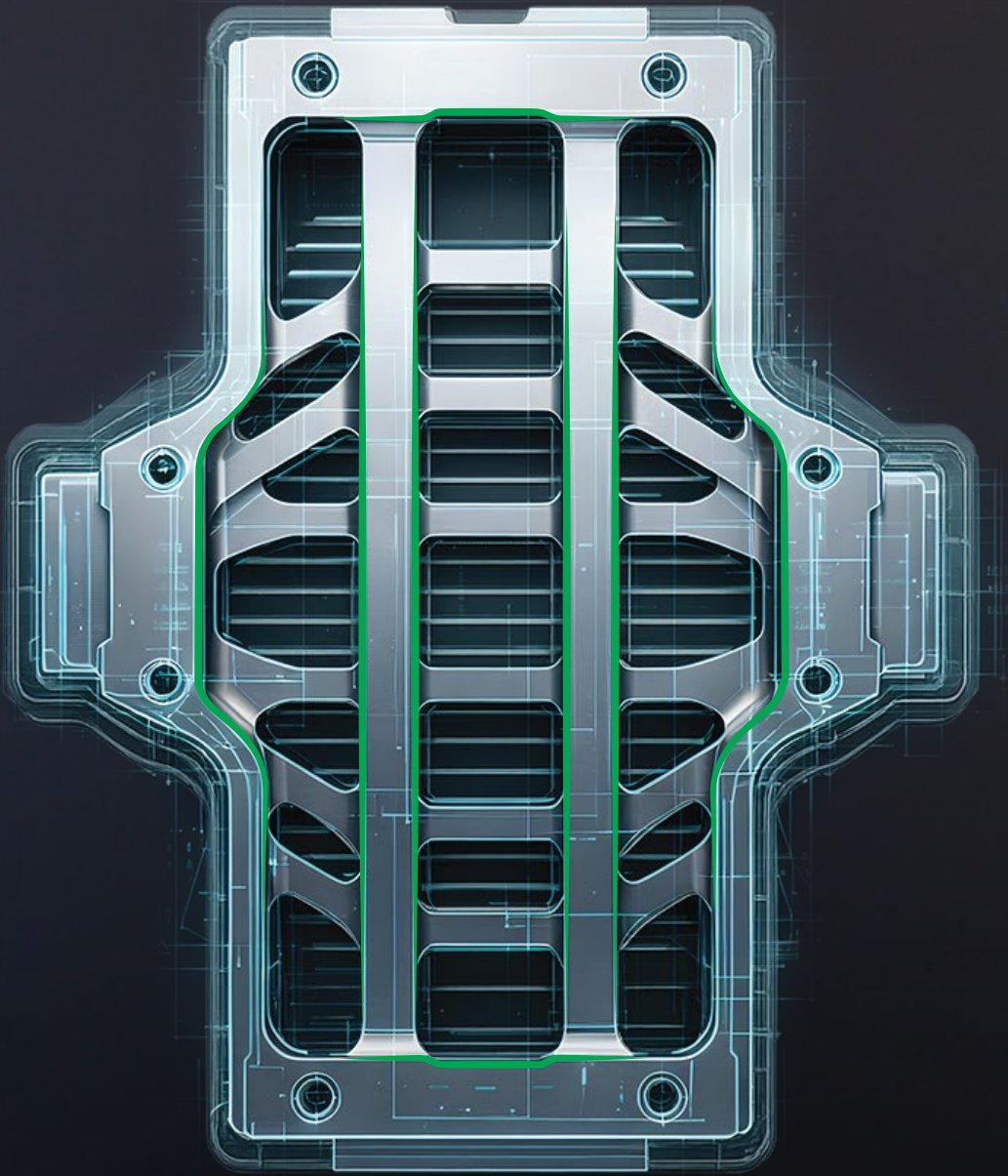


**Bilinch**



**SELF - PROGRAMMING INTELLIGENT**  
ROBOTIC WELDING SYSTEM

 **INTECRO**

[www.intecro.com.tr](http://www.intecro.com.tr)



## Problem: Manual robot programming bottleneck

- Hours of offline or teach-pendant programming for every new workpiece
- Strong dependency on skilled operators
- Production delays and high setup times



## Solution: Self-programming on welding with Bilinch® + AI

- Eliminate the programming phase entirely.
- Real-time workpiece analysis and automatic welding path generation.
- Turn days of setup into minutes of production.

# How It Works

## BILINCH® WORKFLOW



### SCAN

Multi-view point-cloud acquisition using 3D cameras.

### DIGITAL TWIN

Point-cloud filtering, segmentation and CAD alignment.

### DETECT

Identifying weld seams and process types.

### PLAN

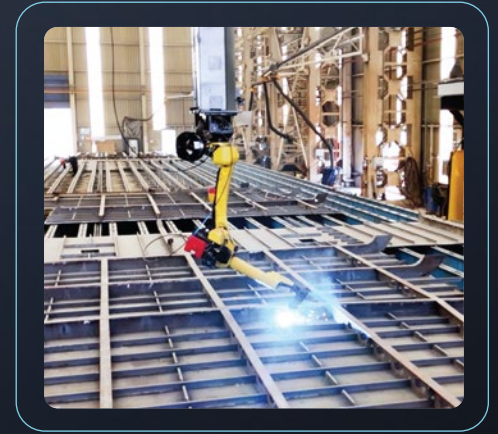
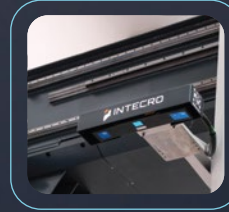
Planning weld sequence and welding modes.

### GENERATE

Collision-free, reachable robot path computation.

### WELD

Executes the weld with adaptive parameter control for perfect quality.



✉ info@intecro.com.tr

🌐 intecroroboticwelding.com

☎ +90 850 223 0 468 (INT)

☎ +1 (630) 948-8221

📍 ANKARA - VIA TOWER MANAGEMENT - MARKETING - SALES OFFICE

Söğütözü Mah. Nergiz Sokak No: 7/32  
Yenimahalle 06560 Ankara/TÜRKİYE

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Yeni Batı Mah. 2400 Sokak No: 13  
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11417 Irving Park Rd. Franklin Park  
60131 Illinois USA

## -SCAN TO WELD-

Scans tack-welded or fixtured materials without requiring any CAD data, creating a high-fidelity 3D digital twin through multi-sensor integration.

If CAD data is available, it intelligently incorporates it to enhance process accuracy.

Automatically filters out non-essential scan data (frames, jigs, etc.) and identifies only the weldable components.

Detects weld seams and paths, generating optimal welding trajectories.

Defines the most efficient welding strategies and sequence for each workpiece.

Plans reachability, collision avoidance, and motion paths tailored to the robot and the workpiece.

AI-powered weld parameter generation ensures precise and consistent performance. (NEW)

Dynamic workspace mapping through AI-based motion prediction enhances safety and adaptability. (NEW)  
Executes adaptive multi-pass welding for superior quality control.

Performs autonomous weld sequencing for maximum efficiency and reduced cycle time.

Automatically generates the complete robot program – no manual coding required.

Ensures perfect accuracy through integrated weld calibration, combining laser seam tracking, seam finding, and touch-sensing feedback.

**BILINCH**<sup>®</sup> is an intelligent system born from the fusion of SensorFusion, Artificial Intelligence, Digital Twin, and Robotic technologies. This technology, without any human intervention, scans, digitalizes, analyzes, creates welding plans, enables robots to self-program, and autonomously performs the welding process for the complex manufactured components that form the structure of a ship. BILINCH<sup>®</sup> is transforming the traditional welding processes of the industries into a new era of smart, seamless, and autonomous production!



**In-factory use**



**Large-scale production lines**










**Small-scale manufacturing cells**

## AVAILABLE TECHNOLOGIES

-  Automatic Workpiece Scanning
-  3D Digital Twin Generation
-  Hybrid Sensor Technology
-  Touch Sense Alignment
-  Through-Arc Seam Tracking (TAST)
-  Multi-pass Welding
-  Automatic Collision Detection
-  Part Recognition up to 2 Meters in Height
-  AI-assisted Welding Parameter Optimization (\*)
-  AI-assisted Area Planning (\*)
-  Auto Robot Programming

\*(Available Soon)

## NO NEED FOR

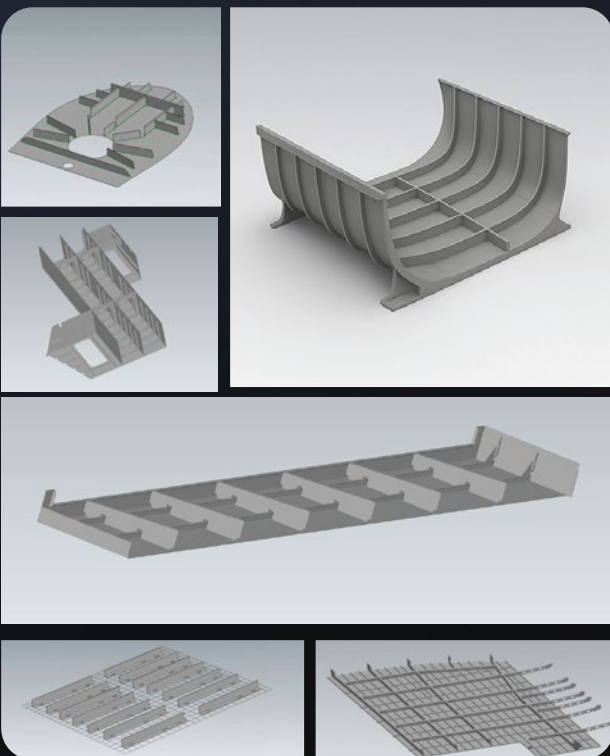
-  No Human Intervention Needed
-  CAD-less Processing
-  No Need for Part Fixtures
-  No Programming
-  No Teaching
-  No Collisions, No Calculations
-  No Setup for Welding Parameters (\*)

Your robotic system is ready.  
LET'S START WELDING ?

[See Scan-to -Weld Video](#)



## Type of Welding Workpieces



## Real-Time Digital Twin Generation

