


**700 MHZ BROADBAND
FOR MISSION CRITICAL
PUBLIC SAFETY DATA**

PANEL SESSION

PRESENTATION AT THE FOURTH ANNUAL VENDOR OUTREACH FORUM
OCTOBER 19, 2011




Presented by...

**Members of the Tri-Services Special Purpose Committee on
700 MHz Broadband for Mission Critical Public Safety Data
(struck Dec. 2010)**

Superintendent Bill Moore
Halifax Regional Police Service

Division Chief Mike Sullivan
Ottawa Fire Service


Superintendent Pascal Rodier
British Columbia Ambulance Service



Working together to improve public safety interoperability...

Committee Struck to...


- Formulate a broad-based public safety response to the Industry Canada public consultations on the use of the 700 MHz band (closed February 28, 2011)
- Monitor and advise on the issue, inform stakeholders and identify responder spectrum needs and potential opportunities
- Engage with industry, public safety providers and different levels of government to put forward a position that makes sense for Canadian public safety and Canadians in general
- Deliver the written response for the consultation



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Enable Responders to...


- Ensure that the spectrum needs of responders and public safety in general are considered and accounted for
- Enough spectrum to fulfil vision of a robust system of interoperable networks that will benefit urban, suburban and rural responder agencies in Canada
- Alignment with U.S. with a view to a trans-continental vision
- Work with industry to help better define needs and future vision
- Advocate and work with others on a whole-of-government approach



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Why do we care?


- The allocation of 700MHz broadband spectrum **represents a once in a lifetime opportunity**
- If done correctly will enable **mission critical data communications for public safety** for years to come
- Having this ability directly impacts **community and responder safety, innovation and the health of Canada's digital economy**
- We need the right tools to **protect and save lives of Canadians and first responders**
- 700 MHz is the **"sweet spot"**



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Present State of Broadband in Canada

- Different technology in use
- Different systems in use
- Not seamless countrywide
- No Canada-U.S. harmonization
- Thirst for bandwidth increasing exponentially
- Industry Canada Consultation opened consultations on 700 MHz spectrum on November 30, 2010 (closed February 28, 2011) — provided opportunity to state public safety needs
- Brief rebuttal period provided opportunity to restate needs



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Potential Growth Vision

- Border and a few major cities
- Major centres
- Regional solutions
- Major arteries
- Continentally Aligned

THE FUTURE...

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Scenario

Police are called to an Active Shooter situation at a local college. Based on broadband access to the 700 MHz network, they immediately deploy three teams into the school via three different entry points. 3D in-building location and tracking devices (originally spearheaded by the fire community) allow team leaders, local Incident Commander and HQ to be aware of each other's location. They then access the IP based speaker/microphone system in the college, overlay sounds on the building floor plan, and immediately identify victim/suspect location info. Fire and paramedic teams responding have (as authorized) access to the data to begin planning their response.

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EXAMPLE

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INTRODUCTION

Scenario

Firefighters from New Brunswick asked by CIFFC to fly to British Columbia (or California, or Australia) to help fight wildfires – the wireless device (future versions that are hardened & intrinsically safe) immediately connects to the 700 MHz system in BC (or wherever), authenticates them as a public safety user and gives them full BROADBAND access to mission critical data including GIS location tracking, situational awareness info about where the fires are located (based on access to wireless sensors that have been deployed) and full topographical and /or satellite maps.

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EXAMPLE

Key Work Completed for Consultation Response

Report entitled 700MHz Spectrum Requirements for Canadian Public Safety Interoperable Mobile Broadband Data Communications

- Technical assessment of the 700 MHz spectrum requirements conducted by Defence Research and Development Canada Centre for Security Science (DRDC CSS)
- Goal: to determine how much spectrum is required to meet the needs of the public safety for mobile broadband wireless data communications within a 20-year time frame
- The results show that the amount of bandwidth required to satisfy the needs of public safety is greater than 20MHz in the near-to-mid term, and likely to also exceed 20MHz in the long term, despite advances in technology

(Full report on action700.ca)

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CONSULTATION

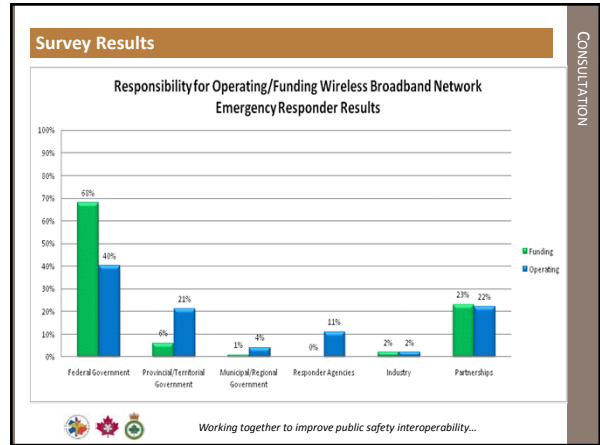
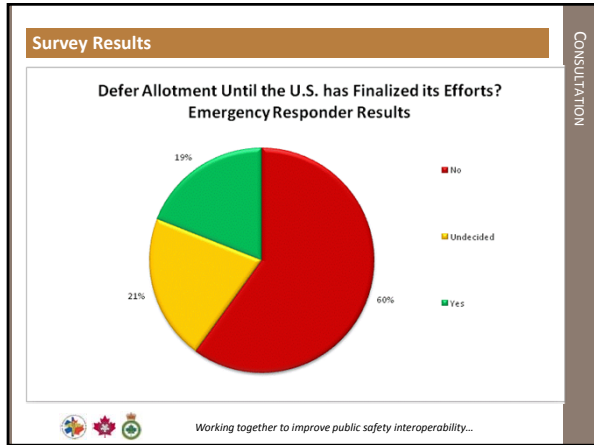
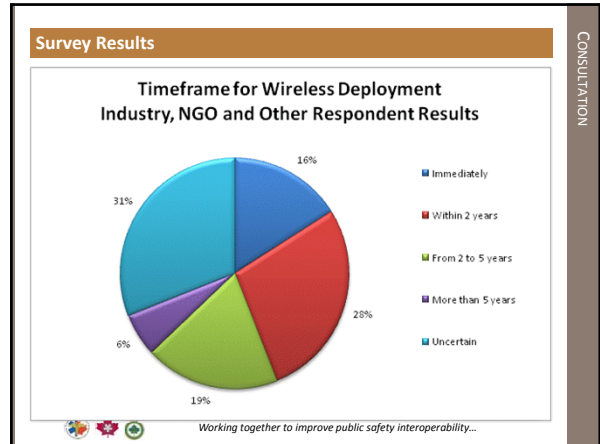
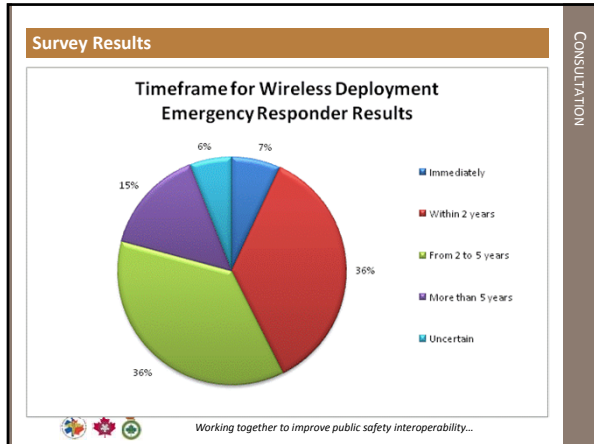
Stakeholder Survey

- Conducted in partnership with CATA, see report entitled *Answering the Call: Survey report of Canadian stakeholders regarding the importance and priority need of dedicated 700 MHz broadband spectrum for a national public safety network*
- Highlights include:
 - 366 individuals responded during January and February, the majority of whom were tri-service emergency responders (fire, police, EMS)
 - Over 80% of all respondents believed that the public safety agencies do not possess sufficient broadband capability

(Full report on action700.ca)

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CONSULTATION



Industry Canada Consultation Response

- As mentioned, the first round of Industry Canada consultations closed Feb. 28 (rebuttal period closed April 6)
- Tri-Services main themes in response:
 - Assign 20 MHz for public safety broadband use
 - Coordinate 700 MHz Canadian public safety broadband spectrum with the U.S.
 - Governance of the 20 MHz of 700 MHz spectrum for public safety for broadband use must reside with public safety stakeholders
 - Current commercial systems will not meet the mission critical requirements of our public safety community

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Letters of support

Over 60 received (and counting), including:

- Letter from Minister Bradley supported by all P/T Ministers
- Labour organizations (CPA, IIFF, PAC, etc.)
- Federation of Canadian Municipalities
- APCO
- Canadian Centre for Emergency Preparedness


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20 MHz of 700 MHz Spectrum

- Re-designate 8 MHz of spectrum (currently assigned to public safety with unspecified use) to broadband use and designate an additional 12 MHz of adjacent spectrum for broadband use.
- Total allocation to public safety of 36 MHz — 20 MHz for broadband and an existing 16 MHz for narrowband/wideband (i.e., voice and low speed data)

Current Outcome	Proposed Allocation	PS Broadband (12 MHz of allocated)	PS NB & WB (8 MHz)	PS Broadband (10 MHz of allocated)	PS NB & WB (6 MHz)

- Dedicate spectrum to public safety to dictate that industry builds wireless broadband networks to needs of public safety (i.e., national protocol and interoperability standards as called for in the *Communications Interoperability Strategy for Canada*)

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TRI-SERVICES POSITION

Coordinate with U.S.

- Coordinate the 700 MHz Canadian public safety broadband spectrum with the FCC band plan, **including the pending designation of the D Block to public safety** (supported by the U.S. President and members of U.S. Congress)
 - Ensures that broadband user devices will function on any public safety network and in either country to provide critical cross-border interoperability functionality
 - Creates a larger commercial market for specialized public safety devices thus establishing scale and ensuring lower costs
 - Affords Canadian information and communications technology (ICT) companies with access to international opportunities in this specialized market

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INTRODUCTION

Scenario


Paramedics are called to the scene of a mass casualty event along the Washington State – British Columbia border. BC Incident Commanders quickly realize that they require assistance from their U.S. counterparts. They begin deploying wireless patient care telemetry devices that connect via the 700 MHz Broadband network. Because the network was built using the same spectrum and standards (LTE), the US responders can immediately get access the information required (as authorized by previous governance and SOP's) to successfully respond to this joint operation.

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EXAMPLE

Spectrum Governance


- Governance of the 20 MHz of 700 MHz spectrum for public safety for broadband use **must reside** with public safety stakeholders
- Must include representation from the Tri-Services Chiefs Associations and CITIG (as outlined in the *Communications Interoperability Strategy for Canada* governance model) through which decisions of national public safety leadership can guide the construction and operation of an interoperable nationwide public safety-grade wireless broadband network
- Tri-Services will be willing and active participants in the three-phase process outlined by Public Safety Canada

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TRI-SERVICES POSITION

As of October 2011...

- Public Safety Canada is well on track to deliver proposed business model by December (as indicated in their submission)
- That proposed business model will be in line with what was described in the PS submission (i.e., shared governance with emphasis on ensuring responders have access to needed amount of spectrum)
- First responder representatives will have the opportunity to review and contribute to the proposed model in the near future
- Additional communication will soon follow

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700 MHz BROADBAND

700 MHz Timeline and Next Steps

BUILDING A SAFE AND RESILIENT CANADA

- 700 MHz spectrum allocation by IC
- Second phase of consultation by IC
- Develop operational requirements & interoperability guidelines
- Consensus for a national business model
- 700 MHz network pilot projects
- Confirmation of Terms of Reference for a Canada-U.S. Communications Interoperability Working Group

Public Safety Canada / Sécurité publique Canada

Governance Business Model

Two Business Models are explored...

National Model

National Authority

- Key policy decisions
- Business decisions
- Licensee of the Spectrum
- Operating procedures
- Interconnection with federal and US agencies
- Interconnection with commercial operators, Internet, other services

Regional Authority

- User management
- Joint network operations with the National Authority

Regional Model

National Authority

- Sets policies on governance
- Technology standards
- Define interoperability conditions
- Interconnection with federal and US agencies

Regional Authority

- User management
- Business decisions
- Interconnection with commercial operators, Internet, other services
- Operating license granted upon satisfying interoperability conditions

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Related Work of Note...

Technical Advisory Notes (TANs)

- Produced by DRDC/CSS
- VoIP-over-LTE, LMR, Mission-Critical Voice (MCV) - **Published**
- US Operational Requirements for 700 MHz mobile broadband - **Published**
- LightSquared and Impact on GPS - **Published**
- Video Quality for First Responders
- Co-hosted mobile broadband services
- Network Disaster Recovery
- QoS, Priority Access, Admission Control
- Comparison of Broadband Network Architectures
- Congestion Management Techniques
- Role of Operational Support Systems to Automate Service Provisioning, Service Management, and to facilitate Interoperability
- Available on www.citig.ca!

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Related Work of Note...

Operational Requirement Work Groups

- CSS to draft four straw men for four work groups
- Each work shop will have various representatives, including one chair and one facilitator
- Held adjunct to CITIG National Workshop on December 7th (afternoon)
- Full details to be posted by the end of this week on www.citig.ca!

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Categories of Operational Requirements

<p>1. Interoperability</p> <ul style="list-style-type: none"> ◦ Interconnectivity, ◦ Priority and QoS * ◦ Congestion management ◦ Applications ◦ Standards 	<p>2. Network Infrastructure</p> <ul style="list-style-type: none"> ◦ Network resiliency and reliability ◦ Service coverage and availability ◦ Performance analysis and applications support ◦ Service restoration
<p>3. Security</p> <ul style="list-style-type: none"> ◦ Admission control ◦ Information and mission assurance ◦ Physical security ◦ Information privacy 	<p>4. Network Management</p> <ul style="list-style-type: none"> ◦ Network operations ◦ Performance management ◦ Service management ◦ Maintenance and sustainability ◦ Processes and procedures

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Tri-Service Committee Current Work

- Work closely with Public Safety Canada and others to ensure the spectrum needs of responders are met
- Continue reaching out to all levels of government, public safety agencies and industry
- Work with Public Safety Canada and SOREM (all Provinces and Territories) on next steps
- Inform key stakeholders

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What can YOU do about it?

- Get informed and put this issue on your organization's radar
- Inform your key decision makers, boards, municipalities, provincial/territorial governments and other governing bodies that spectrum allocations will have a significant impact on public safety in Canada
- Work with tri-services colleagues and others to advocate a strong voice for public safety in advance of spectrum allocations
- Look for and act on mobilization information as it sent by CACP, CAFC, EMSCC and others

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NEXT STEPS

www.action700.ca

- Web site created by the Associations to provide a focal point for communications efforts:

www.action700.ca

(download basic information, including sample support letter, media release, presentations and sign up for e-mail updates)

- Inquiries — send e-mail to:

action700broadband@gmail.com

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CALL TO ACTION!

The 5th Canadian Public Safety Interoperability Workshop: A COTI National Forum

"From Results to Successes!"

10-11 November 4-11, 2011 (Detailed agenda to be published in November)

Location: The Palliser Children's Lodge, Ottawa, ON

Registration Cost: \$450 + GST (includes breakfast, evening meal and guest of choice reception. Receipts among exhibitors reception, 3 breakfasts, 2 lunches and 2 dinners only. Conference materials will only be offered to English)

Key 10th Canada Public Safety Interoperability Workshop (from 2009-2010, the 8th) (hosted by CACP) (hosted by CACP)

MAXIMIZING TECHNOLOGY PARTNERSHIPS IN CHALLENGING ECONOMIC TIMES

CACP Informatics Workshop

November 10, 2011, 9:00 AM - 12:00 PM

Location: Ottawa, ON

Registration Cost: \$100 + GST (includes breakfast and lunch)

Registration Link: www.action700.ca

Register at www.cacp.ca

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DON'T MISS OUT!

Discussion

Questions?

www.action700.ca

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