Clever connections

All is running smoothly on Halle's rail tracks. The new traffic computer for the HAVAG transport company in Halle, Germany, is incorporated into a complete system for all operations – with an interface architecture that is in a class of its own.

Public transport has a long tradition in Halle, which with a population of over 231,000 is the largest city in the German state of Saxony-Anhalt. In 1891, three electric tram lines were opened, forming the first electric tram network in Europe.

Today, Halle's transport company HAVAG operates 15 tram lines in its extensive and ever-growing track network. Many lines, however, do not have a separate track bed. Over 40 percent of the tracks are integrated into the road network, causing problems not just in the city center. At the end of the 1990s, heavier commuter traffic in the city center resulted in frequent traffic jams on the main approach roads and also considerable delays in public transport. Between 1996 and 2000, the average traveling speed sank from 19 km/h to 17.8 km/h.

"It was then clear to us that we needed to speed up our vehicles," says Peter Kolbert, project manager for communications systems at HAVAG. "After thorough investigation we installed an accelerating

Fast-tracking in Halle: intelligent traffic control benefits all transport users and encourages changing to the tram network.

program for traffic lights that is triggered by radio data transmissions and control units from Siemens." This was the first step towards a new strategy, says Kolbert: "At the moment we have already converted 86 traffic lights and have significantly improved the flow of traffic." This is no exaggeration. In the first stage of redevelopment HAVAG managed to reduce travel times by 25 minutes and has been able to cut back on seven trams and thereby reduce running costs by almost €1.5 million per year.

Halle's residents are in support of the developments. In a survey conducted in 2007, more than 80 percent of participants were in favor of prioritizing public transport, even if this meant a disadvantage to private motorized transport. "It was never our ambition to clear the tracks for the tram; rather, we developed a three-stage concept with a priority setting, exploitation of synchronized traffic lights and a fair system for all traffic flows," explains Kolbert. That sounds fair, and everyone stands to gain. For example, at the junction of Dessauer and Landrain Streets, the tram only needs 3 percent of the total green phases per hour, instead of 15, and so pedestrians and road traffic have a lot more "green."

More car drivers are changing to public transport

These steps, however, are of course not enough to reduce the number of traffic jams. "That's why as part of the next stage we developed the Park-and-Ride Information Security System (PaRIS), a subproject of the Mosaique research project that aims to develop a concept for all methods of transport," says Peter Kolbert. "Our goal was to get more individual travelers to change to the tram, namely to get car drivers to take the tram or bus and thereby ease the traffic situation." So in 2006 the park-and-ride facility on Kröllwitzer Street in the northwest of the city was provided with sensors and induction loops. Video cam-

1 All information on changing to public transport at a glance.
2 A strong argument: up to an extra 15 percent of car users change to public transport when traffic jams are displayed.
3 Intelligent control: the tram is faster, yet only needs 3 percent of green phases.
4 The new interface architecture at Halle's transport company ensures best connections.

eras, or traffic eye units (TEUs), monitor road traffic. This traffic information is gathered and evaluated by the Sitraffic Concert traffic management system, which is also linked to regional data pool provided by HAVAG, the city of Halle, the Central German Public Transport Network (MDV) and the Saxony-Anhalt Local Transport Service (NASA). Finally, a traffic information board was installed to inform drivers about the traffic conditions on routes into the city, the number of free parking spaces and the next tram departure times. This provides an ideal opportunity to emphasize the advantages of changing to public transport to avoid traffic – all at a single glance. And it works. The number of occupied park-and-ride spaces is up 50 percent over previous figures. If a traffic jam is announced then an additional 15 percent exchange the car for the tram. "This is a considerable success," Kolbert from HAVAG is pleased to report. "It has been achieved by factual information alone, and not through measures such as traffic restrictions. Car drivers are in fact willing to take advice."

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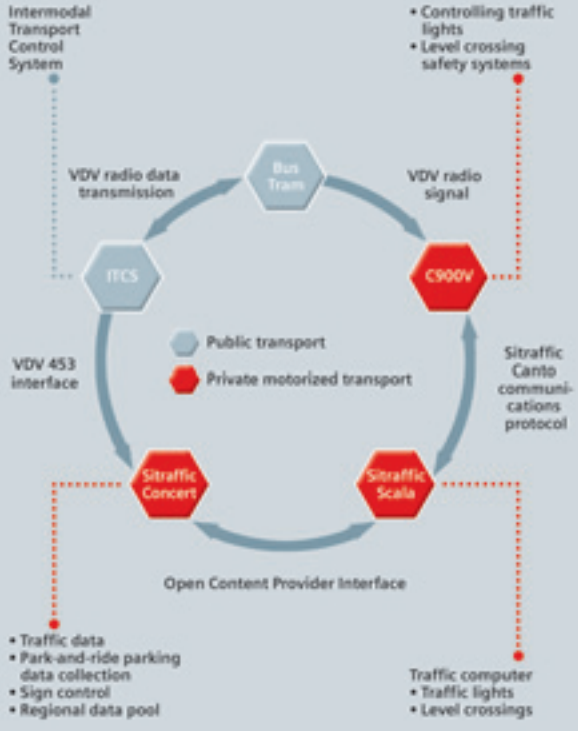

VDV = Association of German Transport Companies

Also in terms of organization everything is running smoothly. Siemens linked the Concert traffic management system directly with the ITCS computerized operations control system via the existing interface of the Association of German Transport Companies (VDV). This makes it possible to provide information on diversions, disruptions and even local events. Kolbert adds: "Our staff at headquarters therefore does not need any additional computer terminals for Concert. From their regular workstations, employees can enter special texts for park-and-ride information boards as well as for information displays at bus and tram stops."

All traffic info under control

HAVAG wanted to go a step even further. "We were looking for a traffic computer that we could gradually connect to all our traffic lights and level crossing safety systems and therefore continue to use the existing infrastructure," Kolbert explains. The solution was found in the Siemens Sitraffic Scala traffic computer system, a scalable traffic-technology platform that allows customized solutions and individual functionality. In Halle, the traffic computer was integrated for the first time into a complete system that incorporates all transport methods and is even responsible for controlling level crossings. These operations are carried out in accordance with German road traffic regulations and are activated by radio data transmission and C900V control units.

As the new traffic computer can easily communicate with the already installed Concert System, Halle now has a unique level of interconnectedness between the various systems. "The tram network communicates via radio data transmission with the C900 control unit, which is in dialogue with the Scala traffic computer via Ethernet," Kolbert explains. "Scala also communicates via the open content provider interface with Sitraffic Concert and therefore has access to data on traffic conditions, park-and-ride and the standard traffic information from the regional data pool. Our operations control system then communicates directly with Concert and keeps in contact with buses and trains via radio data transmission." Where necessary, the data on the city's systems can also be processed. Peter Kolbert is pleased to announce that HAVAG "is the first traffic company with interface architecture that makes it possible to get maximum use out of all available data." □