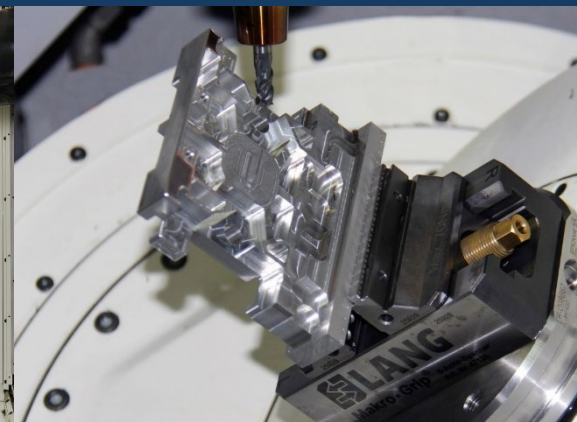
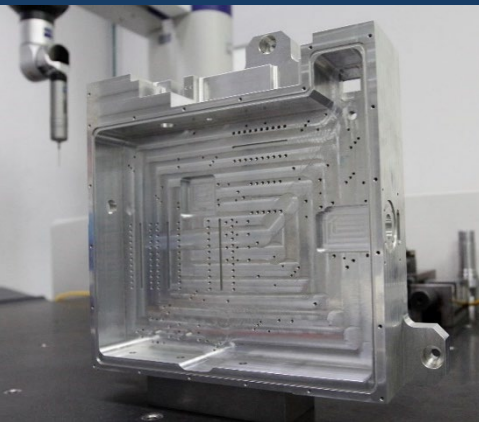




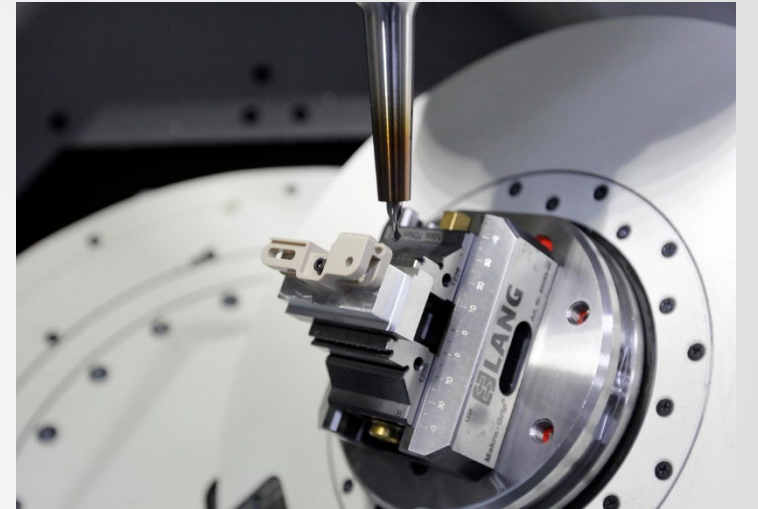
# Automation Success Story

*Tonasco Presentation - Domestic Investment Seminar*



# Agenda

- Introduction Tonasco
- Automation & Digitalization
- Benefits & Challenges





# Tonasco Introduction



- High **Precision**, High **Complexity** Milling & Turning parts
- Excellent **Quality** and **Surface Finishing**.
- Support from **Prototype** to **Small Series Production**.



High Precision Complex Machining



High Surface Finishing

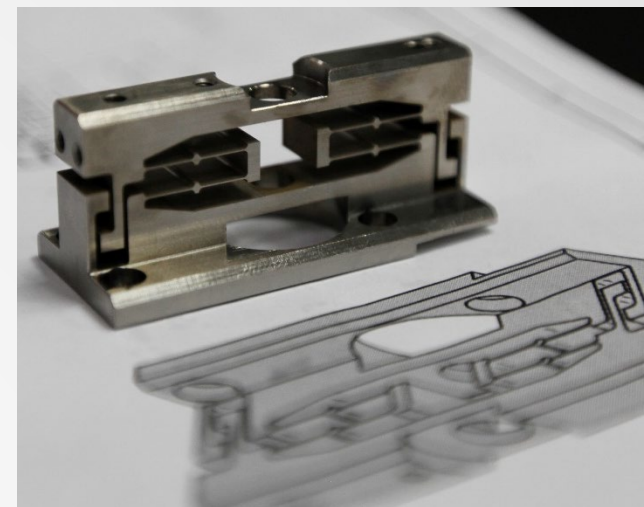
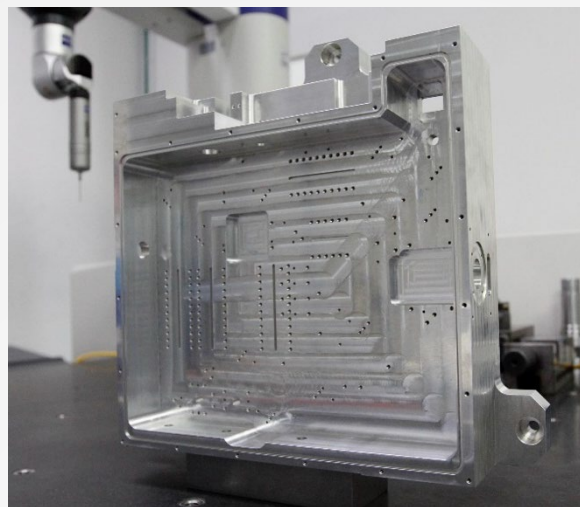
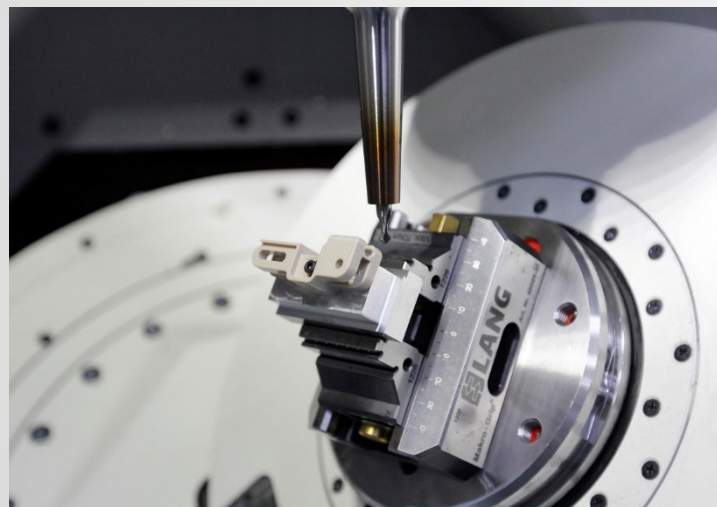
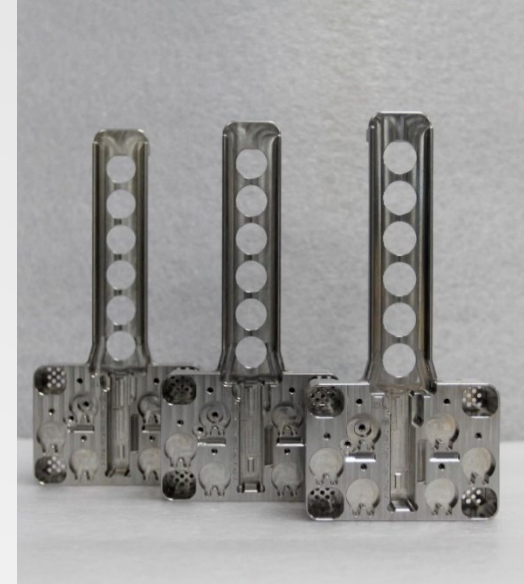


Small Series Production

# Tonasco Introduction



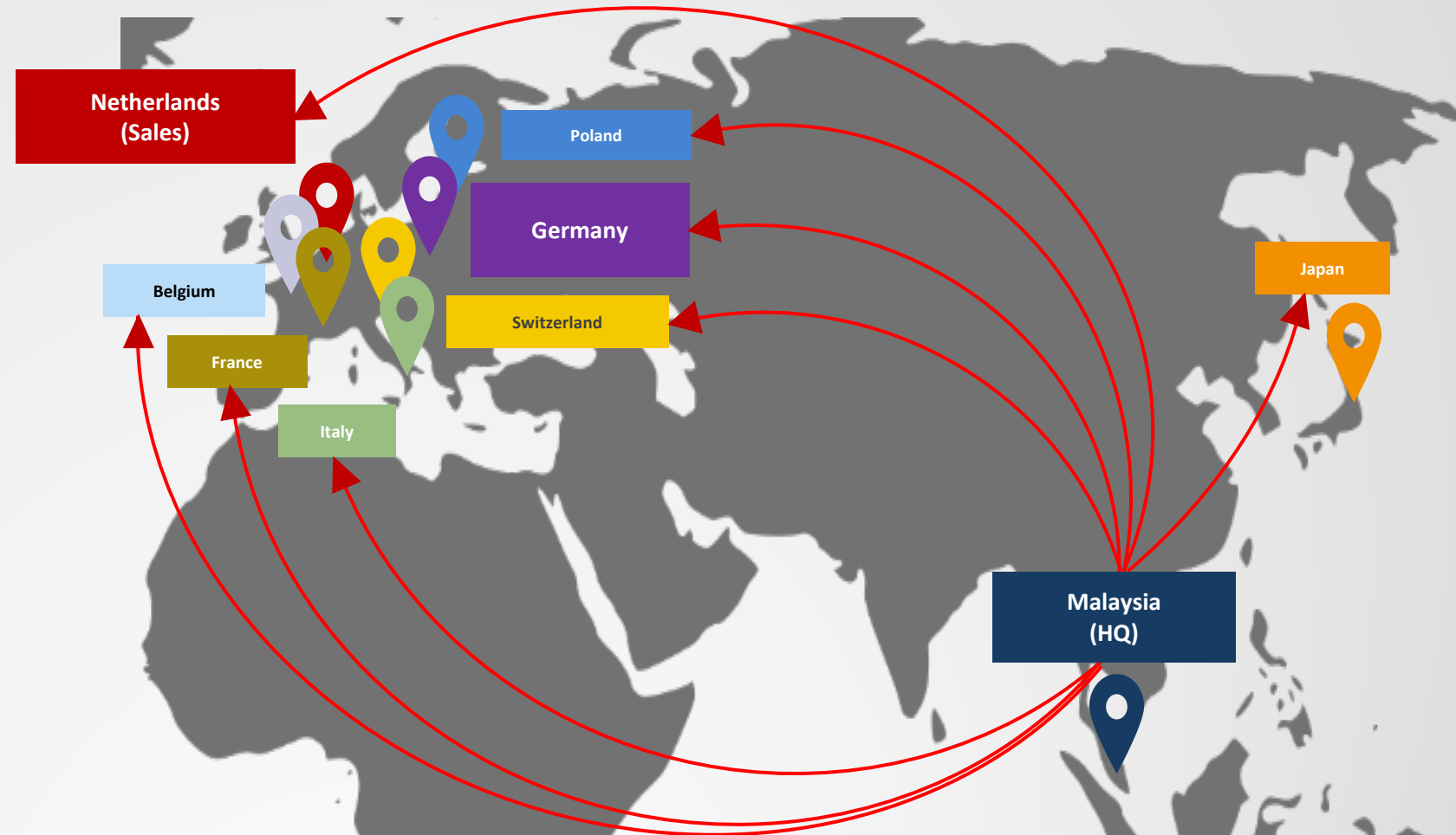
- Medical & Diagnostics Devices
- Semicon & Optical Instrument
- High Tech Production Automation



# Tonasco Introduction



- over **100** customers  
Strong EU-clientele





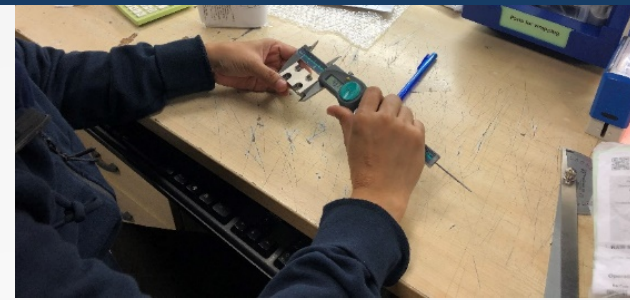
# Factory before Automation



Very Labor Intensive  
&  
Very High Skilled Operators



Manual Work Piece loading

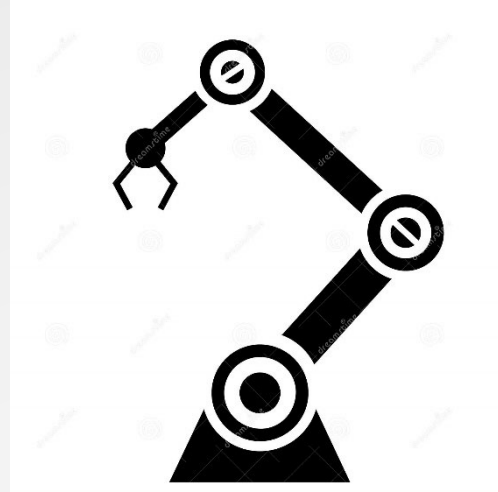


Manual Quality Measurements

# Automation & Digitalization



High Tech Machines



Robot Automation

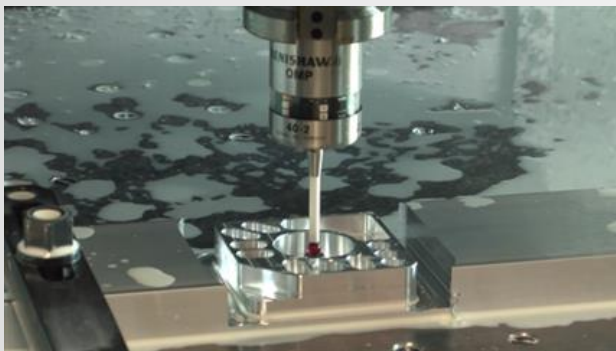


Digitalization &  
Integration

# High Tech Machines



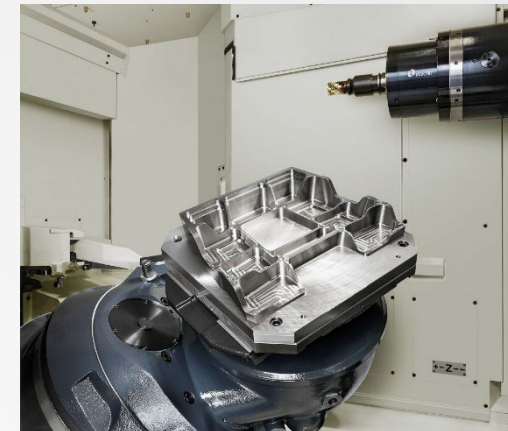
5 axis CNC milling



Automated Work Piece & Tool Measurement



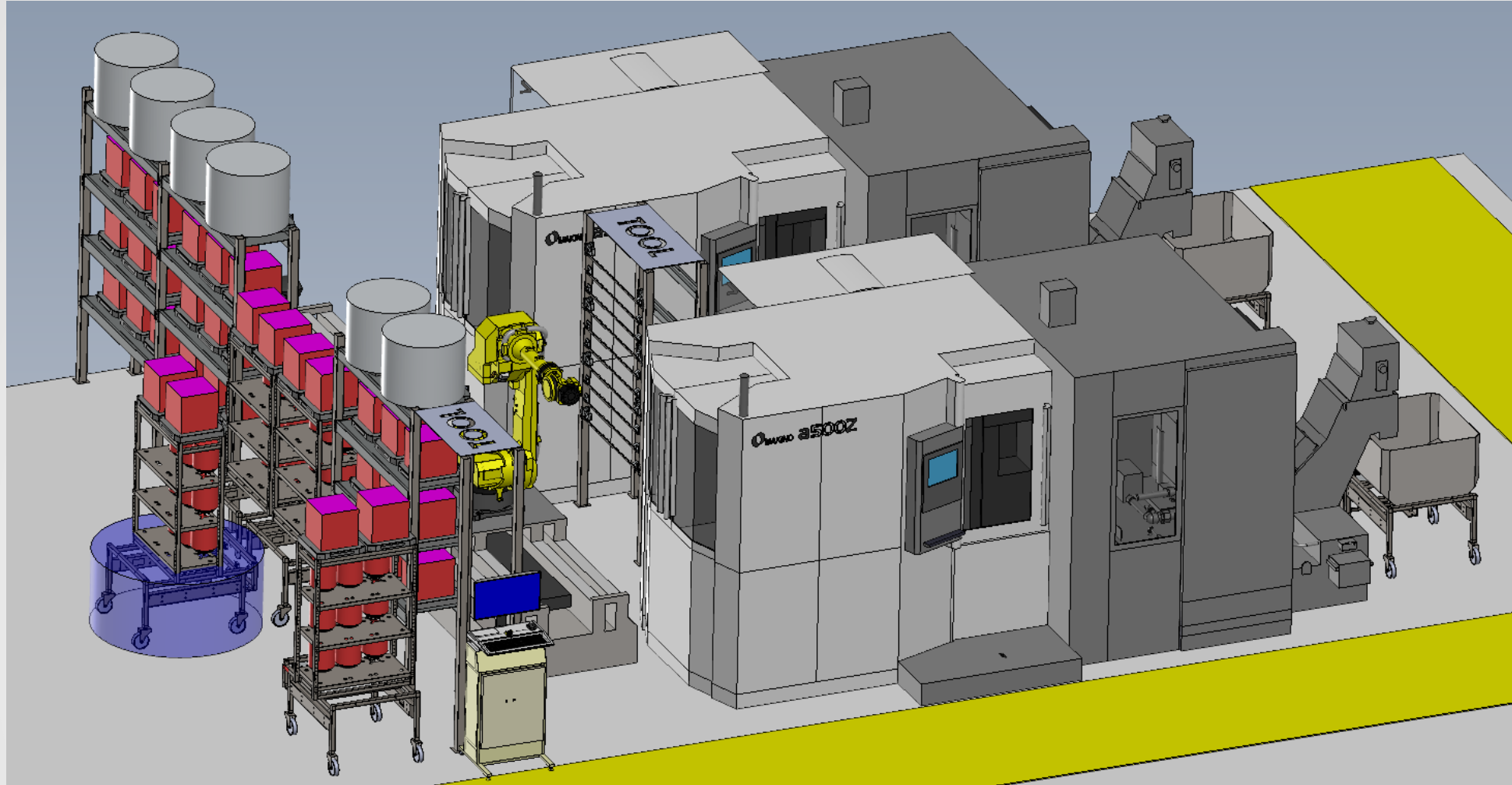
Advanced Coolant System

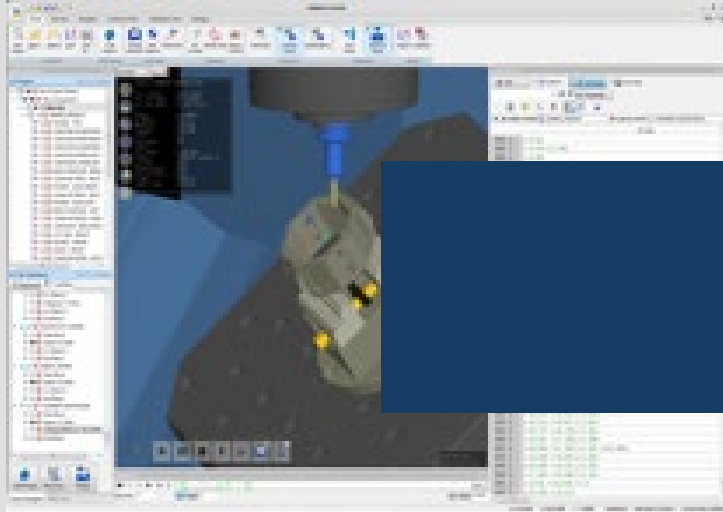


High Accuracy - +/-0.01mm

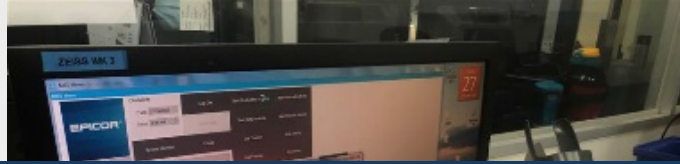


# Robot Automation





Program Simulation  
& Tool  
Management  
integration



Integration ERP,  
robot  
scheduling, NC  
code



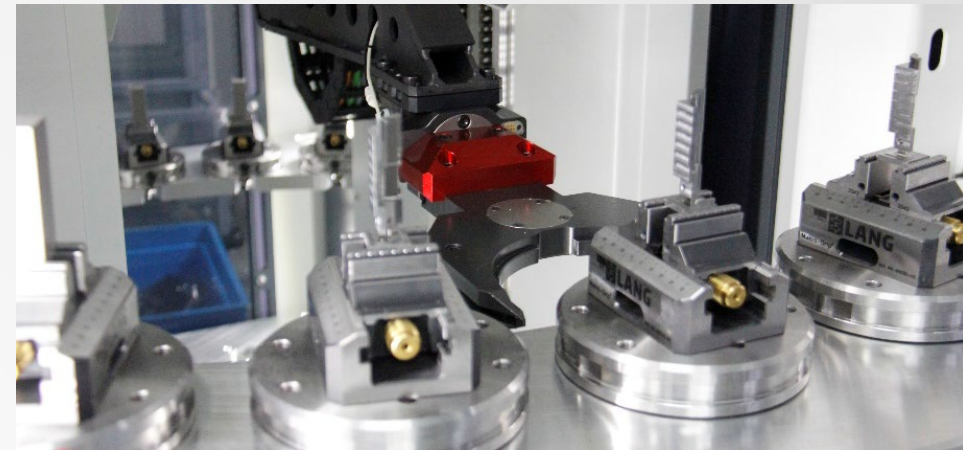
IoT, Reporting &  
Data collection

## 1. Less labor intensive:

- Before Automation: 6 units 3-axis CNC milling & 14 operators
- After Automation: 2 units 5-axis CNC Milling & 5 operators

## 2. Consistent Output -> Profit

## 3. Consistent Quality and Tolerances

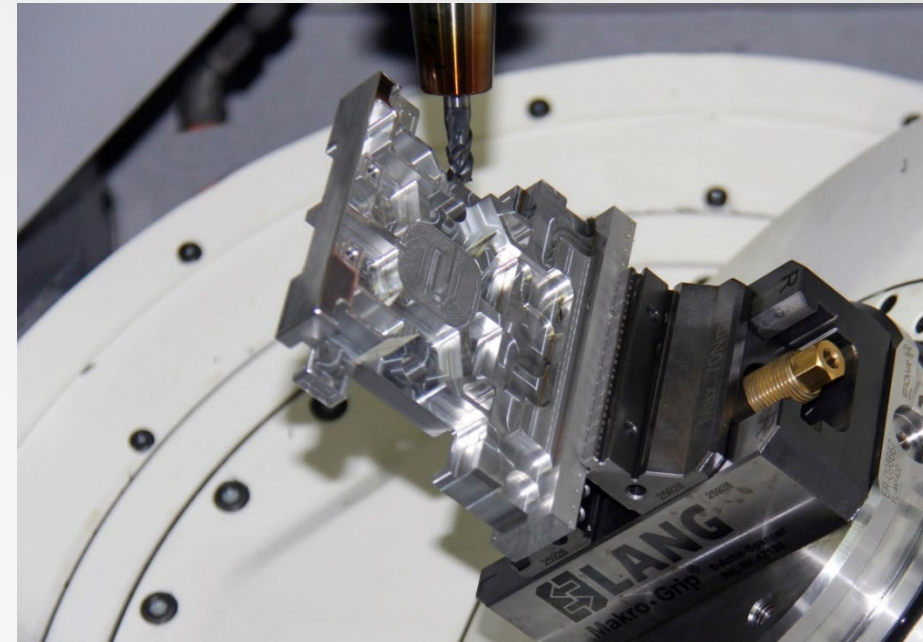




# Challenges



1. Engineers
2. Knowledge
3. Preventive Maintenance Mindset
4. Capital intensive (200% more)



# Closing



- Benefits outweigh Challenges
- Take your time to overcome Challenges
- Utilize Malaysia Government Support



# Questions?