Fiat Chooses DIT-MCO to Ensure Integrity of its Pendolino Trains

Around the world, trains provide vital links among societies and economies. In Europe, people rely on trains as a principle means of transportation and distribution of goods.

The high profile Pendolino® family of "tilt trains," developed by Fiat Ferroviaria S.p.A., has provided breakthroughs in technology that allow maximum operating speeds of 250 km/h (150 mph). The Pendolino can negotiate curves 35 percent faster than conventional trains with no adverse effect on the quality of the ride.

Tilt-train technology was introduced in 1968. Since then, it has undergone major changes that accommodate strict international standards for safety and performance.

Pendolino trains are installed in many international localities, including Italy, Finland, Switzerland, Portugal, Spain, and France. In 1999, Fiat will start production for a Pendolino that will serve the west coast of the United Kingdom. Other current projects include systems for Slovenia and Poland, as well as an additional system for Finland.

DIT-MCO: Part of Fiat's Advanced Manufacturing Operation

Fiat's advanced manufacturing facilities use robotic welding systems and plasma cutting equipment. Its plants in Italy – Savigliano (Turin) and Colleferro, outside Rome – use DIT-MCO to run automatic tests of all electrical interconnects prior to assembly and to test the trains after final assembly. "Using DIT-MCO has allowed Fiat to greatly improve the reliability of testing on the trains," says Enzo Barri, Pluritec Italia, S.p.A., DIT-MCO's agent in Italy.

Elettromeccanica Parizzi (a member of the Fiat Ferroviaria Group) also relies on DIT-MCO systems to assure the quality of the electronic components and sub-assemblies. The Savigliano plant uses a DIT-MCO 9505, modified with a ground connection, with three switching units; Colleferro uses a model 9505 with two switching units. The plants also take advantage of the mobility provided by DIT-MCO's Model 2115 benchtop test system.

"Fiat and Parizzi draw big benefits using DIT-MCO systems, especially in the reliability of the products tested," says technician Massimiliano Pozzati. "We have reformed the quality of the products and the execution of the wirings."

Pozzati, the first test technician to use DIT-MCO in Fiat-Parizzi operations, installed the systems in the manufacturing departments of both plants in Italy. The test operations run continuity, insulation, and hipot tests.

The other significant benefit in using DIT-MCO automatic testing, Pozzati explains, is that the time to run tests has been reduced to two-thirds compared to the traditional mode. "Now we can test 95 percent of the wiring, but in the traditional mode the maximum was 25 to 30 percent," he says.

Pozzati also values DIT-MCO's capability to report faults. "In fact, all the reports are archived and controlled so we can analyze the cause of the faults and solve the problems," he says. They use the Errorlog Database Generator (EDG) software package to capture data that allows them to statistically analyze production and quality.

Fiat-Parizzi has taken advantage of other DIT-MCO features, including Test Edit® and Automatic Program Generator (APG). Pozzati anticipates using the Fault

Locator feature and the External Energization (EE) latching matrix capability in the future.

Pozzati summarizes the benefits Fiat-Parizzi has experienced from integrating DIT-MCO's automatic test systems into its operations: "Reliability, reduction of time for the test, and high quality."