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## **New Zealand Fire Service Emergency Services Application**

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## Contents

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<b>Introduction</b>	<b>3</b>
<b>Problem Statement</b>	<b>3</b>
<b>Previous Options</b>	<b>4</b>
<b>C-COM Solution</b>	<b>4</b>
<b>Implementation</b>	<b>7</b>
<b>Summary</b>	<b>9</b>

### **Introduction**

Established in 1997, C-COM Satellite Systems Inc.

### **Problem Statement**

New Zealand Fire was facing the very similar issues that are faced

### **Previous Options**

Emergency Service providers have been limited to radio communications

### **C-COM Solution**

C-COM's Reseller, Baycity Communications Ltd. of Christ Church New Zealand

#### *Internet Connectivity*

Reduced setup time once the vehicle has reached its destination...

#### *Voice Over Internet Protocol*

Completely automatic pointing using the iNetVu 7000/9000 Controller

#### *Video Push*

The iNetVu 1200 Solution allows ARY to provide more units and smaller vehicles which saves money.

### **Implementation**

The iNetVu System was easy to integrate into the chosen vehicle and addressed the required specification.

### **Summary**

Summarize the benefits of the C-COM solution.

## **Introduction**

Established in 1997, C-COM Satellite Systems Inc. is a leader in the development and deployment of mobile satellite-based technology for the delivery of 2-way high-speed communication services into vehicles or other mobile structures as well as a leading service provider of reliable 2-way high-speed broadband satellite based Internet services. C-COM designs, develops and manufactures proprietary mobile self-pointing (iNetVu<sup>®</sup>) antenna systems, intelligent 'One-Button' controllers and accessories that allow the delivery of high-speed communication services into mobile environments, while stationary; virtually anywhere one can drive. The iNetVu<sup>®</sup> antenna system can be activated with the simple push of a button or with the click of mouse. Once activated, it deploys automatically in a few minutes, locks on to the selected satellite and delivers broadband Internet access, VoIP and Video services.

C-COM's product development team utilizes in-house expertise in electronics and software to bring the latest industry features to its iNetVu<sup>®</sup> controller technology. Field feedback and specific requests can be rapidly developed into working customer solutions. This customization makes the iNetVu family of advanced mobile antenna systems the number one choice in thousands of global applications.

There are more than 2,200 iNetVu products deployed across the globe and are considered indispensable to many of our customers who rely on this product to deliver essential connectivity.

iNetVu<sup>®</sup> is a registered trademark of C-COM Satellite Systems Inc.

## **Problem Statement**

New Zealand Fire Services was facing the very similar issues that are faced by a number of Fire services world over. Once the fire apparatus has left the fire station, the methods of communication available becomes very limited. The with lack of communication can translate into very trying times for the Fire officers who have been tasked with dealing with the emergency at hand.

New Zealand Fire Services decided to build a number of new hazardous material / Incident Command vehicles that will be dispersed across the country. Once deployed, these units need to be able to provide advanced communication options to emergency responders.



## **Previous Options**

Emergency service providers have been limited to radio communications as the mainstay for handling all communications from the scene. This meant that one's ability to describe an event or requirement was left to whatever level of comprehension that could be obtained, given the level of background noise and existing chatter on the radio system.

Recent times have seen the use of data over radio which provided some level of written communication but was limited by available radio bandwidth, geographical location and the access to expensive radio add-on equipment.

The advent of cellular technology has provided another recent attempt to provide a level of written communication that would eliminate the dependence on human voice. The issue with this solution is the total dependence on local resources (cellular towers) and the availability of bandwidth during an emergency event (as an emergency event occurs the number of cellular calls in that area increase dramatically and at times can overburden the cellular service to the extent that communications through that cell actually terminate).

## **The C-COM Solution**

C-COM's reseller, Baycity Communications Ltd. of Christ Church, New Zealand, working in conjunction with Gen-i, Baycity's commercial partner fielded the New Zealand Fire Service's request for a satellite based communications solution.

Impressed and well versed with the iNetVu technology, Baycity, as an authorized reseller of the iNetVu<sup>®</sup> suggested that the New Zealand Fire services consider C-COM's easily deployable and cost effective solution for their communication needs.

Based on a number of factors and after a careful analysis,, the iNetVu<sup>®</sup> 980 with the 5000 Controller was chosen. . This solution would provide the required automation, operate within the proposed IT structure and provide the customer with a reliable and cost effect solution that has been field proven in many countries around the world.





### ***Internet Connectivity***

This option may seem somewhat superficial to some, but understanding the true use proves otherwise. The ability to communicate using email not only provides convenience but also a powerful tool in disseminating information to a large number of people. This can save a lot of time and make the task of communicating simpler, while increasing the accuracy of the dissemination of information.

Web browsing is again an activity that may seem superficial, but can be very beneficial to the responders. As more and more information is being made available through the internet, a responder can do many tasks quicker and easier using the World Wide Web. This research can include locating local businesses that can be used as a needed resource (sellers of bottled water, providers of food and if necessary, suppliers of heavy equipment etc.).

Access can also be gained into technical databases that can provide much needed information about specific chemical agents that may be involved, the normal shipping volumes of such agents and the contact information of the transport company that may be required to be involved in the incident.

### ***Voice over Internet Protocol (VoIP)***

Reliance on local resources being available during a large event or a natural calamity cannot be guaranteed. By including the option to provide VoIP services within the vehicle can make the difference between being able to communicate through a telephone and not having a telephone access when communication is essential.

The vehicles have been built to include a number of telephone sets that can be activated over the cellular network or using the VoIP capability provided by the iNetVu<sup>®</sup> solution. The cost of a VoIP connection is much less than that of a cellular solution and it will soon become a preferred choice for communications during emergency events.

### ***Video Push***



Each command vehicle has been equipped with a Pan, Tilt, Zoom video camera mounted on a pneumatic mast that will provide a 'bird's eye view' of an event. This imagery is not only extremely valuable for the Incident Commander at the scene but can also prove to be invaluable to senior management and other emergency personnel not present at the scene.

Using the capacity of the satellite system to deliver high-speed uploads as well as downloads; the New Zealand Fire service will be able to transmit these images to any location of their choice. This means that a senior manager who may be attending a conference on the other side of the world will be able to log in to a secure server and view the events via this live feed from the Incident Command Vehicle.

As the ability to push video is completely dependent on the availability of high-speed access, the iNetVu<sup>®</sup> mobile antenna system is the perfect solution to deliver this option.

## **Implementation**

Since Baycity is the exclusive reseller for IPSTAR in New Zealand and as such has access to all three beams operated by IPSTAR, it was able to offer the customer unbroken coverage from the far northern reaches to the most southerly locations of New Zealand.

In this case, five New Zealand Fire Services command vehicles were equipped with the iNetVu<sup>®</sup> mobile antenna systems as a start. The vehicle shown is a custom built body on a commercial chassis and as such, the exact placement for the iNetVu<sup>®</sup> proved to be a challenge. The truck enclosure had been built to maximize the space available, so the vehicle height was a big concern. After discussions with C-COM, it was decided that the unit could be mounted over the roof of the cab which provided a shorter platform to work from. A rack was built that provided a strong base to hold the platform, yet offered clearance, so the cab would not be harmed by the weight of the antenna.

The iNetVu<sup>®</sup> 980 platform was configured with an LNB and 1 watt BUC compatible with the IPSTAR modem. The platform was then mounted on the rack and cabled into the body. The controller was mounted in a rack on the front wall of the enclosure but the modem was mounted in the middle of the body in a storage unit. This meant that the USB connection between the controller and the modem would be too far to connect (the USB connection is rated at 10 feet maximum distance). This situation was rectified by using an USB amplifier to increase the maximum allowable USB working distance.

The iNetVu® 5000 Controller provides complete, automatic self-acquisition of the target satellite with a single press of the 'Find Satellite' button. This feature means that almost anyone can drive the vehicle and run the satellite system with very little training and with almost no effort at all.





## Summary

The iNetVu® Mobile Satellite Antenna was used to address a number of communication issues that had been identified by the New Zealand Fire Service as critical elements for the success of their vehicle deployment. A plan had been developed with the help of Gen-i Solutions and Baycity Communication Ltd. that:

- addressed the issue of Internet connectivity,
- provided Voice Over Internet Protocol service,
- allowed for the pushing of stream video from an emergency scene,
- provided a 'One Button' solution that non-technical operators could use,
- provided a robust and reliable solution that would deliver communication requirements when needed and where needed, every time.

The iNetVu® Mobile Antenna system selected for this solution has met all of the above requirements and provides the customer with a reliable and cost effective solution. This easy to implement and easy to operate system will assist the New Zealand Fire Services in their efforts to continue to offer world class services to all of the citizens they protect.