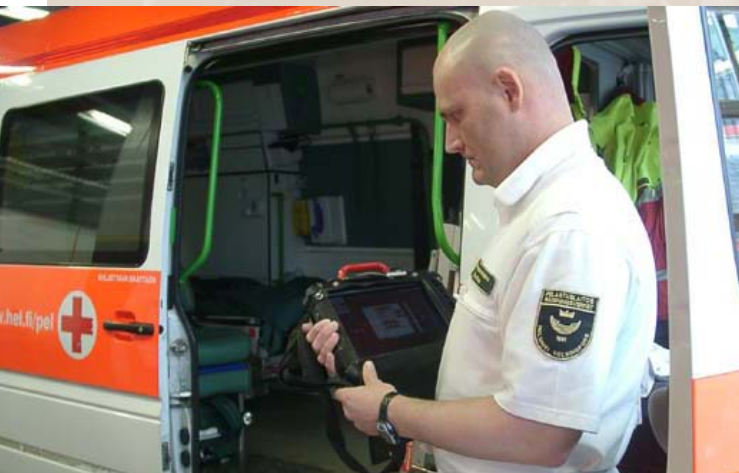


Helsinki City Rescue Department Goes Electric: The rescue units use Xplore's Tablet PCs to record patient information

The Helsinki City Rescue Department employs approximately 600 persons, 450 of whom are dedicated for operative functions. The rescue stations located around the city are responsible for daily fire, rescue and medical stand-by duties. Once the emergency call center receives a rescue request, the appropriate rescue unit is dispatched to the location.

Recently, a number of units of the Helsinki City Rescue Department in emergency patient care and medial services deployed a new electric system, including tablet PCs. These units are equipped with Xplore's iX104C3 Tablet PCs with a keyboard and printer. Additionally the data and measurements from a defibrillator are transferred in real-time into the Xplore computer via Bluetooth connection. Paramedics are able to use the system in emergency vehicles with wireless connection e.g. to fill in patient care documents.



Depending on the urgency of the situation, paramedics complete the electric patient care document on the Xplore Tablet at the accident site, during emergency transport or at hospital. The electric patient care document collects detailed information on the patient, the injury and the incident itself for hospital reference. The system also creates an invoice for the Social Insurance Institution, which partially covers the patient's' transportation costs. Annually the Helsinki City Rescue Department produces over 41,000 patient care documents. Prior to the new electric system, the documents were paper forms. Additionally, numerous other patient care instruction folders and binders are used by Helsinki's emergency services.

Binders with paper documents were cumbersome to use in emergency vehicles and keeping them up-to-date was challenging. To improve quality and achieve operational efficiency, the Rescue Department has transferred the patient care instructions into electronic format. The instructions are now available in emergency vehicles via the new system on the Xplore Tablets.

WM-Data Oy, the developer of Merlot Medi software package, was selected as the solution provider for the complete system including software and hardware. The software solution includes a number of icons and pull-down menus easy to use with touch screen on the tablet so documentation is as standardized as possible. In addition to desktop use, the software was designed to be used in emergency vehicles and hence the selected computers had to be suitable for vehicle use. The tablets needed to be easy to remove from the car for a use outside the vehicle at the emergency site. Also the display needs to be large enough so that documents are legible – even with several pages in length. Designed with paramedics in mind, the Xplore Tablet PC form factor with a touch screen and detachable keyboard is ideal. Wireless data transfer capabilities are also vital. Once the emergency call center receives a call, the details of the incident are transferred wirelessly to the Xplore Tablet PCs.

"Proper sealing and overall durability of the tablet, mobility, ability to clean the computer properly against contamination and the capability to swap the battery without switching off the tablet", says Kari Porthan, Head of Emergency Medical Unit at Helsinki City Rescue Department about the Xplore rugged iX104C3 Tablet PC. There were numerous criteria involved in the choice of this tablet for Helsinki's emergency operations. "Also compatibility with the software, such as using the tablet with touch screen, was of course a primary requirement. Additionally the local distributor of the tablet, Axel Group, developed a handle for us, which is great when undocking or docking the computer back to the vehicle docking station for charging. There was no off-the-shell solution suitable to our vehicles, but for example the mounting of the tablets was planned together with the specialists from Axel Group", Porthan continues.

The patient care module of the system includes ready-made templates for various situations e.g. for a patient with chest pain, the system includes a separate template and appropriate questions for chest pain situations. Additionally, based on specific data input, it alerts the paramedic to consult a doctor when necessary. The answers to the template questions form a patient care document, which is provided to the hospital. It is also saved in the system for statistical and reporting purposes. In about 38% of the cases, the patient is not transferred to hospital at all. In such cases the document is given directly for the patient. The objective is to process the patient care information electronically to ensure consistent quality of the data and easy access to the information for the medical personnel irrespective of location.



The Helsinki Rescue Department's new system allows personnel to send the document wirelessly direct from the Xplore Tablet. However, some hospital systems are not yet capable of receiving it in that format. Therefore the emergency vehicles are equipped with printers, so that the patient care document can be printed and distributed in paper format. The document can also be printed directly from the emergency vehicles to the hospital printer.

The paramedics at the Rescue Department also use the Merlot Medi solution for doctor consulting. The ambulance physicians on 24h duty document all information concerning prescriptions to the system. Various type of research is also performed in at the Rescue Department. This research used to be very time-consuming because the data was collected from thousands of patient care documents in paper format. With the reporting and statistic module of the Merlot, it is now much faster to run queries and search electronic information on tablet PCs.

Moreover, the system includes a control module, which allows the doctors and supervisors to follow the incidents in the city. Personnel are able to view all the rescue tasks and the locations of each rescue unit in real time. The solution also includes a separate module for major incidents. The system allows patients to be triaged into categories prioritizing the ones with life-threatening injuries and centrally direct patient streams to different hospitals. All the personnel using the solution – on the Xplore Tablet PC at emergency rescue units, at hospitals or rescue stations - have access to same up-to-date information.

Various parties have been involved in the project and the system is being constantly further developed. New titles have been added to the pull-down menus based on the user feedback, so that completing the patient care document would be user-friendly. Moving away from paper based system and deploying a new solution is always challenging. However, the great advantage of the new system is the numerous quality assurance benefits it brings. Reporting and statistic capabilities have considerably improved data-mining. The quality of patient information documents has also improved significantly vs. paper documents, which had very limited space for the patient information, and the management of the rescue service units has become more efficient.