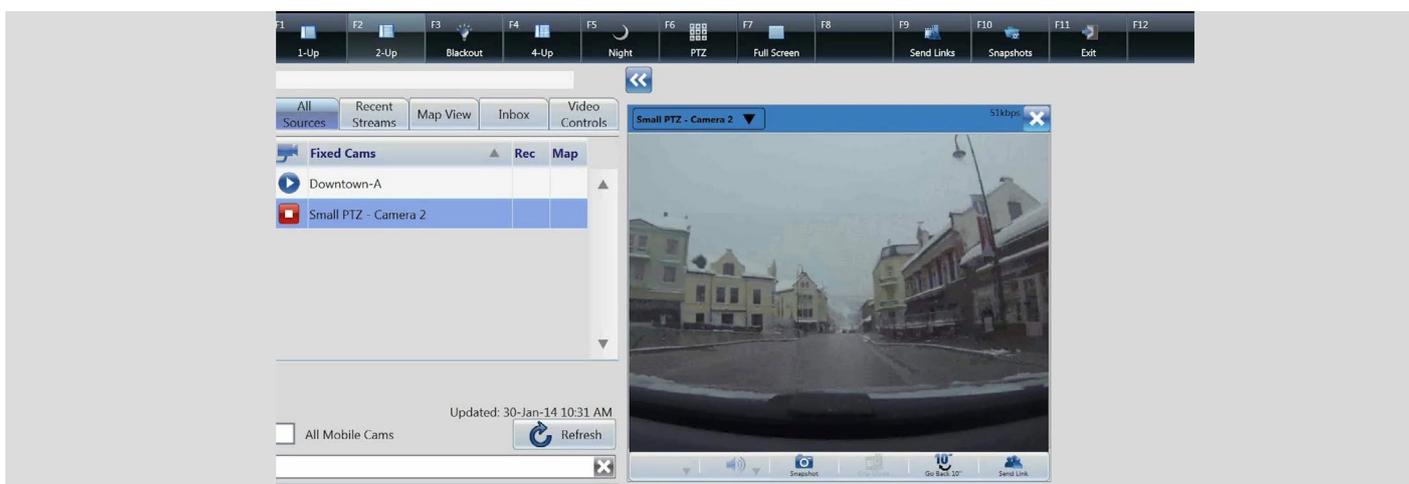




VIDEO OVER TEDS

DEPLOYING LIVE VIDEO USING TETRA ENHANCED DATA SERVICES (TEDS) ON NORWAY'S PUBLIC SAFETY NETWORK



THE DIRECTORATE FOR EMERGENCY COMMUNICATION (DNK)

Norway's Directorate for Emergency Communication (DNK) is partnering with Motorola Solutions to build the 'Nødnett' nationwide public safety voice and data communications network. The secure, mission critical network is providing reliable communications for the police, fire departments and paramedics. It will also be used by other public agencies including search and rescue, border control and civil defence teams.

DNK has seen a sharp rise in demand for data services. And with the goal of providing mission critical teams with the secure, dedicated and continuous data services they need, it has implemented TEDS on its network. Initially being tested in Notodden, Eastern Norway, ahead of a broader roll-out of high-speed data services using TEDS, the network is successfully enabling the end-to-end transfer of video, image and other data files at speeds in excess of 90Kbps and with multiple parallel transmissions. With TEDS able to provide the secure and reliable data services that the emergency services require, public safety teams will be able to work more effectively with enhanced situational awareness and improved intelligence to better safeguard both themselves and the public.

CUSTOMER PROFILE

Organisation:
The Directorate for Emergency Communication (DNK)

Location:
Norway

Industry:
Public Safety

Motorola Solutions Products:

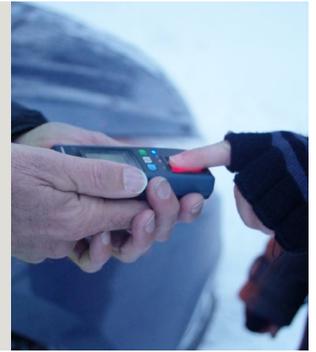
- 2,100 Dimetra IP 8.x base stations
- Around one third of the base stations are TETRA Enhanced Data Services (TEDS) ready

Applications:

Using TETRA Enhanced Data Services (TEDS), concurrent user data streams and end-to-end data rates in excess of 90Kbps in a channel bandwidth of 50 kHz are being achieved. These speeds support a wide range of mission-critical data applications including: image and video streaming, vehicle tracking, remote access to databases, number plate checks and fingerprint scanning.

‘Although voice communications are still the most important service for our public safety users, we are seeing more demand for data applications – for instance to send videos and images, status messages and reports to and from accident scenes. We are deploying TEDS on our Dimetra IP network and it is supporting all of the services our users require, including video streaming, picture messaging, database look-ups, fingerprint scanning and Automatic Vehicle Location (AVL). By using TEDS over TETRA we can offer these services with the exceptional reliability that teams under pressure require so they can make more informed decisions and better co-ordinate emergencies to better protect themselves and the public.’

Dagfinn Sjøvik, Nødnett Project Director, DNK



CHALLENGE

DNK's responsibility is to provide Norway's public safety agencies with a secure and reliable mission critical communications network. With users requesting more data services, DNK set out to increase data speeds and improve capacity on its TETRA network to support a broad range of data applications. It also wanted to deliver these applications with the assurance of continuous, private and secure communications that are an essential requirement for public safety teams working under pressure in demanding environments.

SOLUTION

DNK is running a test project in Notodden, Eastern Norway, to analyse the capabilities of TEDS.

With around one third of the 2,100 base stations in the Nødnett network 'TEDS ready', the test network was created through a simple software upgrade.

Live video streaming was the first data application to be tested, with videos from emergency vehicles and incidents being sent into and out of control rooms. Other public safety applications that have been successfully showcased include vehicle licence database checks, remote access to databases and mobile fingerprint scanning.

The pilot network is successfully transmitting video in each direction between subscriber and base station. Data transmission without packet loss has also been demonstrated during handover between TEDS sites and between TEDS and TETRA Multi-Slot Packet Data (MSPD) sites. It was important to test both, to ensure that users outside the TEDS coverage area would also still be able to rely on robust data services based on TETRA MSPD. In the TEDS system, end-to-end transfer of video and other data applications tested has been achieved at 90Kbps over 64 QAM modulation, thanks to the spectrum efficiency of TEDS operating in a 50 kHz channel. The network is also efficiently handling multiple parallel data transmissions within the same base station coverage area.

DNK is working in conjunction with its users to design and develop bespoke applications based on individual agencies' needs. It is also creating a detailed approval process for applications before they can be deployed, to optimise bandwidth and to ensure they will perform well alongside other applications on the network.

BENEFITS

The trials have proved that TEDS can support all the data services that users require in a live network with the resilience and security that's critical for public safety agencies. As TEDS can run on the existing Nødnett network with a simple software upgrade, CAPEX and OPEX are minimal and operating risks associated with multiple networks are avoided. And with TEDS being slotted into the available space within the existing Nødnett TETRA frequency band, no new spectrum is required.

The additional data services – including video, images, reports and status messaging – will help users better anticipate the situations they're about to face while making more informed and better decisions. Ultimately, this improved foresight and insight will also help teams better protect themselves and the public. Critically, too, teams facing the most demanding of environments – from a paramedic on the way to a crash site, to a police officer stopping a suspect car, to a firefighter entering a building – can be sure that the TEDS services will work whenever they need them.

Benefits:

- **Improved safety:** Reliable data services over the dedicated public safety network help teams better protect themselves and the public
- **Better incident response:** Integrated and secure voice and video services enhance situational awareness with live video streaming to and from control rooms
- **Extremely secure:** TEDS shares the same government-approved high-strength security as TETRA
- **Reduced CAPEX and rapid deployment:** With Nødnett's base stations 'TEDS ready' and the shared TETRA network management infrastructure, only a simple software upgrade is required
- **Reduced OPEX:** All voice and data services can be carried on the same TETRA network
- **Increased productivity:** Public safety users can file paperwork on the go and remotely access a range of apps

For more information on how to improve safety and situation awareness with TEDS data, please visit us on the web at www.motorolasolutions.com/teds or access our global contact directory at www.motorolasolutions.com/contactus