Goodmill Case Study

**Ensuring Rescue Vehicle Connectivity:
Jokilaakso Fire & Rescue Department**

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ENSURING RESCUE VEHICLE CONNECTIVITY: JOKILAAKSO FIRE & RESCUE DEPARTMENT CASE STUDY
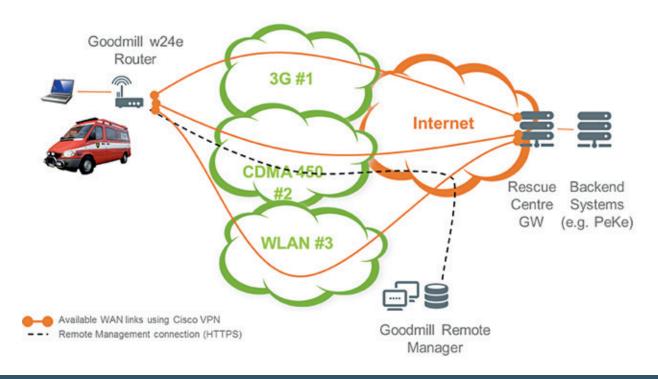
BACKGROUND

Jokilaakso Rescue Department (Jokilaaksojen Pelastuslaitos) is the unit that provides all rescue operation and ambulance services in the north-western Finnish towns of Alavieska, Haapajärvi and Ylivieska, Raahe, Nivala, Pyhäjärvi and Kärsämäki. The target of the operation is to fulfill the demands of local services as cost efficiently and effectively as possible. Due to efficiency targets, Jokilaakso has been the forerunner of implementing modern data services that demand high availability. The natural impediment has been to include the most advanced and modern data connectivity platform in their vehicles.

DATA SERVICES IN VEHICLES

The main use today is in the lead vehicle. The vehicle uses the Tetra network in Finland for voice communication and small band data, and commercial networks via multichannel routing for broadband data. The services in the rescue lead vehicles use Cisco VPN encryption. The router provides the

connection to command center programs (PEKE) and normal office connectivity applications like e-mail. The biggest demand for uninterrupted data comes from command center functionality, since all operational information is transmitted with it.

The system provides electronic two-way communication between dispatch and crews to ensure that critical information is communicated accurately and in real-time. In the PEKE solution the navigator tracks crew status by activity time and location while providing routing guidance. Time stamps are automatically logged and sent so there is an accurate recording of events as they happen. Instant visual notifications alert the crew when new information is sent, keeping them constantly informed and eliminating the possibility of vital information being missed on a phone call. Due to this always online connectivity, the data is always accurate and up to date. This functionality is currently using the Tetra network with SDS-messaging. As the new PEKE services expand to demands of broadband, the system can take core of it automatically.

The most data capacity demanding application used today is the sharing of WiFi access point to other units. The other units that don't have the routers can use the network provided by the lead vehicle to connect more securely to services provided. The data demands currently are such that WAN capacity provided by the lead vehicle is enough. It has been tested that the WiFi access point can cover even 300m radius with installed system.

THE SYSTEM DESCRIPTION

The rescue vehicle has an on-board computer and Tetra phones. The computer is attached to the multi-channel router with a LAN cable or via WLAN access point when taken out of the vehicle. The router has thus two FE ports and a WiFi in the LAN side. The WAN side includes three uplinks that are to a national 3G operator, a national CDMA 450 operator and a WiFi WAN link that is used when the vehicle is in or close to the fire station.

THE BENEFITS OF THE SOLUTION

The implemented system improves the functionality of the lead vehicles tremendously. The solution of using only Tetra has the data capacity limitation of about 5 kbit/s and does not provide for sufficient migration to future services. Also the alternative of using only one 3G modem for the data vas not adequate for the resilience and availability needed. Now the future investments of various enhanced services are not limited by the data access.

The lead vehicle is also an "office on wheels". With older systems, basic tasks such as sending e-mails
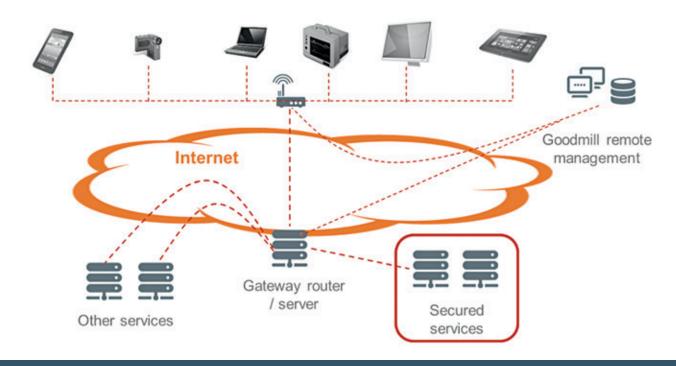
with larger attachments was too slow. Now even citrix based systems that require very high availability data can be used.

Lead vehicle usage as a WiFi hotspot gives data connectivity to other vehicles, too. The multichannel and multi-operator system provides for coverage that is unmet with single 3G network. Especially in the specific region of northwestern Finland, the coverage of any single operator is hardly 100%. Two operators - system has been seen adequate. If needed, the system can be expanded to cover 4 different operators for WAN connectivity

The system is easy to operate. The remote management functionality provides for an overview of connectivity at all times. It is also easier for the operation that the internet connectivity is handled by a single unit. A user on the road connects to the router and may operate as if they were in the station. It is a true "office on wheels" approach.

FUTURE POSSIBILITIES AND EXPANSIONS

The current solution is only a starting point in terms of the potential uses that reliable broadband enables. Future possibilities of the system are numerous – recent discussions have been to include streaming online video from the rescue site, and equipping ambulances with connectivity to various health specific systems like Merlot Medi. The devices that can be connected to the system are limitless. However it is the services, the software used that will remain the key driver. It is not the equipment, but what it is used for that saves lives out in the field.

Development of software and services happens fast – but the integration of various systems in Rescue and in Emergency services can be handled with the same or similar platforms. Even across different services: pre-planning, dispatch, real-time communication, incident command, patient care, after incident reporting and billing – the integrated router solution can maximize operational efficiency and enhance personnel and patient safety.

SUMMARY

Jokilaakso rescue department has successfully implemented broadband access to their lead vehicles. This has enabled them to use existing applications more efficiently and reliably. The implementation of the end to end managed data connectivity enables Jokilaakso to stay at the peak of public safety data usage for years to come.

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Goodmill Systems Ltd. is a Global market leader in critical broadband connectivity for vehicles. Goodmill brings you revolutionary multi-channel router solutions that enable outstanding Broadband connectivity ensuring constant data flow in demanding conditions where connectivity is critical.