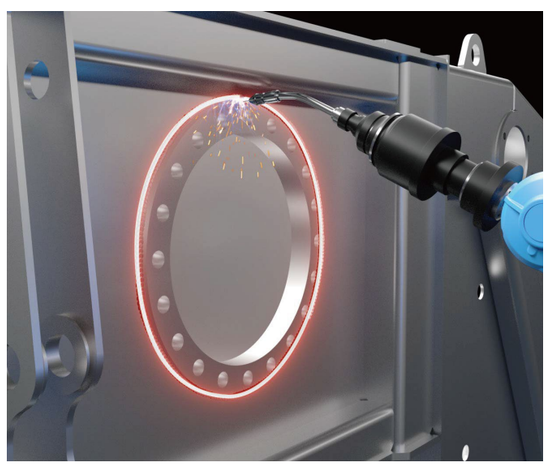
M-Track's high-precision tracking ensures appropriate path planning and safe operation of robots. Its accuracy reaches 0.049 mm when the tracking range is 10.4 m^3 and 0.067 mm for 28.6 m^3, and 0.089 mm for 49.0 m^3.



Convenient and User-friendly Operation

The system can be used directly without complex programming. Its tool simulators 3D printed in the form of actual tools are easy to use. Whether you are a professional engineer and a novice, you can know how to use it regardless of your level of expertise.

It can simulate the motion of human operations in a real workspace. Its behaviour-based simulation allows path planning more adaptive to real-world working conditions and production needs. The path can be saved for future use with just a few clicks.



Highly Adaptive for Vast Applications

The automated smart robot path planning system comprises perception, planning, and execution modules, which cater to different applications such as grinding, coating, welding, and more.

The robotic path planning software is compatible with various robots, including ABB, KUKA, FANUC, and EFFORT. It supports the planning of lines, curves, etc. Be it indoor or outdoor, structured or unstructured environment, it is capable of meeting different requirements for different industrial scenarios.



Workflow

1. Easy Deployment: quick set-up to cater to vast scenarios

2. Manual Teaching: guide the robot with a tool simulator whose 6D poses are obtained by 3D tracking system

3. Intelligent Path Planning: software sets a path for the robot based on the 6D poses

4.Task Execution: robot travels the planned path and completes tasks

Technical Specification

Type		M-Track Intelligent Robotic Path Planning and Guiding System
Tracking accuracy	10.4 m^3 (Tracking distance 3.5 m)	0.049 mm (0.0019 in)
	28.6 m^3 (Tracking distance 5.0 m)	0.067 mm (0.0026 in)
	49.0 m^3 (Tracking distance 6.0 m)	0.089 mm (0.0035 in)
Robot models supported		ABB/KUKA/FANUC/EFFORT, etc
Tracking frequency		60 Hz
Tool simulator		Custom
Operating temperature		-10 °C-40 °C