



**RedMobile**  
c o n s u l t i n g

Leading You Beyond Technology

# Communication Interoperability for Municipal Public Safety Organizations

A Safer Tomorrow for Citizens

- **Red Mobile Inc.** is a management consulting specializing in wireless and broadband communications. We appreciate the opportunity to offer our unparalleled services to you.
- **Interoperability** is essential to effective emergency management both during a crisis and on a daily basis. Lack of interoperability in communications is an urgent problem affecting municipal Public Safety organizations as well as citizen trust in Public Safety.
- This presentation discusses the problem of Communication Interoperability faced by municipal Public Safety organizations and the way Red Mobile can help address it through our professional services.

I would be happy to discuss this opportunity further.

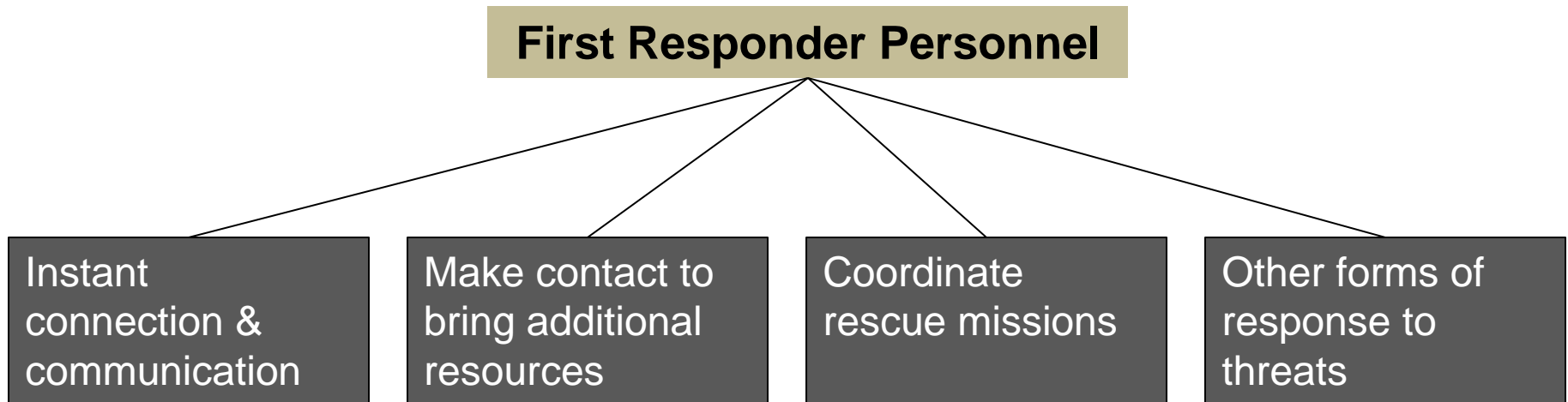
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## Interoperability: Direct Information Exchange



## The Problem

- First responder organizations' radios are incompatible:
  - Operate over different frequencies and use different techniques.

## Consequences

- Uncoordinated responses that hinder the ability to save lives, property, and infrastructure.

## Solutions

- Swapping radios, mutual-aid channels, and gateways bridging two or more radio systems are commonly used to overcome the problem. however, this is not effective

**Red Mobile experts will exclusively assess your situation, and develop a strategy best-suited for dealing with the challenge.**

# 5 Levels of Interoperability

## Which Level Are You at ?

Interoperability Levels	Applications	Methodology
<b>Level 5</b> Standards-Based Shared Systems	Events of any scale Urban and rural locations Any size geographic coverage area Any radio frequency band	All radios built to a common standard  Radios connect via infrastructure or talkaround as appropriate
<b>Level 4</b> Proprietary Shared Systems	Small to large scale events Cross band Limited geographic areas	Radios talk to each other via infrastructure from the same manufacturer  Multiple agencies use the same system
<b>Level 3</b> Shared Channels	Small to moderate scale events involving 2-4 agencies Planned or unplanned events	Users manually switch to assigned frequencies when instructed to do so  Talkgroups identified in advance
<b>Level 2</b> Gateways (Console Patch)	Small to moderate scale events Preplanned interoperable communications	Links established between disparate systems by dispatcher  Unmanned interface box, or mobile apparatus
<b>Level 1</b> Swap Radios	Immediately following a disaster Small events Situations in which no other interoperability strategy is available	Agency personnel physically hand out radios upon arrival at scene

# Challenge of Communications Is Lack of Interoperability



- Traditional focus of interoperability has been on the **radio**.
- First responders from different jurisdictions and departments need the ability to participate in the same talk group to better coordinate their response.

**Ask our experts how you can improve your situational awareness and achieve efficient response coordination.**

# Interoperability Is About More than Just Radio

In devising a strategy, one needs to look at the overall end to end communications and connectivity solution, rather than just a radio solution.



- **Increased Interjurisdictional Cooperation:**
  - Recent developments have increased the urgency of communications interoperability in public safety.
  - Today it is far more likely than ever before that multiple jurisdictions will cooperate in incident response.
- **Proliferation of New Communications Technologies:**
  - Recently introduced communications technologies also exacerbate interoperability problems.
- **Limitations of Existing Interoperability Approaches**

# Developing an Interoperability Plan

The key to success of a project



**Our process-driven approach is based on experience in other municipalities and markets.**

**We offer a unique optimal solution for all your needs and a potential ROI of approximately 6 to 8 times of investment with us.**

# Developing an Interoperability Plan

A key to success of a project



- Identify stakeholders.
- Determine operational & business objectives.
- Baseline the coverage of your current system.
- Baseline the capacity of your current system.
- Estimate your future needs.

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- Consider solutions to maximize the capacity of existing radio freq-s.
- Estimate your future coverage needs within a robust interoperability environment.
- Leverage vehicle repeater systems (VRS), etc. to extend coverage.
- Consider in field-deployable RF sites to be used for localized or disaster event.
- Create multiple fallback levels to mitigate the loss of various system elements.
- Help you control your own mission critical network.

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- Design a system with stringent Grade of Service requirements to maximize operations during critical incidents.
- Deploy a standards-based P25 system for Level 5 interoperability.
- Deploy mission critical sites providing protection from intrusion, lightning strikes, extended periods without power or site access, damaging winds, and flooding.
- Deploy a backhaul network linking RF sites and command Centers
- Obtain 24x7 support services to monitor and troubleshoot RF sites and backhaul equipment.

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- Manage s-m access rights to reduce for critical users.
- Control access at the individual device, talk group, channel and system levels.
- Establish anti-virus authentication systems.

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## Municipalities Wireless and Broadband Project

Experience and knowledge from over 32 Public Safety Radio projects across Canada and the US.

### ***The City of Grand Prairie – 2008***

- *End-to-end planning and implementation of wireless and broadband business model*
- *Wireless and Public Safety Feasibility Study*
- *RFP design and development*
- *Spectrum Acquisition*



### ***District of Squamish - 2008***

- *4.9GHZ Spectrum Acquisition to use during 2010 Olympics*

# Our Unparalleled Experience



## Industry Canada, DFAIT, and The CWTA

- *The Canadian Wireless Industry – Analysis, Positioning and Capabilities (2006-2009)*
- *Sub-Sector Analysis for Mobile Content and Mobile Games*



## Technology Convergence

- **Think Tank 2.0** - *Canadian Mobile Financial Services*
- **Mobile Payment Workshops**

## Wireless Radio and AVL Implementation

- **Telus Corp.** - *Technology & Business Due Diligence for Acquisition of Operator (2006)*
- **Saskatel Mobility** – *Development of SMB and Enterprise Segment Plan for Converged Triple-Play Services*
- **TBaytel Mobility** - *Development of Wireless Data Services Plan, Technical Design, and Partner Eco-System*



## **Our Team**

- Highly experienced Senior Consultants and SMEs (Subject Matter Experts).
- The team leader represents WiMax Forum in Canada.
- National Public Safety Manager , Motorola Canada Ltd. (involved in every major two-way radio project in Canada between 1993 – 2007; contributor of the 5 levels of interoperability roadmap).

## **Our clients**

- World's leading wireless operators.
- Municipalities/governments.
- Private sector players in verticals such as financial services, retail and healthcare.

## **Unique Methodology**

- Disruptive and converging telecom technologies.
- Strategic business problems.

# Our Success Story



## MuniWireless

### Guest Commentary: Grande Prairie, Alberta business case for municipal wireless

May 28, 2008 at 9:05 AM by Brad Emond

Grande Prairie is a Smart City, with a modern and technologically advanced infrastructure to meet the demands of a growing, dynamic community. Partnerships with other municipalities and public and private agencies accelerate the City's progress in the information age and create tremendous economic development opportunities and growth.



Thursday, April 24, 2008

### Industry Canada Gives Approval To City for Public Safety Band

"When we completed our municipal wireless feasibility study, a high demand and requirement for wireless public safety applications was identified," says Brad Emond, Information Technology Services Administrator. "As a result, we submitted an application to Industry Canada for the license to establish and operate the 4.9 GHz radio frequency in Grande Prairie, with the assistance of our consultants, Kazam Technologies."

## DAILY Herald-Tribune Grande Prairie, Alberta

FRIDAY, AUGUST 7, 2009

### Firefighters go high-tech

#### PALOMA MIGONE – Herald-Tribune staff

"From a safety point of view, it gives us a huge amount of information on the able to access what we need. Whether we need more people, or whether th. "And most important, as those bits of information from around our communit automatically update all the information.

Fire Chief Dan Lemieux and chief fire prevention officer Rick Adair



we are  
rials in it.  
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The city's innovative system has been recognized with a nomination for a GTEC Distinction Award. The nomination was submitted by Kazam Technologies from Markham, Ont., which was involved in the project.

# Thank you!

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