Transport companies are particularly important in a metropolis such as Cologne. Thousands of residents and commuters are dependent on smooth running of services and adherence to timetables. At the same time, a cost-effective operation must be ensured. Kölner Verkehrs-Betriebe AG tackles these challenges through the large commitment of its employees and the use of high-quality technology. To carry out servicing and repairs on rail vehicles and to perform troubleshooting, the transport company therefore uses robust Panasonic TOUGHBOOK notebooks.
TOUGHBOOK IN USE AT KÖLNER VERKEHRS-BETRIEBE AG

Kölner Verkehrs-Betriebe: Moving people

Kölner Verkehrs-Betriebe AG (KVB) is one of the largest public transport companies in Germany. With its fleet of light rail vehicles and buses it provides a powerful offering of urban and regional transportation. The local public transport product comprises more than just passenger transportation that passengers experience on-site, however. At the rail yards, workshops, points of sale, and administration offices, employees ensure that the vehicles of KVB are ready for passengers day in, day out.

The buses and trains of Kölner Verkehrs-Betriebe transport more than 650,000 people in Cologne every day. In 2013, KVB brought 277 million passengers to their destination. KVB copes with these passenger numbers with 300 light rail vehicles and over 300 buses. 290 staff are employed at the light rail yards in Merheim, West, and Wesseling as well as at the main workshop in Weidenpesch. They ensure that the light rail vehicles run reliably and that this complex system of 12 light rail lines is operating.

A light rail vehicle must be serviced every 12,500 km (approx. 7,800 miles). Therefore, new mobile computing solutions were sought to carry out the servicing and repairs on its light rail vehicles and to perform troubleshooting at the main workshop and in the rail yards. The standard notebooks used previously were prone to errors in the rough conditions of the workshops and when used outside. The existing solution therefore needed to be replaced with robust, weather-resistant notebooks with a serial interface and long battery life. The TOUGHBOOK models CF-31 and CF-19 from Panasonic quickly caught the attention of KVB.

Reliable devices and flexible connection options

Up to then, KVB had been using standard notebooks that were insufficient to meet the needs of everyday work in the workshops and any special requirements. “The notebooks from Panasonic present a better solution here. The longer battery life and the robustness of the devices are particular highlights”, says Peter Bosshammer, Vehicle Technology division at KVB. “The TOUGHBOOKs are used in the workshop area and in the vehicles. This is where they are exposed to knocks, vibrations, dust, and moisture.” The previously used standard notebooks without special robust properties were unable to withstand the difficult challenges. There were often breakdowns, meaning that additional reserve devices had to be purchased and kept in store. Due to the short service life of the standard notebooks, the need to keep reinstalling and the time-consuming configuration led to considerable additional expenditure. Peter Bosshammer commented: “We use various company-specific diagnostic software for the vehicle controls, air-conditioning systems, brake controls, etc. Since these are sometimes operated in DOS mode, installation is more time-consuming. Due to the short service life of the standard laptops, when there was a replacement the specific software always had to be installed and adapted to the device. Overall, this was a very cost-intensive process.”

Another reason for choosing the devices from Panasonic was the numerous connection and configuration options. Technicians are thereby able to access the electronic drive-brake control via a serial interface. The history and error log can be read out here. It is also possible to set parameters and install software. “For our applications, we need serial interfaces that are 100% compatible with DOS. Current standard notebooks have either no such interfaces or only have connections that, both in terms of features and quality, are inferior”, explains Peter Bosshammer. “The use of the USB interface with adapter was anything but smooth. Any success was mostly by chance.”

Other scenarios in which they are used include the measurement of braking distance during travel using an externally mounted measuring device which is connected to the TOUGHBOOK as well as settings for the door control. When doing so, standards and statutory regulations, as well as the requirements of the Association of German Transport Companies (VDV) must be fulfilled. A TOUGHBOOK with vehicle mount is fitted in the driver’s cab of the KVB service rail car, meaning it is available to service employees for their assignments.

The new Panasonic devices are also being used for the modernization work being carried out on the 30-year-old DÜWAG light rail vehicles. Employees created extensive checklists to ensure compliance with various requirements of the Tram Construction and Operation Ordinance (BOSrubi) and the Railway Construction and Operations Act (EBO). These checklists are divided out within a team and processed with electronic support so that the costs for repairs and servicing can be assigned directly to the particular light rail vehicle.

Satisfied users and more efficient work

After deciding on the Panasonic TOUGHBOOK, two devices were purchased for a test phase and put through their paces in the daily workshop operations. After this positive test phase, KVB decided to replace existing devices throughout the workshop area with the robust notebooks from Panasonic.

This significantly reduced the high level of breakdowns. Currently, the notebooks from Panasonic have already been in use considerably longer on average than the previous devices. “Employees can now focus on upcoming work instead of having to get the notebooks up and running first”, says Peter Bosshammer. “Furthermore, system stability is also significantly better.”

The users’ conclusion is also positive. “In addition to the reliability of the devices and the display brightness, what I really must commend is the long battery life”, says Rolf Neumann, a foreman at the Merheim rail yard. Following the positive experiences, there are already plans to purchase new models. Therefore, robust TOUGHPAD tablet PCs from Panasonic are to be used for processing the checklists distributed among the team for the servicing and modernization work on the light rail vehicles.