The Thirteenth Canadian Public Safety Interoperability Workshop

December 1 to 3, 2019 in Toronto, ON

CITIG

@CITIG_Canada & #CITIG13

"We need to talk…"

It's about public safety and ensuring timely, coordinated and effective emergency responses. We need to get the right information to the right people at the right time.   So, what is standing in our way, and how can we fix it?

Join us for Canada's premiere public safety interoperability event from December 1 to 3, 2019 in Toronto. The 13th Canadian Public Safety Interoperability Workshop (CITIG 13) promises to be an interactive, problem-identifying, and problem-solving workshop.

We honour the origins of CITIG and its evolution over the years, and we are taking into account the survey results from CITIG 12, where Governance issues rated highly. While technology continues to play a crucial role within interoperability, this year our focus will expand into the other lanes of the interoperability continuum. Human factors, organizational culture, process, resiliency and more will be on the agenda.

Only at CITIG 13 will you:
- Hear keynote addresses and case studies in interoperability challenges & successes
- Unpack governance issues on several fronts
- Discuss PSBN, NG 9-1-1, public alerting trends, etc.
- Bring your own interoperability challenges to the table & take away solutions
- See an exhibit hall packed with leading suppliers showcasing the latest products and services in the interoperability marketplace that will help you do your job more efficiently and save your agency time and money
- Network and connect with colleagues from around Canada and beyond
- Get access to exclusive events like our networking receptions
- And so much more!

CITIG 13's target audience includes interoperability leaders and practitioners from:
- First responders (police, fire, paramedics)
- Emergency managers – public and private sectors
- Public Safety Answering Point (PSAP) administrators and decision makers
- Other public safety providers (federal, provincial, territorial, municipal, special constables, private security)
- Military and Coast Guard

- Government and critical infrastructure partners
- NGOs and volunteer sectors
- Academic and research institutions
- Industry professionals

Sunday, December 1, 2019

17:00-19:00   **Onsite Registration** *(Metropolitan Foyer)*

Monday, December 2, 2019

07:00   **Onsite Registration** *(Metropolitan Foyer)*

07:00-18:30   **Exhibit Show** *(Metropolitan Centre)*

07:00-08:15   **Continental Breakfast** *(Exhibit Area)*

08:15-17:00   **Plenary Sessions** *(Metropolitan East)*

08:15-08:30

Opening Remarks
Join the presidents of the Canadian Association of Chiefs of Police (CACP), Canadian Association of Fire Chiefs (CAFC) and the Paramedics Chiefs of Canada (PCC) as they welcome delegates to our 13th annual workshop.

Presenters
- Chief Constable Adam Palmer, O.O.M., Vancouver Police Department; President, Canadian Association of Police Chiefs (CACP)
- Fire Chief Ken Block, Edmonton Fire Rescue Service; President, Canadian Association of Fire Chiefs (CAFC)
- Chief Randy Mellow, Chief of Peterborough County/City Paramedics; President, Paramedic Chiefs of Canada (PCC)

Moderators
- Deputy Manager Jeff Brooks, Emergency Medical Services Department, The County of Lambton and Chair, CITIG
- Bryan Singleton, Deputy Fire Chief, Technical Services, Edmonton Fire Rescue Service

SESSION 1
08:30-09:00

TNCO – What's New?

Description
Established in July 2018, the Temporary National Coordination Office (TNCO) is mandated to develop options and recommendations for a Public Safety Broadband Network (PSBN) for first responders and public safety personnel across Canada. Since then, TNCO has been consulting stakeholders and field experts; examining research and literature available to date, as well as pilots and trials; and conducting analyses to inform its recommendations.

Presenters
- Steve Palmer, CACP TNCO Representative
- Denis Pilon, Fire Chief (Ret'd), CAFC TNCO Representative
- Doug Socha, PCC TNCO Representative

Moderators
- Deputy Manager Jeff Brooks, Emergency Medical Services Department, The County of Lambton and Chair, CITIG
- Bryan Singleton, Deputy Fire Chief, Technical Services, Edmonton Fire Rescue Service

SESSION 2
09:00-10:15

Leadership Challenges – Applying a Complexity Lens to Interoperability

Description
While CITIG has had many successes over its lifespan, achieving tangible and sustainable interoperability continues to be a challenge for jurisdictions and organizations. In this intriguing interactive and highly applied session, Professor Holzinger will introduce complexity as a lens for making sense of interoperability. Drawing on the emergent science of complexity, he will suggest that first responder interoperability is inherently complex and that the lens of complexity may just change how we think and see, in order to achieve true interoperability.

Having taught in university degree and executive programs in North America, South America, Asia and Europe, Ingo's research and teaching interests include complexity science and leadership, change processes in organizations, creativity and alternative forms of organizing.

He has worked with companies and organizations such as BMO, Toyota Canada, University Health Network, P&G, Cargill and the Ontario Association of Children's Aid Societies in executive development and on research projects. His work has been published in the Academy of Management Review, the Journal of Business Research, the Journal of Managerial Psychology and Advances in Strategic Management.

Presenter
- Ingo Holzinger, Ph.D., Distinguished Adjunct Professor and Director, Strategy Field Study, Schulich School of Business at York University

Moderator
Bryan Singleton, Deputy Fire Chief, Technical Services, Edmonton Fire Rescue Service

10:15-10:45   Network Break *(Exhibit Area)*

SESSION 2 *(Continued)*
10:45-11:45

Leadership Challenges – Applying a Complexity Lens to Interoperability

SESSION 3
11:45 – 12:00

Bell Mobility – How Mobile Technology is Shaping the Future of Public Safety

Description
In this session you will learn about the now, the coming soon, and the future of wireless technology in the public safety sector. As Canada's leading carrier for first responder networks, Bell is focused on bringing to market new technologies like Mobile Broadband for First Responders to put data-rich applications in the hands of those on the front lines, keeping them and citizens safer. We will also touch on our vision of the future with emerging technologies like NG911, Mission Critical Push-to-Talk, and 5G

Presenter
- Gary Semplonius, Senior Vice President, Business Markets, Bell Mobility

Moderator
Dan Elliott, Communications Systems Manager, Aviation Services, Greater Toronto Airport Authority, Toronto Pearson Airport

12:00 -13:00   Lunch *(Exhibit Area)*

SESSION 4
13:00-14:00

Cybercrime | Threats and Risks to Interoperability – What You Need to Learn

Description

Billions of dollars are spent globally on cybersecurity every year, yet regularly we are hearing of new breaches, each more significant than the previous. This session is crucial not only for emergency responders and public safety practitioners, but also for our critical infrastructure partners. Connectivity, communication, data are all part and parcel of the technology eco-system that supports interoperability, and they are under constant threat in our on-line world. The explosion of digital platforms not only supports interoperability, it also provides a haven for online crime (and espionage). Attacks on 9-1-1 systems are a reality. Ransomware and Denial of Service attacks are disrupting critical infrastructure systems and networks. In this session you will learn about these threats and what your own responsibilities and options are to prepare, protect and respond to cybercrime.

Detective Constable Kenrick Bagnall has been a member of the Toronto Police Service since April of 2006 and currently serves as an investigator in the Computer Cyber Crime (C3) section of Intelligence Services. Prior to joining the Toronto Police Service, Kenrick spent twenty years in the Information Technology industry primarily in the financial services sector, and has held the positions of Senior Network Analyst, Information Technology Manager and Senior Vice President of Information Technology.

Kenrick is also an Associate Professor at George Brown College where he designed and instructs the Cybersecurity Fundamentals and Cyber Incident Response & Recovery courses and also lectures on the University of Toronto Global Professional Master of Laws, Innovation, Law and Technology program. He has been published in Canadian Security Magazine and Cybersecurity in Canada; A Guide to Best Practices, Planning and Management, (LexisNexis). Kenrick's background in Information Technology combined with his law enforcement experience has uniquely positioned him as an investigator, instructor and presenter on technology, information security and cyber investigations.

Presenter
- Detective Constable Kenrick Bagnall, Coordinated Cyber Centre (C3), Intelligence Services, Toronto Police Service

Moderator
Alison Buchanan, Provincial Emergency Operations Centre Officer, Office of the Fire Marshal and Emergency Management

SESSION 5
14:00 -15:00

FirstNet - Status, Challenges and Futures

Description
The First Responder Network in the United States is rapidly expanding. As of August 2019, over 750,000 lines of service and 9,000 public safety agencies are active on FirstNet. Ninety curated and screened apps are on the App Catalog and over 120 devices in the approved devices inventory. Each month several dozen disasters and other incidents occur where FirstNet deployables (cell sites on light trucks) rapidly restore service. And the FirstNet

Authority has a new roadmap to guide spending of $18 billion it will receive from AT&T to invest in the network over the next 23 years. The FirstNet Board is scheduled to approve the first such investments in its September 2019, meeting. This session will update Canada's first responders about the current FirstNet status and future plans to improve the network and its services.

Presenter
- Bill Schrier, Senior Advisor, FirstNet Authority

Moderator
Deputy Manager Jeff Brooks, Emergency Medical Services Department, The County of Lambton and Chair, CITIG

15:00-15:30   Network Break *(Exhibit Area)*

SESSION 6
15:30-17:00

Public Safety Broadband Regional Updates

Description
This session will provide updates on the work that is being done across the country.

Mike Webb and Sol Lancashire will provide an overview of the work that E-Comm, BC Hydro, Powertech Labs, Simon Fraser University and the Province of BC are doing to further the development of PSBN in British Columbia, including the creation of a PSBN testbed and demonstrations of various PSBN use cases. The testbed will simulate the interoperability of PSBN network components built and operated by different entities, including private LTE systems operated by critical infrastructure agencies, deployable assets and fixed infrastructure operated by public safety agencies and commercial network operators. The testbed will be used to demonstrate several public safety use cases, applications and user experience related to situational awareness, secure information exchange and mission critical voice communications.

Bruce Grandy chairs the Research & Development Committee of TNCO responsible for the creation of the basic principles/tenants for a PSBN, working with ISED to produce the consultation document around Band 14, to generate a high level summary of coverage requirements. He works in conjunction with the governance committee and all members of TNCO on the briefing and recommendations document that will be presented to the Minister of Public Safety in early 2020.

Halton-Peel-GTAA - PSBN Innovation Alliance Wide Area Operational Test Bed in Ontario

In Ontario - Peel Region, Halton Region and the Greater Toronto Airport Authority have been working together to establish Canada's largest active PSBN test network. Our common network consists of a functional wide-area test bed across both Peel and Halton regions with a Band

Class 14 RAN and 4G Core network covering a population of over 2 Million Canadians within our communities.

Our panelists will provide an overview of our network, a snapshot of some of our real-world results obtained to date, architectural considerations and test plans underway - with an aim to help establish operational and technical requirements for our member agencies. Also, we will provide a view to 4G and 5G architectural possibilities that could help establish a flexible "network of networks" technical and business model that can integrate diverse stakeholder needs in a common PSBN.

Additionally, Peel, Halton and the GTAA have established a growing grass-roots association - "the PSBN Innovation Alliance" - to gather together like- minded agencies, organizations and municipalities in Ontario (and beyond), that seek to advocate together for common broadband data requirements, operational needs, appropriate cost models, and architectures - and to help define the real-world grassroots needs and use cases for our member agencies. Our panelists will provide an overview of our Association and activities along with an invitation to collaborate.

Presenters
- Michael Webb, Vice-President, Technology Services, E-Comm 9-1-1
- Sol Lancashire, Manager, Telecommunications Engineering, BC Hydro
- Bruce Grandy, Director Radio Communications Branch, Department of Transportation & Infrastructure, NB
- Superintendent Anthony Odoardi, Halton Regional Police Service
- Susan Payne, Manager VCOM & Support Services, Peel Regional Police Service
- Phil Crnko, M.A.Sc., P.Eng, Engineer, Halton Regional Police Service

Moderator
Dan Elliott, Communications Systems Manager, Aviation Services, Greater Toronto Airport Authority, Toronto Pearson Airport

17:00-18:30   Exhibitors' Reception *(Exhibit Area)*

Tuesday, December 3, 2019

07:00-13:15   Exhibit Show *(Metropolitan Centre)*

07:00-08:15   Continental Breakfast *(Exhibit Area)*

08:15-16:00   Plenary Sessions *(Metropolitan East)*

08:15-08:30

Opening Remarks

- Deputy Manager Jeff Brooks, Emergency Medical Services Department, The County of Lambton and Chair, CITIG

SESSION 7
08:30-09:30

Next Generation 9-1-1: A Strategic View from Canada's Largest City

Description
The issue of NG 9-1-1 has been on CITIG's agenda for years. In fact, CITIG joined forces with APCO Canada and NENA Canada in 2013 to host a NG9-1-1 National Governance and Coordination workshop in 2013.

Our keynote speaker, Deputy Chief Shawna Coxon, Toronto Police Service, is uniquely suited to address not only the topic of NG 9-1-1 but also to provide a high level overview of how it fits into the much broader landscape of community safety information management.

Deputy Chief Coxon is an internationally recognized leader who combines strategic vision with real life operational and technical experiences. Her fast paced keynote will both inspire and challenge CITIG 13 delegates to continue working towards a strong, resilient and innovative national NG 9-1-1 future.

Presenter
- Deputy Chief Shawna Coxon, Priority Response Command, Toronto Police Service

Moderator
Bryan Singleton, Deputy Fire Chief, Technical Services, Edmonton Fire Rescue Service

SESSION 8
09:30-10:30

Pulling the Future Forward: Accelerating Public Safety Communications Research

Description
Housed within the Communications Technology Laboratory (CTL) at the National Institute of Standards and Technology (NIST), the Public Safety Communications Research (PSCR) Division is the primary US federal laboratory conducting research, development, testing, and evaluation for public safety communications technologies.

During this session, PSCR Division Chief, Dereck Orr will introduce the research portfolios that resulted from stakeholder-driven prioritization of the critical technology challenges that emergency responders face. In the research areas of Mission Critical Voice, Location-Based

Services, Enhanced User Experience, Public Safety Analytics, Security, and Resilient Systems, Mr. Orr will brief attendees on the next-generation technology that stands to transform emergency response. PSCR inspires a community, worldwide, to join their mission via grant awards, prize challenges, and partnerships. Attendees will leave this session with an opportunity to track and participate in the cutting edge innovation the PSCR program contrives.

Note – PSCR is hosting a demonstration area in the exhibit hall where delegates can experience virtual reality emergency response simulations, augmented reality, mission critical voice quality software, and PSCR's open innovation challenge information.

Presenter
- Dereck Orr, Chief Public Safety Communications Research Division, NIST CTL

Moderator
Michael Webb, Vice-President, Technology Services, E-Comm 9-1-1

10:30-11:00   Network Break *(Exhibit Area)*

SESSION 9
11:00 – 12:00

Interoperability in Action – Case Studies

Description
Case #1
A Systems Approach to Interoperability – Unsanctioned Public Events
Deputy Chief Adair will be sharing his first hand operational observations of mass gatherings in the city of Waterloo. While public gatherings can cause interoperability challenges, these are addressed by mapping out the system, building relationships and in planning. As part of an inter-agency team, Mike observed how dialogue leads to innovation and solutions. Along with lessons learned, he will discuss the importance of seeking new tools and using the ones that are already at-hand.

Presenter
- Mike Adair, Deputy Chief Fire Rescue, Waterloo Ontario

Case#2
The St Clair River Float Down
An unsanctioned, annual event that involves both American and Canadian citizens floating down the St. Clair River, an international maritime boundary and significant commercial shipping component of the Great Lakes waterway. Through federal, provincial and municipal partnerships and planning, the Canadian Coast Guard supported the United States Coast Guard by implementing a multi-agency response to ensure the safety and security of all participants and first responders. This presentation will focus on the interoperability successes and challenges observed from multiple perspectives while utilizing the

communication software, Android Team Awareness Kit (ATAK), during the 2019 Port Huron Float Down."

Presenters
- Graham Silcox, Search and Rescue Program Officer, Canadian Coast Guard
- Irene Barriault, Senior Search and Rescue Program Officer, Canadian Coast Guard
- Greg Birdsell, Search and Rescue Program Officer, Canadian Coast Guard
- ENS Joshua D. Gross, Sector Detroit Enforcement, U.S. Coast Guard

Moderator
Deputy Manager Jeff Brooks, Emergency Medical Services Department, The County of Lambton and Chair, CITIG

12:00-13:00   Lunch *(Exhibit Area)*

SESSION 10
13:00 – 14:00

Public Alerting - Ensuring Effective Messaging

Description
Canada launched its nation-wide emergency public alerting program in 2014 (radio and TV) and added wireless public alerting (WPA) capabilities in 2018. In May 2018, Canada conducted its first all medium test of the new technology and now regularly tests in May and November. This session will provide an overview of the Canadian alerting system from issuer through to public reactions. The presentation will focus on recent experiences with wireless alerting and the lessons learned from recent alerts and the nationwide tests.

Presenters
- Martin Belanger, Director of Public Alerting, Pelmorex
- Ken Macdonald, Executive Director, Environment Canada & Climate Change Canada
- Jean Longpre, SaskAlert Manager, Federal/Provincial Program Coordinator, Government of Saskatchewan (SASK EMO)
- Kirk Nesbitt, Technical Advisor, Canadian Association of Broadcasters

Moderator
Dan Elliott, Communications Systems Manager, Aviation Services, Greater Toronto Airport Authority, Toronto Pearson Airport

14:00-14:15   Network Break *(Metropolitan Foyer)*

14:15-15:30

NG 9-1-1 – As the Countdown Clock Ticks

Description
The current 9-1-1 system has reached end of its line. Not only can it not keep up with evolving technologies and current Canadian expectations of a modern 9-1-1 system, but CRTC has mandated existing 9-1-1 systems be decommissioned by June 30, 2023. Public Safety Answering Points (PSAPs) must transition to continue taking 9-1-1 calls from the public.

The past few years has seen much discussion about the technical features of NG9-1-1. But what impact will this have on PSAPs, municipalities, and responding agencies? This expert panel will discuss some of the NG9-1-1 impacts such as costs, timelines and responsibilities, standards and requirements.

GIS will be a game changer in the NG 9-1-1 environment. Discover the processes and functions of GIS information today and how they will change in the Next Gen9-1-1 environment. Topics will include; sources of data, ownership, compilation and data management, 9-1-1 call routing & evolution, and ultimately how GIS information impacts finding callers in distress.

Presenters
- Holly Barkwell, ENP, President and CEO, BH Group Inc.; Canadian Region Director, National Emergency Number Association (NENA)
- Ronald Williscroft, Director, Association of Public Safety Communications Officials (APCO) Canada
- Michael Webb, Vice-President, Technology Services, E-Comm 9-1-1
- Kerry Murray-Bates, Manager, Toronto Police Service; Co-Chair, CACP ICT NG 9-1-1 Working Group
- Daphne DeJong, Project Manager, Ontario Provincial Police

Moderator
Alison Buchanan, Provincial Emergency Operations Centre Officer, Office of the Fire Marshal and Emergency Management

SESSION 12
15:30-16:00

Looking Ahead
- Deputy Manager Jeff Brooks, Emergency Medical Services Department, The County of Lambton and Chair, CITIG