



# Hands on radios

*Consumer mobile phone technology is now also driving advancements in PMR and handsets, writes Ann-Marie Knegt. However, it is now more important than ever to ensure that basic user requirements are not forgotten.*

*TETRA radio not only enables the staff to use the THR880i for basic voice and data communications, but it also provides an interface for different types of applications which are user-specified.*

The new THR880i and the THR880i EX (ATEX version) developed and provided by EADS Secure Networks underline this, because these are the first TETRA handsets that have a Java platform that allows customisation of the handset. Aila Kotilainen, senior marketing manager for EADS (Terminal Sales and Marketing), explains that these terminals are currently the only TETRA products that use the Java platform, a common programming language and application platform which allows development of customer specific applications to the handsets.

"The handset is a basic functional TETRA radio," she explains. "However the Java platform allows the user to add on very specific applications. Any TETRA radio is capable of sending data, but Java makes it possible to develop a bespoke user interface."

Uppsala University Hospital in Sweden purchased THR880i handsets as a part of phase 2 of the national Rakel TETRA system roll-out, Sweden's switchover to one common emergency services network.

Since January 2008, paramedics and ambulances connected to Uppsala University Hospital are equipped with these TETRA handsets, which are used for data transmission as well as voice communications.

The TETRA radio not only enables the staff to use the THR880i for basic voice and data communications, but it also provides an interface for fleet management and dispatch applications. Kotilainen explains that the applications are implemented in the Swedish language as well as being optimised for the ambulance services' specific use.

She believes that the potential to add different applications to the terminal are almost endless. "The interface is very user friendly because it works with tick

boxes on the radio display. It enables the user to follow up on any procedure.

"The applications that Uppsala implemented are just some examples of the functionality that can be added to this radio, so it depends completely on what the user requires. Any force or brigade can adapt the THR880i according to its own needs, as Java is a standard platform all over the world and there are numerous applications providers available internationally."

Equally, new applications and updates can be added to the handset after a certain time of use. The customer can simply buy the new application and have it downloaded onto the radio afterwards. The handset is upgradeable during its whole lifetime, instead of having applications fitted in the factory first.

"The principles of this handset are similar to modern mobile phones," continues Kotilainen. "However security and control are of prime importance to public safety users, and therefore we have implemented strict security procedures when uploading and using applications, such as a built-in firewall facility and several other safety features."

The EADS Secure Networks division used to be part of Nokia, and therefore the user interface is very similar to that of mobile phones. Kotilainen sees this as a huge benefit. "People immediately realise that it works as a mobile phone and they can start working with it without any specific training."

Sepura has not currently implemented JAVA on its radios, but there are plans to consider it in the future. According to Steve Barber, International Market Development Manager for Sepura, the security group within the TETRA Association is reviewing the security of JAVA applications. It has not approved the use of JAVA, on the basis that

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➤ *Aila Kotilainen, Senior Manager, EADS Terminal Sales and Marketing.*



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**Jens Thostrup, VP Sales and Marketing Sepura.**

*The Sepura SRH3500 and SRH3800 feature programmable keys, a choice of screen types and GPS functionality.*

actual certification for JAVA applications is carried out on a trust basis and much stricter control is required within that.

"In effect there is no firewall between TETRA and the JAVA application itself and the security group is worried about viruses and worms infiltrating a public safety network, via a TETRA handset," he explains.

Sepura has many different customers all over the world who have their own applications on TETRA handsets within a public safety environment – including dispatching, resource allocation and location systems. Most of these are based on Short Data Applications (SDA) and these can be generic – for logging on to systems.

"Alternatively, the clients can specify exactly what they want these applications to do. The model was set up by the TETRA supplier and the interfaces work into their software, which means that the application was securely set up from the beginning," comments Barber.

Jens Thostrup, Sepura's VP, Sales and Marketing, adds, "There is hardly anything that you can do with JAVA that you can't do already with SDA or templates, which are already secure."

Sepura has customers internationally and one of its largest TETRA users is the Catalan fire brigade. "Traditionally firefighters tend to choose analogue technology on the fire ground. However, the Catalan Fire Service in Spain is one of the largest users of TETRA in the world today and own several thousand of our handsets," says Thostrup. The Catalan FRS acquired a selection of hand-held terminals – the SRH3500 and the SRH3800 – and they also own Sepura's Gateway product SRG3500.

Thostrup explains that the main driver for Catalonia's requirements was the Gateway system, which enables the firefighters to connect the vehicle radio – with the Gateway functionality – to the TETRA network.

"Hand-held radios operate with one watt RF power, and

for these to be able to be used in network mode, they need to be in reasonable vicinity of a radio base station. In Catalonia, the FRS faces a high number of wildfires in mountainous areas where there is little network coverage. In order to solve this problem, it installed a 10-watt RF powered mobile radio (Gateway) on the fire appliances, which extends its signal to the TETRA network, enabling the hand-helds to connect to it. The hand-helds talk directly with each other and to network users via the Gateway," Thostrup adds.

Barber continues that the SRH series handsets cannot only communicate via the Gateway, but also with one another, which is a great advantage in geographically challenging areas where the signal is compromised, such as in buildings or caves. The DMO repeater is a feature that is unique to Sepura handsets, meaning that if a user is cut off from a certain member of the group he might still be able to communicate with a different member who can receive the transmission. The DMO repeater repeats the conversation between all users in the team, and Barber believes this feature is just as applicable to the police.

"Many of our police customers use this system in overt or covert operations, such as in underground car parks and in buildings, and in the same way they use the Gateway as well," explains Barber.

One force that recently awarded Sepura with a contract for 3,000 TETRA digital radios was the Metropolitan Police. The contract included a mixture of hand-held and body worn solutions with a range of specialist accessories.

The covert terminal's functions are exactly the same as the hand-held version, although it is slightly smaller and thinner and does not feature a display or buttons. According to Barber it resembles a small black box with an antenna and cables coming out of it. The accessories that belong to the covert radio can be used for the overt products as well, and Barber sees this as being a competitive advantage, demonstrating a flexible solution with a low cost of ownership.

Thostrup places much importance on choosing the right accessories with the terminal. "The basic terminal can be the same for any emergency service, but it is the accessories that tailor the solution. Requirements differ greatly between emergency services. Some are the same, but most of them are not." For this specific reason, Sepura delivers a large range of different accessories with its products in order to meet the different market requirements.

Barber thinks that having the right accessories with the radio can also overcome problems such as overbearing fire ground noise. "Whether you are wearing breathing apparatus or not, there are solutions available that sit within the ear and block out any ambient noise. Equally there are different types of microphones available, some of which are built into the breathing apparatus."

Sepura views itself as a specialist solution provider that offers high-quality handsets in conjunction with a bespoke range of accessories tailored towards specific user requirements. Thostrup concludes by saying that Sepura organises comprehensive workshops in which people can try out the radios in combination with a whole range of accessories, thus choosing the solution that best meets their requirements.

