

# A Solution To Upgrading Information Systems

Refurbishing information systems is a challenge for train owners trying to bring 20-year old trains up to modern standards. LON-based information systems offer a flexible, time-saving and cost efficient route.

**T**RAIN refurbishment poses significant challenges for train operators. Besides replacing worn or outdated panelling, furniture, and interior decoration, the passenger information, emergency, and entertainment systems also need to be upgraded to modern standards.

Train owners focus on reliability, durability, scalability, ease of use, comfort, and security. Solutions should be cost efficient, easy to install, and integrate with existing systems. Proprietary systems are no longer the only answer as open, standardised systems are beginning to make their mark.

LON-based communication is but one of a variety of on-board communication systems currently available. Originally used to monitor systems such as lighting, closed-circuit television (CCTV), and heating in large buildings, the LON network standard has proven itself robust enough for use on

trains, and is gaining in popularity because of its flexible, modular design.

Helsinki City Transport embarked last year on a five-year refurbishment project for its 20-year old fleet of 39 class M100 metro trains. The project is due to be completed in 2008 at a total cost of about €8 million. Each train will undergo both internal and external refurbishment, with the addition of brand new features, such as air-conditioning in the drivers' cabs.

Other work includes repairing internal lighting, partial renewal of the heating system, cleaning, and repair of the coach interiors such as panelling and seats. Damaged side windows will be replaced, as will the safety edges at the doors.

Helsinki City Transport will refurbish the bogies, while Talgo, Finland, will execute the main bulk of the refurbishment work, partly through sub-contractors.

SA ViewCom, a Danish developer of passenger information systems, entertainment, and CCTV systems for trains, was chosen to design and supply a LON-based passenger information system for the metro trains.

The company will supply a specially modified version of its Pilon passenger information system. Pilon conforms with LonWorks standards and is a modular communication system which comprises intercom, public address, visual displays, and passenger alarm units.

"Our choice of SA ViewCom was based on three main factors," says Mr Matti Asikainen, sales manager at Talgo. "Their

solution was easy to adapt to the old system currently in operation on the trains, they could compete with respect to price, and we felt that they best understood the customers' needs."

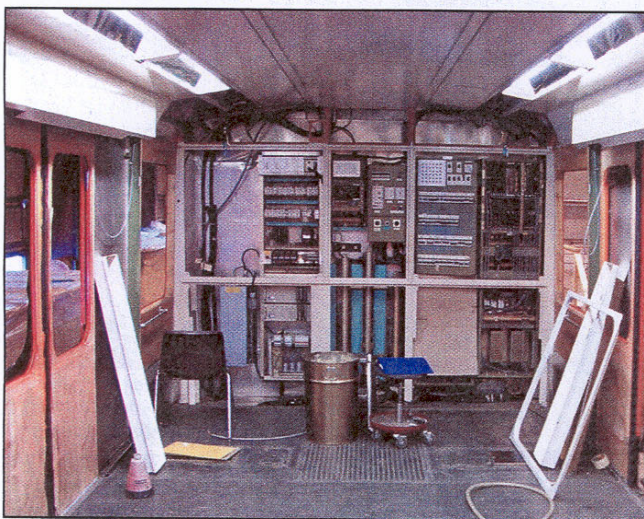
Mr Line Matthäi, sales manager at SA ViewCom, explained how it was able to adapt its system: "The standard information system did not meet the exact requirements of the customer, but due to its flexibility we were able to make the small adjustments easily."

SA ViewCom's Pilon system is based on the IEEE 1473L LON communications protocol. Each of Helsinki City Transport's trains will be installed with passenger emergency units and driver control panels, which enable both intercom and public address in the coaches.

Each component functions as a node on the network with its own unique address. This makes it possible to run the entire communication system through a single set of wires. Sometimes it is possible to use the existing system thereby saving time and helping to reduce costs.

In refurbishment projects, easy installation of new communication systems reduces costs significantly. At the same time LON-based systems are prepared for future expansion because of their modular design. "Once the main network is in place, new equipment can be installed without requiring a new set of cables through the train. It is basically plug and play, which saves both time and money," says Matthäi.

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Left: refurbishment of a Helsinki metro car in the early stages of work. Right: a refurbished coach nears completion.

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