

Screen stars

Operators such as Leipzig MTA expect today's onboard infotainment systems to offer crystal-clear HD displays and real-time functionality

RIGHT: Vianova's infotainment system is installed across Leipzig MTA's varied fleet of trams, traller cars and buses

Onboard information and entertainment (infotainment) systems on mass transit authority (MTA) subways, trams and buses really began to grow in popularity around the turn of the century. "These early systems used 12in displays in 4:3 format and were limited in terms of interesting and up-to-date content," says Josef Kreidl, chairman at Vianova. "Since then, MTAs have created demanding standards for dynamic passenger information, pushing for innovations in display quality, functionality and reading distances."

Today, real-time dynamic passenger info – including connection information – has become a must, according to Kreidl. "Systems also typically include content such as news, weather information and sport updates – produced in high-definition (HD) resolution (720p minimum) and in 16:9 format," he says. "And to help balance the cost of these sophisticated systems, media companies have helped operators to develop parallel channels for advertisement income."

Vianova's own modular infotainment solutions are designed to achieve all these needs, as well as to be flexible and expandable for additional functions in the future.

Hard-working hardware

Vianova's display family was designed specifically for use in MTA vehicles. Both intelligent (standalone) and passive (with a remote server) display units are available. The design is based on robust electronic components (that Vianova says can last for 10 years or more) with modular extensions for WLAN, 3G/GPS, Bluetooth, video surveillance and passenger-counting systems. The displays have been designed for easy maintenance and service over a period of around 10 years. Vianova offers 18.5in, 17in and 15in screens, in dual- or single-display versions, and various mounting solutions (such as roof- or side-mounting assemblies).

Each display has its own scaler, enabling it to adapt different formats. "This means that the operator can run the same content in its new infotainment installations as it already uses in its existing equipment, as long as it is a compatible format," says Kreidl.

GigaSTaR II video signal transfer technology enables operators to connect up to 20 displays in a daisy chain to a single server.



“The GigaSTaR technology also supports long distances between the displays and ensures a robust signal transfer between the cars,” says Kreidl. “In addition, all parameters like temperature and display functions are monitored, and this information is automatically transferred so operators can see when a unit needs to be serviced.”

Vianova’s servers were also developed especially for onboard use. The modular platform can run video surveillance and passenger counting on top of its infotainment programme. GigaSTaR II and DVI video outputs are available. The servers’ basic interfaces are IBIS, IBISplus, USB, Ethernet and galvanic isolation. Extensions like RS232, RS485, WLAN, UMTS (3G), GPRS and DAB interfaces are also available. Compact flash cards and 1.8in SATA solid-state or hard drives are used as mass storage devices.

RIGHT: HD displays enable operators to offset costs through advertising revenue



INFOTAINMENT IN ACTION

Holger Müller, technical manager of infotainment at Leipzig MTA in Germany, reveals the lessons gleaned from 12 years of providing onboard passenger infotainment systems



Why do you offer infotainment?

Leipzig MTA has offered a combination of passenger information and entertainment by using a dual-display concept across our fleet of trams and buses since 2000. This gave us the opportunity to provide good passenger information, and by cooperating with a media company for the entertainment we kept the investment and maintenance costs down. By utilising the infotainment system for next-stop signalling, we were also able to reduce the investment needed for newly purchased trams and buses, because traditional LED displays were no longer necessary.

How many systems do you operate?

We have infotainment installed in 137 trams from various suppliers (Bombardier, Siemens and Heiterblick), 38 trailer cars and 84 buses (from Evobus, Solaris, Hess and Man). The system reaches more than 345,000 passengers a day.

How do you maintain your diverse fleet?

By changing suppliers. The media partner who was responsible for our infotainment from 2004 until 2009 integrated eight different hardware systems into our fleet. Our challenge now is to keep this variety of systems up and running at a reasonable cost. Recently, with our new supplier Vianova and its software partner BitCtrl, we were able to transfer the different hardware platforms to a unified concept for

easy maintenance. The powerful software platform LISA, which is integrated in all the systems, helped us to achieve this goal.

How have the technological changes of the past 12 years impacted you?

The first systems we integrated in 2000 had 12in displays in 4:3 format. Today’s content is created only in the 16:9 format with a minimum resolution of 720p in HD. By the end of 2012, we will have 115 trams and buses running infotainment with full HDTV in 16:9 format. Our suppliers (Vianova and BitCtrl) have the technology to run all compatible older installations simultaneously to the new systems. Because of the high number of pixels, the new HD systems are able to display information even for visually impaired passengers, and also support very impressive adverts from premium brands. These can be shown perfectly in full brightness, supporting substantial ancillary revenues.

What’s next for this technology?

Infotainment systems will be connected to our automatic vehicle monitoring system to show dynamic passenger information, including connections in real time. Interesting HD content adds to passengers’ comfort, supporting the move from individual transport by car to mass transport. This will make infotainment increasingly important to MTAs.

Function-rich software

Vianova’s hardware uses BitCtrl’s software package LISA (Live Infotainment System & Advertisement). “LISA works as a platform providing a seamless workflow from content generation to distribution and display,” says Kreidl. The content management system enables the creation of various campaigns incorporating videos, pictures, text and other dynamic objects such as clocks, stops and line graphics, tickers and more. The system supports different sets of information for various groups of vehicles. On every display, the multimedia player provides passenger information and entertainment content controlled by different playlists. The player controls the integration of real-time information through IBIS or the digital I/O interfaces. System diagnostics are always active as well.

“All common graphic elements and picture formats are supported,” adds Kreidl. “The automatic download of content – by wireless communication such as WLAN, GPRS, UMTS (3G) or DAB – is organised by the player. Updates can also be performed via Ethernet or USB. Meanwhile, in terms of security, operators can rest assured that the software elements are write-protected, and all communications are protected against hackers.” Also adding to operators’ peace of mind, Vianova provides full maintenance contracts with its systems, and guarantees the full availability of the system for 10 years.

Crucially, Kreidl believes the system can deliver a tangible improvement to passengers’ journeys. “Excellent visible dynamic passenger information, supplemented by an interesting entertainment programme, provides a controlled and subjectively shortened ride for the passengers – an excellent argument for using mass transport instead of individual car rides,” he says. ☺

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