

# CAF launches three subsidiaries at BCN Rail

CAF, Spain, launched three new subsidiaries at BCN Rail in Barcelona last month to market a range of new products developed by its research department, reports David Briginshaw from Spain.

**T**HE three subsidiaries are called Trainelec, Nem, and Traintic; and the former is leading the way. The most significant development announced by CAF is that it is now able to produce traction equipment both for its own emus and LRVs for also for third parties, which it will market through Trainelec.

CAF started to develop its own 3kV dc traction converter in 2002. The first prototypes incorporated into a complete traction system have been fitted to a two-car Civia emu built by CAF and on show at BCN Rail. Tests have been completed with Spanish track authority Adif and a third car is now being added to the train to enable it to be tested next year by Spain's national operator Renfe.

Trainelec has also developed traction equipment for 1.5kV dc metro trains and 750V dc LRVs. The first equipment



CAF's new Urbos light rail vehicle for Seville on show in Barcelona.

has been installed in a series 6000 train for Barcelona metro, and type tests will be conducted in an Urbos LRV for Seville. The first series-production orders have already been secured for LRVs for the new light rail line in Vitoria and new series 400 trains for Bilbao metro in northern Spain. Trainelec is currently designing a 25kV

ac traction system and expects to complete the first prototypes by the end of 2008.

CAF has set up Nem to market train maintenance technology to both railways and the increasing number of train builders tasked with fleet maintenance. Nem now has a range of vehicle maintenance products that are ready for the market. While they are aimed mainly at the rail industry, some of them will also be promoted to truck and bus operators. The new products include:

- a realtime diagnosis and maintenance system based on artificial intelligence with automatic learning capacity
- an advanced fleet management system called Maptrain which manages critical and instantaneous alarms from train to depot using remote communications and GPS signals
- a device to measure wheel profile using cameras and lasers, including intelligent software to extend wheel life and detect wheel-rail contact problems
- a system to trace bogies using RFID tags
- a laser-based system to measure and control bogie suspension, and
- a device to measure the variable-track gauge equipment on CAF's Brava bogies.

Traintic will produce and market a



A Civia emu fitted with CAF traction equipment has run more than 25,000km under test.

## Spanish technology

range of innovative train control, monitoring and control products.

CAF's research division has been an active member of the international group developing an interoperable Train Communications Network (TCN) since it was launched by the International Electrotechnical Committee in cooperation with the International Union of Railways (UIC). TCN specifies a communications protocol for the train bus so that all the electronic equipment on a train operates under a single standard network and can communicate with each other in the same language. This facilitates "plug-and-play" installation, and the addition of technologies such as GPS and GSM. It also simplifies maintenance and staff training.

The result of this work is a modular train control and supervision system called Cosmos which is being marketed by Traintic. Cosmos provides a single point for fault diagnosis, and allows functions such as traction and raising or lowering the pantograph to be controlled from a single point. Civia emus for Renfe are equipped with Cosmos.

Traintic has developed a number of other products such as an acceleration and temperature monitoring system called ATMS; a modular, lightweight and multi-functional events recorder called Orion; an intelligent and active tilting system known as Sibi that optimises tilting based on knowledge of the train's location; and a track-to-train communications system.



*The first of 20 four-car emus for the new commuter rail line in Mexico City.*

CAF is having considerable success around the world not only in winning contracts for trains and LRVs but also concessions to build and operate new lines. In June, for example, CAF was awarded a €110 million contract as part of a consortium with a civil engineering company called Alarko to build and equip an 11.5km double-track light rail line in the Turkish city of Antalya. CAF is responsible for supplying 14 low-floor LRVs, electrification, signalling, and equipping the depot. CAF will also maintain the fleet for the first two years of operation. The 35m-long five-section LRVs will each have 70 seats and room for 313 standing passengers at a density of 8/m<sup>2</sup>. The first vehicles will be delivered at the end of 2008, and the line should open in mid-2009.

CAF is the leader of a 30-year concession to build, operate and maintain the first commuter rail line in Mexico City, which involves an investment of €385 million. The project entails upgrading and electrifying the first 26km of railway running from Mexico City's Buenavista station to Cuautitlan. A fleet of 20 four-car emus will operate at six-minute headways in peak periods on the line, stopping at five intermediate stations. When the line opens in 2008, it is expected to carry 400,000 passengers/day and 120 million a year. There are plans to extend the service another 53km to the northwest.

CAF is clearly broadening its horizons and expertise, as it tries to gain market share around the world. **IRJ**