SIDIO AIRUS
Inspección y control de calidad basado en tecnología de luz blanca

DMRO Spain (Jesús Freire)
Preliminary Joined Development

Measure is a necessity in the design and production stages

A new product developed by nub3d and ABB, where both have provided their best practices and capabilities…

- 3D white light Digitizing technology
- Quality control and inspection processes
- Metrology
- 3D software
- Robot automation
- Manufacturing processes
- Post-sales worldwide network for technical support
Technology
What is an optical digitalizer?

An optical digitalize is an alternative technology respective traditional Coordinate Measuring Machine (CMM). It is a system able to measure coordinates 3D without any contact only by use of projection and captation of light.

Real part measured with white light

Result of measurement
Technology
What is an optical digitalizer?
Technology
Measurement Technologies

- **CMM** – Measuring by contact

- **Láser** – 3D Lines

- **Visión** – Camara 2D

- 3D White Light / Blue light
What Problem we solve?
Automatic GEOMETRIC inspection of parts
Inspection Examples 1

RPS Alignment

CAD-to-data comparation
Color maps

Holes
Hole measurement, position and diameter

Edges
Inspection Examples 2
Inspection Examples 3

OK / NOT OK

Flush & Gap
ABB Range of Products

FlexInspect
### Parts lifecycle. Measurement needs Mass-Production

<table>
<thead>
<tr>
<th>Product Stages</th>
<th>Prototype</th>
<th>Preproduction</th>
<th>Ramp-up</th>
<th>Mass-Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMM</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>WL SYSTEM</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>ARTICULATED ARM</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>CONTROL JIGS</td>
<td>✗</td>
<td>✗</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>INLINE SENSORS 3D LINES</td>
<td>✗</td>
<td>✗</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
### Parts lifecycle. ABB Range of Products

<table>
<thead>
<tr>
<th>ABB Product</th>
<th>Prototype</th>
<th>Preserie</th>
<th>Ramp-up</th>
<th>Mass-Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIDIO</td>
<td>FlexInpect OL (Sidio Airus)</td>
<td>FlexInpect OL (Sidio Lite)</td>
<td>FlexInpect IL (Sidio Lite)</td>
<td>FlexInpect Body (Sidio Airus)</td>
</tr>
</tbody>
</table>
Automatic off-line inspection system
FlexInspect OL (Sidio Airus)

Robotized dimensional inspection cell for agile use in workshops
Specially suited for Preseries but fitting also for steady Production:

- Easy use from touchpad HMI
- Manual load of turning table
- It substitutes control jigs
- Compliant with VDI/VDE 2634 and CE
A robot allows SIDIO AIRUS a high degree of freedom to digitize complex forms.
Automatic off-line inspection system
FlexInspect OL (Sidio Airus).

Working cycle
Automatic off-line inspection system
FlexInspect OL (Sidio Airus). Working cycle
Sidio Airus planner
Automatic in-line inspection system
FlexInspect IL (Sidio Lite)
Automatic in-line inspection system
FlexInspect IL (Sidio Lite)

- Cycle time for a typical subassembly around 60-100 seg
- Capable of extracting drills / edges / nuts / spot Welds / Surface dots / color maps
- Flexible and programmable
- Enabling In-line measuring
- Multiprocess: Multi-robot + multisensor system
- Robot IRB 1200 (2/3/4..) + Sensor Sidio Lite
Automatic in-line inspection system
FlexInspect Body (Sidio Airus)

- Ongoing development with NISSAN.
- CMM correlation successful.
- In-line measurement of dimensions and flash&gap features
Automatic in-line inspection system
FlexInspect Body (Sidio Airus)