

Everything at the touch of a button for fire fighters on the Xplore Tablet PC

In Tilburg, Netherlands a fire engine carries approximately three hundred accessibility maps needed to find hydrants and deployment sites for high-risk locations. Add to this highway maps and street guides. The fire brigade already has some digital materials and doesn't want to let them go to waste. The next step in the digitization of the fire brigade is open GIS-standards.

A typical fire engine is fitted with extinguishing equipment, axes, wrecking tools and ladders. Since the average driver has not memorized every possible address in his ever-expanding operational area, (the result of merging brigades), there are also maps on board. There can be up to three hundred maps stored in a large bin. These maps are not just for finding your way, but also for detailing accessibility and special features of many structures, industrial estates and other properties. Digitizing this mountain of paper could be an enormous help to the process of maintaining up to date and accurate maps.

Approach! is a fire-fighting application used on touch screen tablet PCs. Xplore's Tablet PCs are rugged mobile computers ideal for fire safety applications. No mouse or keyboard is needed to work with Xplore tablets and the form factor is convenient for fire safety use. The fire department has tested the tablets for use with fire service safety gloves. When the control centre reports the location of a fire, its coordinates are fed automatically to the onboard GPS navigation equipment and to *Approach!*. The location comes up on the screen and, if it is a high-risk location, an accessibility map will be displayed on the tablet PC first. In the municipality of Tilburg, road navigation images appear on a second screen positioned for the driver.

There is a GPS antenna/repeater on the roof of their station, which maintains a permanent fix on a fire engine's position. The difference between this GPS fix and a typical GPS navigation system is that normally you have to drive some distance before the system locks onto your actual position. The fire brigade does not have this extra time. A real problem is the question of the first turn out of the fire station: do you turn left or right once outside the gate? The first critical minutes have already been lost if the wrong decision is made in haste.

Once rolling, the driver deals with routing while the chief officer of a digitized vehicle consults his maps using a GIS-type application. *"In a GIS environment you can work with layers; it is a real advantage for the fire brigade to have both fire hydrants and hectometre markers on the same map. This in itself is an improvement,"* said Bart van Heijningen, President of Atsence and supplier of *Approach!*, the software application for fire service. Van Heijningen emphasizes that delivery of this application also includes consulting and an inventory of existing resources. *"This is what makes us different from some imported foreign technology. We know where we have to go to acquire particular data and sub-surface items and who to meet with. You always try, of course, as far as possible, to get these data from the source. In*



Tilburg, for example, the local water board is in charge of fire hydrants and the council is responsible for mapping all infrastructures. You work directly with these organizations as much as you can.” In dealing with fire brigades, Van Heijningen has seen clearly how the much-feared “islands of automation” came into being over past years. “The Dutch fire brigade has always been an independent and very local organization. Each brigade operates largely autonomously and has always operated that way. So each region has a different way of doing things. Lately there have been more regional mergers, but the acquisition of software has long been made in much the same way they selected a new model of fire engine.”



“The greatest fear among the fire brigades at present is that the introduction of a new system will force them to scrap their current systems, file formats, and all investments they have made and, at the same time, that they will miss the boat for national standardization if they don’t modernize,” said Van Heijningen. “Make no mistake: at the brigade level a great deal of effort has usually been put into making accessibility maps, but the problem is that each brigade is doing it in a different way. That is why it is critical that we first conduct an inventory of data. We will ask: what valuable data have you got in-house and how is it managed? There is still too much discussion about different applications, but the discussion should of course

be about setting standards. The challenge is to get a standardized set of data out of all of these different formats. Ultimately, everyone will have to conform to a single standard, OGC compliancy all round.” Bespoke IT systems are typical in fire brigade automation. One brigade has stored its hazardous materials data in a particular format and wants to be able to view it on the tablet PC. Van Heijningen continued: “Then we just add on another button and the data is available via the touch screen on the tablet PC. As soon as people see what is possible they find new requirements.” This is also how a link was created with the crash recovery system, widely built in to fire service systems. Atsence works out with the brigade what maps will be included in *Approach!*, which is a modular system. “Often they have a good idea of what they want; after all these are very practical people. A brigade that has just turned its accessibility maps into PDF files will first want to know if these files can be re-used as they are. We can satisfy this type of demand rather quickly, which is why we ask the users to let us know in advance what maps and in what formats they will want to include”, Van Heijningen added.

A municipality will provide updated maps to the fire brigade two or four times each year. When you consider that a fire brigade typically has eight different engines and from five to ten smaller vehicles, each of which carries approximately three hundred maps that makes something like twelve thousand maps each year. The fire brigade will then modify the maps provided by the municipality and then laminate them so they can be handled with wet gloves and withstand rough treatment.

An accessibility map is a ground plan developed especially for the fire brigade that depicts very detailed information about a specific property, the point of access and the place where the driver must deploy the engine. Therefore the display size of the Xplore Tablet PC suits well for viewing such detailed information, while the tablet is still small enough for mobile use and to be mounted to a vehicle. A thematic chart provides information useful for extinguishing different types of fire. A tall building may show the recommendation that it must be approached “under the fire”.

The new system with all the map information at the touch of a button on Xplore Tablet PCs is a real eye-opener for the fire brigade. The tablet enables advanced GIS capability and immediate access to critical data. These fully rugged Tablet PCs can withstand the vibration, excessive humidity and various temperature ranges inside the fire truck. The accurate information at one’s fingertips on tablet PCs enables the fire department to quickly respond to emergencies and further improve their efficiencies.

(Based on article by Remco Takken)