Volume Production of Microsystems for Headsets and Wearables
• Introduction of STT
• Case headset production
  – Zero defect production
  – Size reduction of the design by 30%
• Production challenges
History

• STT Products bv is founded by Mr. Piet Steursma in 1986.
• Our roots are in the Medical Device Industry
• On the first of January 2016 STT moved in a new 3500 m2 building
Assembly department
• Personnel exists of 25 very experienced and well educated engineers
• All with a passion for technique
STT team
STT departments

3 main departments

- Engineering
- CNC machineshop
- Assembly
All-in-house concept

- Engineering
  - Mechanical (3D CAD)
  - Electrical (EPlan)
  - Pneumatics (CAD)
- Software
  - PC: NI LabView
  - PLC: Siemens, Omron
  - Robotics: ABB, Fanuc
  - Vision: Cognex
All-in-house concept

- CNC machineshop
  - 3 axis CNC milling machines
  - 5 axis CNC milling machines
  - Automatic Robot loading
  - CAM off-line programming with EdgeCAM
  - CNC lathe machines (automatic loading and unloading and milling functions)
  - Anodize department
All-in-house concept

Assembly
  – Mechanical
  – Electrical
  – Pneumatic
All-in house concept

- Quality Control
- Service
  - Testing
  - Repair and maintenance
Fields

• Test and Measurement

• Medical

• Production Automation
Production
new generation Bluetooth headset
Current situation

- Volume > 3 million products per year
- 500 operators
- Level of failure rate too high
- Increase of production level => higher failure rate level
Manual production
Desired situation

• Further miniaturization of product
• Zero defect production
• Stable production quality
• Production cost that is less dependent to salary levels in that area
Challenge

Extreme enlarged picture
Smart Engineering

Close cooperation between

– product designers
– process engineers
– Mechanical/automation engineers

 Leads to innovation!
Smart mechanical solutions
Process control with Vision Techniques
• More information regarding the developed production line can be made available upon request by Menno Kooistra, kooistra@sttproducts.nl
Next steps

- Upgrading from protoline to professional production line
- Built automated production line
Results

• Proven that product can be further miniaturised
• Proven that almost zero defect production is possible
• With further automated Production the costs are less dependent on the location (salary level)
• STT developed knowledge and experience of micro assembly