IAC

CASE STUDY

End of line test stations

THE CUSTOMER

International Automotive Components (IAC) is a global supplier of automotive interiors (instrument panels, cockpits, door panels, center consoles and more).

IAC™
International Automotive Components

REQUIREMENTS

Design, manufacture and installation of end of line electrical test stations for a new cockpit assembly line.

RESULTS

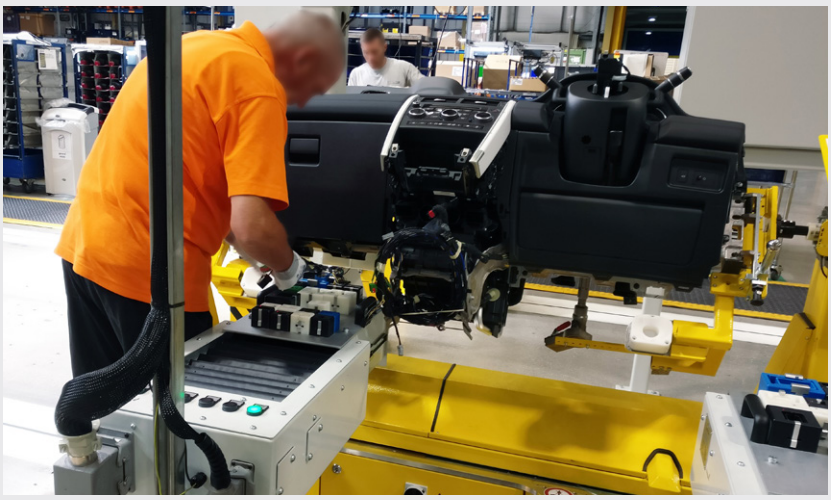
- Reliable test equipment based on established Sorion technologies
- Flexible test system to cope with increased product variation
- Full traceability using the Orion™ database

THE CHALLENGE

The project involved designing, building and installing **2 online electrical test stations and 1 offline rework station** for IAC's new cockpit manufacturing facility at Halewood, Liverpool.

IAC required the solution to be fully integrated with other plant-wide systems and fixtures. The installed systems had to be robust and reliable to allow for 24/7 operation testing 45 cockpits per hour.

Collection and storage of detailed test result information was also part of the brief.



End of line test station at IAC Halewood

BACKGROUND

IAC Halewood features an extremely flexible cockpit just-in-time (JIT) assembly line for several vehicle models, substituting a fixed carousel with 42 Automated Guided Vehicles (AGVs). The AGVs enable mass customisation and can assemble up to 4 million variants on one production line that can be easily reconfigured by re-taping magnetic guidance stripes on the shop floor.

The primary requirement for the **electrical test stations is to test the cockpits for connectivity and part number traceability** in order to detect any connections which have been missed during the assembly process.

After a thorough requirements capture exercise Sorion designed a system based on their established electrical test technologies, with proven reliability in hundreds of installations within the automotive industry around the world.

The equipment was designed to allow maintenance, upgrade and modifications to be easily obtainable and comes with excellent support packages.

THE SOLUTION

Each electrical test station built for IAC Halewood incorporates the following:

- 3 individual sets of ruggedised connectors for the 3 different cockpit models tested, mounted within an assembly fixture
- ETest control cabinet housing the SEL0075 test system hardware
- Sextans-RT process control software running on a touchscreen rugged PC

The test process is managed by Sorion's core runtime software, Sextans-RT, utilising configuration data and custom scripting centrally managed from an IAC server. The operator is guided through the process via plain text and pictures.

The cockpit to be tested arrives to the station on an AGV and stops in a defined test position based on model and left/right hand variant.

Fully **intergrated with the AGV contolling PLC**, the test station gathers build data from the PLC system to identify the cockpit and load the individual tests appropriate to that model/variant. The station illuminates the LED indicators on the connector blocks that need to be connected.

Once all connections are in place the operator activates the main sequence to test for the correct connectivity of individual components by simple electrical connectivity tests or via **CAN or LIN communications** as appropriate.

Where available, the system records **part numbers, serial numbers and firmware revision**. This also adds extra traceability to the manufacturing and test process.

At the end of the test cycle **all results are sent to a central Orion™ database** that allows easy access to detailed test results and system performance reports via a web browser.

ABOUT SORION

Founded in 1990 and with equipment installed and operated by major OEMs and Tier 1 suppliers around the globe, Sorion Electronics has an established reputation for innovation, quality, and reliability.

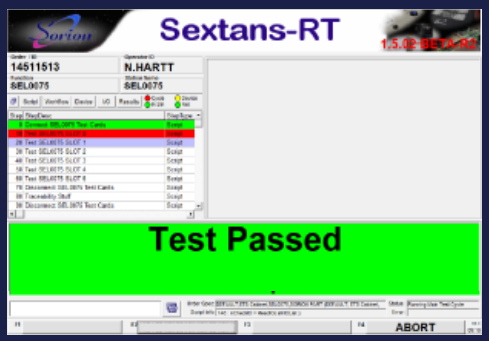
Your Partner for:

- Guided Assembly Process Control
- End of Line Test Systems
- Ruggedised Electrical Connectors and Harnesses
- Quality and Traceability Reporting
- Electronic Product Design and Development

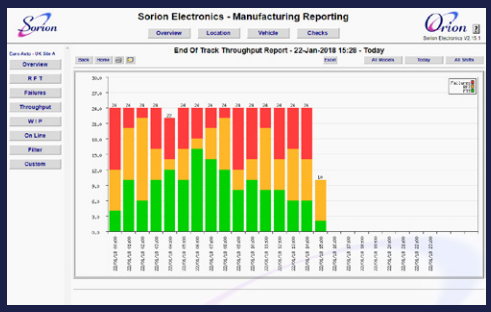
THE SORION SOLUTION

End of line test stations

Ruggedised connector rework fixture



Sextans controls the test process



Orion™ Traceability and Reporting

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