

# Fixture traceability in aeronautic industry



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# Fixtures Management (1/3)



- ASCO Industries manufacture complex mechanical assemblies and major functional components for the aerospace industry.
- To manufacture these parts, fixtures are needed i.e. milling fixture, assembly fixture, handling fixture, control fixture, etc.
- 2 000 fixtures are in used in 6 different buildings.

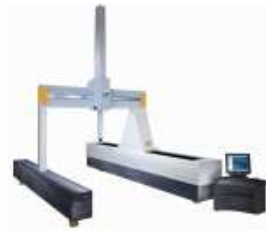


# Fixtures Management (2/3)

- Fixtures need to be managed: they must be identified and located.
- The Fixture Department collects and processes different useful data:



Location



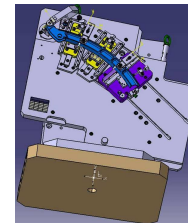
Periodical control date



Fixture status



Customer information



General information

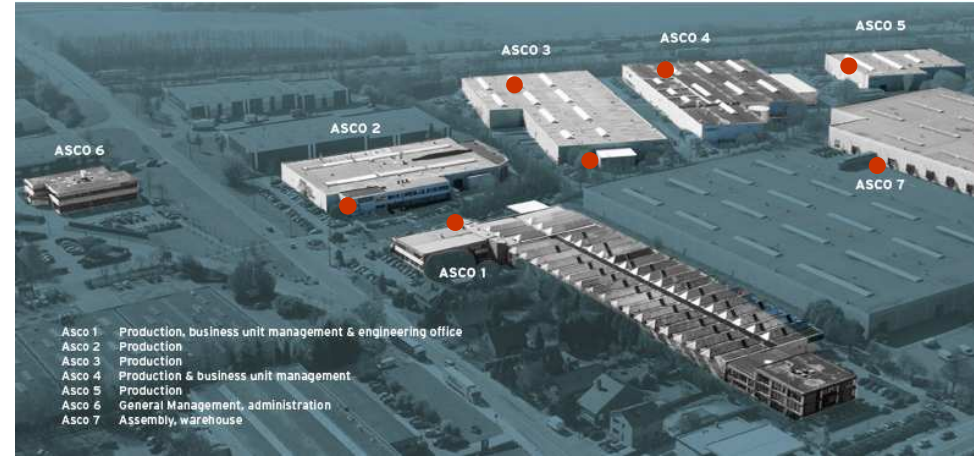
- These data are used in the following cases :
  - Periodical control
  - Audit (customer, internal...)
  - Maintenance
  - Stock management
  
- These data are used by numerous departments:
  - Quality Control Department
  - Quality Assurance Department
  - Fixture Management Department
  - Commercial Department

- The current situation presents different difficulties:
  - **Fixture identification:** The ID number is engraved on the fixture BUT the rest of the needed information are not easily available (fixture's owner, periodical control date, status, etc.).
  - **Fixture location:** Fixtures are often moved from one building to another → Difficulty to find fixtures for controls, audits, etc.
- Consequence: **Waste of time.**
- **SOLUTION:** The **RFID Technology** will allow ASCO to manage properly the identification and location of the fixtures.

# RFID: The Global Solution (1/2)



Identification: **TAG** on the fixture



Location: **ANTENNAS** placed at each building's doors



Data easy to read and change: **PDA**



# RFID: The Global Solution (2/2)



Location

Read with



ON/OFF

Fixture status

Read / changed with

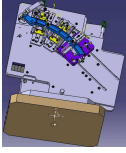


Periodical control date



Customer information

Read with



General information

All the data are available via ERP & via PDA (consulted in workshops)



# The TAG (1/2)

- Type: Passive - UHF GEN II.
- The TAG contains only the ID number of the fixture.
- The TAG must have the following characteristics to be efficient:
  - Waterproof
  - Shock resistant
  - Resistant to damages caused by the metal chips
  - Good reading rate / distance



Tag OMNI ID Max



# The TAG (2/2)



- 7 tags were selected by our solution integrator RFIDEA.
- These tags were placed on fixtures to be tested in real conditions during 4 weeks.
- **RESULTS:**

	TAG 1	TAG 2	TAG 3	TAG 4	TAG 5	TAG 6	OMNI ID
READING RATE					NOT TESTED		
WATERPROOF							
SHOCK RESISTANT							
RESISTANT TO DAMAGES CAUSED BY THE CHIPS							
SIZE							
PRICE							

# The PDA

- Connection via login & password.
- Consultation of the useful data directly in workshops.
- Possibility to modify data depending on the user's profile.
- Data transfer to ERP trough the docking station.



Motorola MC9090-G

# The ANTENNAS

- Placed at each building's doors.
- Allow an automatic reading of coming in / out fixtures without any human intervention.
- Transfer automatically data to ERP.
- Installed antennas do not modify the working environment.



Antenna Siemens SIMATIC RF660A

- 3 different readers & antennas were selected and tested in our environment by RFIDEA: SIEMENS RF670R and RF660A were approved

- Fixtures management is **easier**, more **effective** and **transparent**.
- Data accessible to everyone in one **single database** which is always up to date → **No more waste of time** by looking for information or a given fixture.
- **Data available in one click** – Big saving of time when an audit occurs.
- **Improved management** of the periodical control done following the **customer specifications**.

- First approach of the RFID technology with a reasonable-size project  
→ Numerous advantages.
- Working with a solution provider such as RFIDEA, allowed ASCO to find, develop and implement the best suitable and optimal solution in full neutrality towards manufacturers.
- Future possible projects with the RFID technology to improve:
  - Localization of fixtures (e.g. by machine)
  - Tracking of the product parts

**Thank you for your attention**

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