



Goodmill Case Study
Broadband Data for Police Vehicles

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BROADBAND DATA FOR POLICE VEHICLES*

Police organisations around the world have recognised a critical need for fast, secure broadband data applications. Utilising a secure and reliable broadband service increases efficiency and security. It saves money, time and lives. The ultimate solution is to have the same application suite used in the office available to vehicle based officers. When implemented fully, broadband data capabilities enable an 'office on wheels' approach that is well appreciated by the officers themselves as well as their customers.

This case study illustrates the setup that allows the Police to truly enter the 21st century in mobile connectivity.

* The material collected for this case study is sourced from Goodmill contacts in general and is publicly available information. Goodmill provides equipment for Finnish authorities. All information regarding the following applications may or may not be used by these authorities.

POLICE DATA COMMUNICATION NEEDS

For many years, Police organisations around the world have been implementing land mobile radio systems (LMR) to improve the communication capabilities of their field operations. Some countries have been the forerunners and today boast digital networks with excellent coverage throughout the country. Some are adapting to this later, with roll-outs still ongoing in many territories.

These systems, whether TETRA, TETRAPOL or P25 technologies, were designed for specific public safety voice applications and often use technology similar to the first digital mobile networks. Although these systems provided a great improvement over voice-only services, their networks now face great limitations due to very low data capacities. Data traffic carried over digital LMR networks may even jeopardise primary voice services.

The data solution required today must improve the main functionality of voice, while simultaneously offering data communication that meets the capacity and requirements of public safety.

The requirements for current and future Police data connectivity are:

- Coverage
- Availability
- Data integrity
- Session persistence
- Cost efficiency
- Interoperability

POLICE SPECIFIC SERVICES

The required services are the key reason to implement new data connectivity.

Services that are needed today within vehicles include:

- Image and file transfer
- Location based services
- Database queries
- Biometric checks
- Streaming video

Information sharing between jurisdictions is a valuable tool for increasing the efficiency and effectiveness of Police operations. This means collecting and forwarding data between various jurisdiction databases. These important applications are impossible to realise within the technological limitations of current voice and SMS-type data services. It is obvious that broadband capabilities which fit public safety requirements are essential in order to improve efficiency. This creates the next dilemma: What is required from a Police broadband solution technically and how can we afford it?

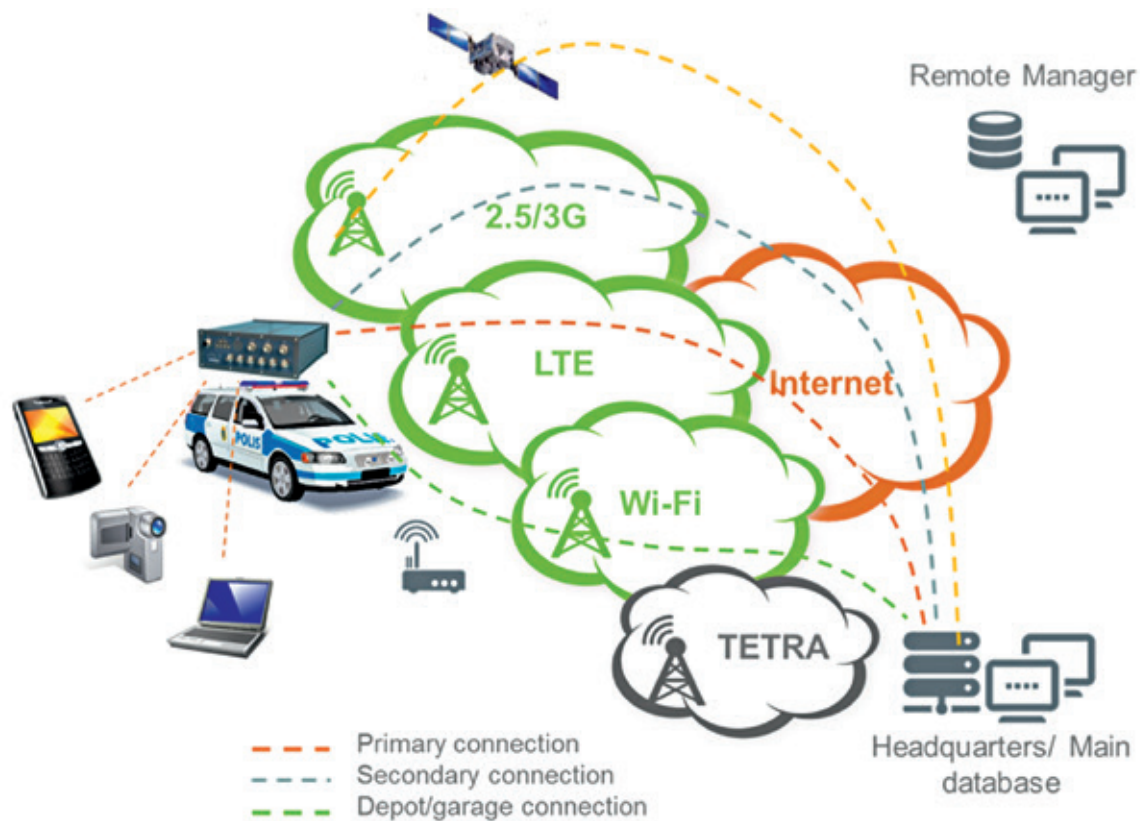
USING HYBRID NETWORKS

Multiple network usage is the key to efficiently use new data applications designed for Police forces. The basic idea is simply to combine two or more relatively well functioning networks into one connection that meets the requirements of field operations.

Multi-channel router technology offers the means to utilise existing parallel commercial and/or private networks. Multi-channel routers need to be populated with several wireless terminals supporting a wide variety of different radio technologies or operators' networks. Routing of mission critical traffic should always be performed using the best connection available.

SERVICES USED

The actual services Police authorities use with the data connection are many and varied. The future seems to offer limitless capabilities. The first step is to enable a very basic functionality, e.g. enabling e-mails with larger data files to be sent without interruption. The increased data capacity also significantly improves situational awareness; e.g. seeing in real time where all other units are and what their status is. With



broadband capabilities, it is possible to drastically expand the area within which units can be surveyed.

Other immediately accessible services include real time blogging, where units can write their observations to specific shared pages on a region by region basis. This service in particular has been extremely well received.

The safe connection eventually enables easier, secure sharing of confidential information. It is possible to call up a suspect's criminal record, any outstanding/previous fines or even vehicle information.

With this approach, all the needed tasks can be performed on the spot, while required documents can be created and printed immediately. This includes a wide variety of tasks:

- Reporting an offense
- On the spot fines
- Sentence claims
- Preliminary investigations
- Crime enquiries
- Technical investigations
- Weapon register checks
- Personal ID checks
- Passport checks

THE SET-UP FOR POLICE

The infrastructure can utilise both dedicated voice traffic applications as well as commercial broadband networks. Dedicated broadband networks may be also used in the future, while multi-channel data connectivity serves as a simple migration path towards that scenario. The router creates connections to the command centre and also

connections to other authorities that are needed. Through the command centre gateway, the encrypted connection can fetch all required information the specific officers are entitled to.

SHARED EXPERIENCE FROM POLICE

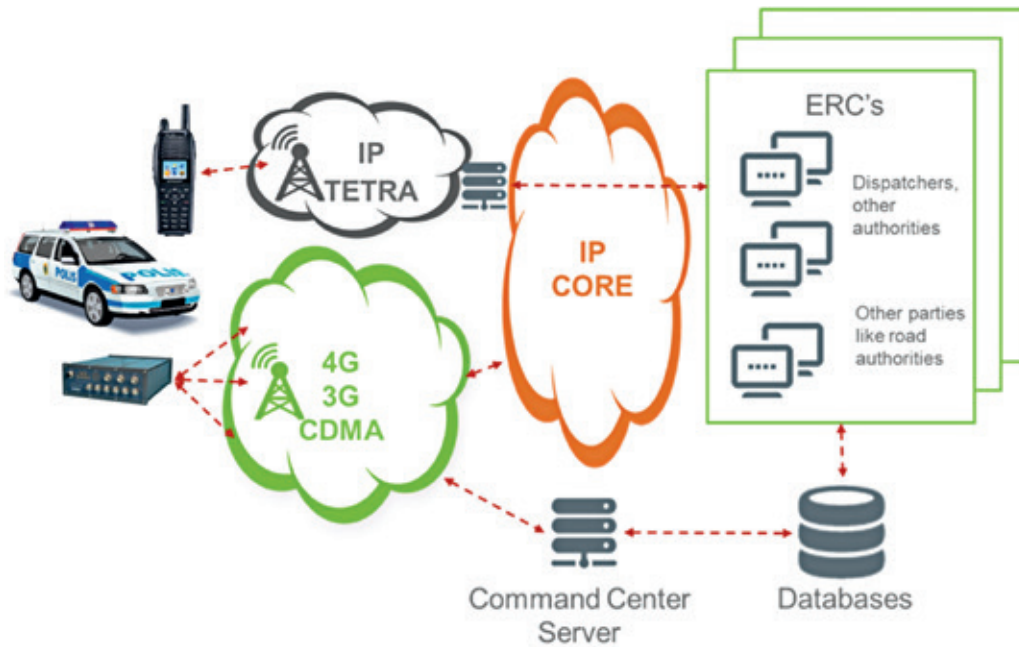
Police officers in general have been extremely satisfied with multiband access systems. Multiband Routers have changed and continue to change field operations and management. This technology has been proven to save time, resources, money and lives.

Thanks to this solution, Officers are able to spend longer 'in the field' and operate with greater efficiency. They can access the same databases as in Police stations and create reports without returning to the station. Because everyone has the same picture of the situation, users claim that co-operation has been elevated to an entirely new level. Information is more transparent thanks to task handling, shared blogs and the collection of statistics.

Co-operation between different authorities has also been improved. The reliability of data transmission and sharing of critical information has and continues to improve significantly. Misunderstandings are reduced because different patrols can now locate each other from a shared map resource. This has led to gains in the command and control chain, with field management proving more efficient thanks to better allocation of resources.

Further to this, everyone who is part of the process benefits from improved legal protection, as information is now automatically updated to databases. Pre-planning and crime prevention has become more efficient. Even informing the public, press and other media has improved.

¹Source: Aamulehti, Finland



New operative models are developed as experience with the systems grows, while users further recognise the capabilities of the system to handle more critical data traffic than previously assumed.

Police organisations have stated that enthusiasm for changing traditional working methods enables them to utilise the TETRA and other IT investments more effectively.

However, it is important to note that the multichannel data access approach is merely an enabler. Multichannel routing or other technology cannot replace Police officers in the field. In the best case, easy to use radio and IT tools may become the backbone of field operations and management!

AN EXAMPLE PROCEDURE: A STOP CHECK

A practical example on how the improved connectivity works is during a stop check.

In this case the officer carries a portable device that is connected via router to the database using a WiFi connection that the vehicle's router provides. The officer reads the barcode from the driver's license with the

device and it shows the vehicle information and any possible outstanding warrant on the driver.

Previously, all information requests were asked for over the phone manually from the duty officer, whereas with the new system, all information can be accessed by the attending officer. Fines, for example, may be issued on the spot since the system retrieves all necessary legal information and automatically calculates fine amounts.

SUMMARY

The combination of using LMR for voice and a combination of broadband data networks for data is the obvious solution for efficient field operations. The solution needs to be flexible enough to use multiple networks, both dedicated and non-dedicated.

Used services are the key drivers for this approach. The more available connections that can be guaranteed the wider and more critically important the applications can be.

Goodmill offers a system that has been used extensively in this type of situation. It has been proven to save time, resources, money and lives.

