Emergency Preparedness Plan
Save Public Lives and Property

PROTECT FIRST RESPONDERS AND ES PERSONNEL

In the event of a Chemical, Biological, Radiological, Nuclear, and Explosive Incident

Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) Defence

This document is about the SIGZEEN Color-Coded Identification and Interoperable Communication (SCI-IC) system innovated and developed for first responders (*Law Enforcement, Fire and Rescue, Medical, Paramedics*) and Essential Service "ES" personnel (*Military, Border Services, CBRNE Personnel*) in order to build an effective and interoperable workforce in the event of a Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) event. The SCI-IC system would help first responders and ES personnel to develop a unique communication mechanism so that they can enhance safety, interoperability and coordination capabilities to protect themselves and protect the public, save lives and property effectively and in a timely manner.

The SCI-IC system is developed based on objectives of the Emergency Management Treaty - E105173. Specifically to support the U.S. and Canada emergency management and CBRNE Strategy and Action Plan, and their emergency preparedness goals and objectives.

Treaty -E105173 is the agreement between the government of Canada and the government of the United States of America on Emergency Management Cooperation.

The U.S. and Canada Emergency Management Treaty -E105173
http://www.treaty-accord.gc.ca/text-texte.aspx?id=105173&pedisable=true

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LIST OF ACRONYMS

Acronym	Definition
FIRST RESPONDERS	Law Enforcement, Fire and Rescue, Paramedics, Medical
ES PERSONNEL	Military, Border Service, CBRNE Personnel
SCI-IC System	SIGZEEN Color-Coded Identification and Interoperable Communication system
DoD	U.S. Department of Defense
DND	Canadian Department of National Defence
PSEPC	Public Safety and Emergency Preparedness Canada
DHS	United States Department of Homeland Security
EMP	Electromagnetic Pulse Attack
RCMP	Royal Canadian Mounted Police
NATO	The North Atlantic Treaty Organization

1. EXECUTIVE SUMMARY

The U.S. and the Canadian government, the U.S. Department of Defense (DoD), Department of Homeland Security, and Canadian Department of National Defence (DND) and Public Safety and Emergency Preparedness (PSEPC) are concerned that there would be a potential Chemical Biological, Radiological Nuclear and Explosive (CBRNE) event that could happen within the next few years. https://fas.org/irp/threat/cbw/cbd-2016.pdf This is mainly due to increased foreign and domestic terrorist activities, and willingness of terrorists to use mass destruction weapons. They also think that these threats would further escalate to another level of danger because of 21st-century global "power competition" and nuclear aggression on foreign adversaries. https://fpif.org/the-pentagon-is-planning-a-three-front-long-war-against-china-and-russia. They also observe that aggression of these foreign adversaries and uncertainty of political aspect of threats from foreign nations could lead to large-scale cyber attacks and Electromagnetic Pulse (EMP) attacks on power grids and telecommunications infrastructure. The government and security experts realize that such attacks could disable a significant portion of nations electrical power system and telecommunication infrastructure, causing a major communication disruptive environment for emergency operations, particularly for first responders and ES personnel communication equipment and emergency communications capabilities. https://www.eenews.net/stories/1060058914), and (https://www.cfr.org/report/cyberattack-us-power-grid

In fact, security experts' major concern is that potential weapons of mass destruction would collaborate with cyber attacks and EMP attacks. They recognize that such combinations of attacks could lead to massive catastrophic disasters, and lead to mass casualties and thousands of loss of lives and property. They recognize that this needs to be addressed, assuring that first responders and ES personnel are adequately prepared to deal with such situations to protect the public and property. https://www.nytimes.com/2018/01/16/us/politics/pentagon-nuclear-review-cyberattack-trump.html

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https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/rslnc-strtg/index-en.aspx
http://cradpdf.drdc-rddc.gc.ca/PDFS/unc104/p534333_A1b.pdf
https://www.dhs.gov/national-strategy-chemical-biological-radiological-nuclear-and-explosives-cbrne-standards
https://www.gao.gov/products/GAO-10-123
http://www.dtra.mil/Portals/61/Documents/Missions/DTRA%20StratPlan%202016-2020%20opt.pdf

EXECUTIVE SUMMARY

In order to enhance and sustain resilience for CBRNE, the U.S. and Canadian government individually established a CBRNE Strategy and Action Plan. Nonetheless, both Strategy Plans to proceed in the same objectives and sets out actions based on five strategy objectives, prevention/ mitigation, preparedness, response, and recovery. This Strategy recognizes that first responders and ES personnel are the centers of any disaster situation since they are the first on the scene in the line of defense during a catastrophic event. Therefore, it is essential that every emergency personnel is protected and provided with a safe and effective work environment so that they have the ability to work together effectively. Mainly to provide immediate attention, medical intervention to save lives, transport victims to medical facilities, special operations that would help to prevent civil disturbances, control people, evacuation support, traffic control and more.

This Strategy understands that in order to respond to complex environments it needs an effective workforce and well-defined interoperable communications capabilities. This will provide the ability to build an efficient operational and functional interoperability, including confidence and an effective approach system, to integrate among respond groups so that they can save public lives, protect property and the environment. This also helps the public to build confidence among responders.

https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/mrgnc-prprdnss/chmcl-blgcl-rdlgcl-en.aspx
https://www.nato.int/docu/review/2005/combating-terrorism/NATO-CBRN-Capabilities/EN/index.htm
https://www.dhs.gov/national-strategy-chemical-biological-radiological-nuclear-and-explosives-cbrne-standards

Protect Those Who Protect Us

EXECUTIVE SUMMARY

To build safety and an effective workforce for first responders and ES personnel SIGZEEN Integrated Solutions Inc. innovated and designed the Color-Coded Identification and Interoperable Communication System (SCI-IC) in the form of a color-coded checkered high visibility garment.

The SCI-IC project is developed based on the U.S. and Canada CBRNE Strategy Plan objectives specifically focusing on interoperability both operational/functional and technical.

The SCI-IC comprises of two systems:
- Color-Coded Identification System
- Color-Coded Incident Command System

The first phase of the project was launched in 2009. The project was first introduced to law enforcement during the Vancouver 2010 Winter Olympics, and it was well received. Presently a number of law enforcement personnel in Canada and in the U.S. use this system for their members.

Pilot Project: The project was launched in 2009
Testing Period: 2010 - 2015 in Canada and the U.S.
Full-Scale Implementation: Launched Spring 2016

Present Users: First responders includes law enforcement personnel in Canada and the U.S. Some members of the Royal Canadian Mounted Police (RCMP), fire and rescue personnel, medical personnel, Canada Border Services, CBRNE personnel, BC Legislature Police, B.C. Sheriffs Services and more.

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Research Area:

The U.S. and the Canadian government, the U.S. Department of Defense (DoD), Department of Homeland Security, and Canadian Department of National Defence (DND), the Public Safety and Emergency Preparedness documents and research materials.

Lessons learned from various catastrophic incidents, and investigating consequences, and recommendations on these events, including evaluating numerous models, casualty predictions and assessment of analytical elements concluded by the U.S. DoD and Canadian DND.

These assessments and evaluations assisted to understand and build a simple cost-effective and efficient system, on how to protect first responders and ES Personnel in the event of a catastrophic event so that they can protect the public, save lives and property in a timely manner.

The SCI-IC program is part of our military deterrence concept innovated for future military readiness. This deterrence program is in collaboration with our affiliated company EQQUERA Inc. www.eqquera.com. This program has provided valuable and advanced knowledge in regards to mass destruction and nuclear incidents, including consequences that may be encountered and the importance of emergency preparation strategies during and after CBRNE events.

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http://www.forces.gc.ca/assets/FORCES_Internet/docs/en/about-reports-pubs-audit-eval/113p0800.pdf
http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_41.pdf
https://www.nato.int/cps/ic/natohq/news_115712.htm

3.   COMPANY

SIGZEEN Integrated Solutions Inc. is a Canadian company located in British Columbia, Canada. We are the first to innovate the Color-Coded Identification and Interoperable Communication system (SCI-IC System) to distinctively identify first responders and ES personnel from other workers and the general public.

Our mission: is to find short and long-term solutions that contribute to enhance interoperability. Most importantly communication interoperability and an effective interoperable operation system required to improve multi-jurisdictional operational capabilities.

Our goal: is to provide a specific perspective framework that can help to close existing gaps identified by world governments, international agencies, intelligence communities, security experts and emergency response communities, in regards to protecting first responders and ES personnel so that they can protect public lives and property.

2010 Vancouver Winter Olympics

The SCI-IC System was first introduced to law enforcement personnel in British Columbia, Canada during the Vancouver 2010 Winter Olympics, and it was well received.

NATO Presentation

Future Forces 2014
NATO Defence Conference
Prague, Czech Republic
Topic: Cyber and EMP Attacks on power grids
and Telecommunication Infrastructure

4. ACTIVITIES

To achieve these objectives, we are researching, innovating, developing and promoting safety programs and safety products that would help to enhance the safety of emergency responders. In particular, to build a safe, effective and interoperable work environment, when they respond to a CBRNE incident, terrorist attacks, mass shootings or any other complex emergency situations.

As we develop and promote our safety programs and safety products for law enforcement and other emergency response communities, we also continue to assess ongoing challenges and growing threats around the world. These findings would provide sufficient information and guidance to understand how to improve our safety program and products according to present and future challenges.

Past Performances:

- Introduced the SCI-IC system to law enforcement personnel during the Vancouver 2010 Winter Olympics.
- Carried out a nationwide SCI-IC awareness campaign.
- Participated in Canadian Chiefs of Police Association conferences.
- Introduced the SCI-IC system to governments, and their respective agencies (awareness program).
- Speaker presentation at the NATO defense conference Prague, Czech Republic. The topic presented was Cyber, EMP and Physical attacks on power grids and the safety of first responders.

Present Activities:

- Promote the SCI-IC system to all governments and respective agencies, including international agencies and their respective counterparts.
- Carrying out comprehensive research programs regarding "Psychological Behavior and Social Implications on Humans without Electronic Communications and Safety of First Responders and the Public."

Our Goals

- Provide a reliable protective identification system for the personal safety of first responders and ES personnel.

- Provide a unique identification system to visually communicate when responders' communication equipment malfunctions due to disruption on power grids and telecommunication infrastructure.

- Provide an identification system to eliminate or minimize confusion caused among responders and the public during a catastrophic event.

- To build up public confidence among first responders and ES personnel identifying "Who's Who"

Medical Vest

GOAL 1: Establish a Color-Coded Identification System

To provide a Color-Coded checkered protective garment exclusively designed for first responders and Essential Service personnel (*military, border services, and CBRNE personnel*). This provides a method to differentiate emergency responders from other high visibility clothing wearers, such as construction workers, private security guards, road workers, non-emergency workers, and the general public. Also provides a method to enhance effective coordination approaches, and ability to identify individual emergency response groups and their representation.

Fire Vest

GOAL 2: Establish a Color-Coded Interoperable Communication System

To enhance interoperable communications capabilities among first responders and ES personnel. The system is specially designed to communicate when first responders' communication equipment is interrupted or malfunctions, and unable to communicate among emergency response groups. These situations can arise due to disruptions on nations' power grids and network communication infrastructures in the event of cyber and EMP attacks.

GOAL 3: Establish a Color-Coded Incident Command System

To enhance multi-response groups interoperable communications and operational capabilities. This method is designed to enhance communication among local responders in an incident area, and respond groups who arrive from other jurisdictions.   This Incident Command System further provides the Color-Coded number identification system. The key feature of the system is that command leaders and group members have the ability to quickly and visually identify the members and their specific duties and responsibilities. The number system is designed with specific colors, numbers and shapes of patches that can be worn over existing garments. Further, the system would have the ability to protect first responders and ES personnel from impersonators who may pretend to be emergency responders and plan to interrupt emergency operations, also attempt to harm law enforcement personnel. More information contact info@sigzeensolutions.com

6.   COLOR-CODED IDENTIFICATION SYSTEM

Color Psychology

We also examined the importance of color psychology and how specific colors affect emergency operations. It is essential that when the public is disorientated and in a chaotic environment, they should have the ability to quickly and easily recognize emergency personnel at the incident area, and it's vicinity.

Law Enforcement

Black/Silver Checkered - Black color represents power, security, authority, and capability to control the situation.

Fire and Rescue

Red/Silver Checkered - Red color often associates warm, vibrant, and intensity and grabs attention. The color red has a long history related to fire and rescue.

Medical and Paramedics

Blue/Silver Checkered - Blue color associates with inspiration, sadness calming and care. Mostly this color is used by the medical industry for hospitals and medical care, which provides a calm feeling and efficient interaction with people who need help.

Military

Green/Silver and Green/Yellow - Green color mostly associate with nature, also with military uniforms for decades. The Military personnel has two color combinations, one with the silver background and green checkered in the center for military commanders, and the other a yellow background and green checkered in the center for the military, and the U.S. national guards.

Border Service Agents

Black/Silver Checkered - same as law enforcement.

Nuclear Personnel

Silver reflector-blue center strip and nuclear sign for nuclear personnel.

Biological/Radiological Personnel

Silver reflector/green center strip and biological sign.

Credit: Gazette Magazine

7. COLOR-CODED VESTS

Law Enforcement

Medical/Paramedic

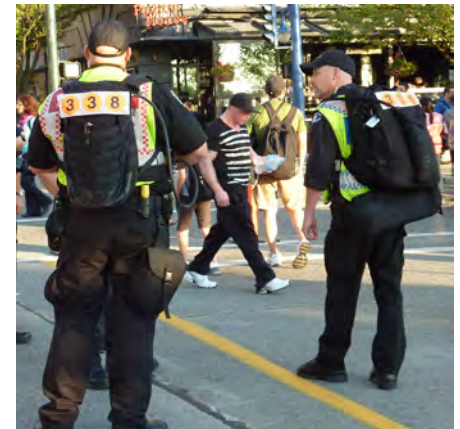Fire and Rescue

Border Services

Military

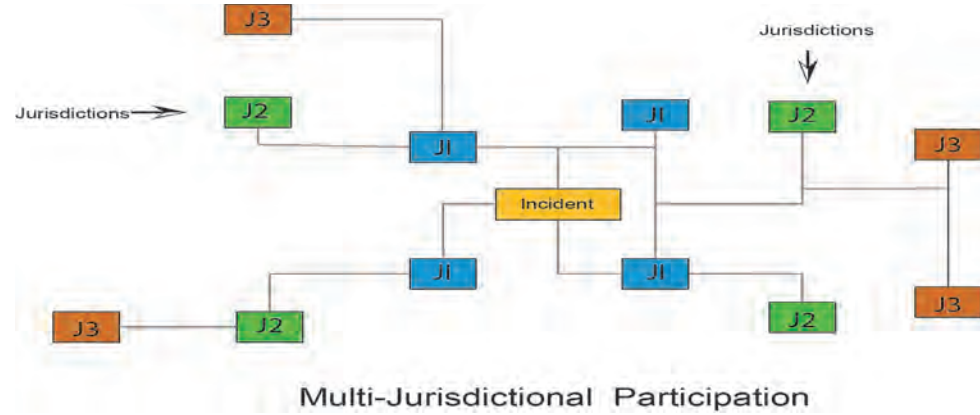
Bio/Radiological

Nuclear

Special Forces 1

Special Forces 2

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8.   INCIDENT COMMAND SYSTEM

COLOR-CODED
INCIDENT COMMAND SYSTEM

Multi-Jurisdictional Participation

Multi-Jurisdiction and Multi-Agency Interoperability

Interoperable communication is a critical element for multi-jurisdictional and multi-agency task force joint operations. During mass destructions, emergency response efforts are not limited to a single jurisdiction and single agency. Such efforts require large-scale support, in particular, intervention from multi-jurisdiction participation.

It is imminent that such involvement needs effective and efficient coordination actions that collaborate with responders at the incident area, and emergency responders arriving from other jurisdictions, particularly working together under a single control command structure.

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Command System: To support a multi-jurisdiction workforce approach and support command leaders to carry out their roles and responsibilities efficiently, we developed a Color-Coded Incident Command System. This command system comprises of inter-changeable sequences of numbers and various color-coded patches.

Number System: The unique characteristic feature of this system is that only the command leaders have the prior knowledge of what numbers are expected to be used for the specific incident. When an incident occurs, the command leaders will inform the team of the specific sequence of numbers to be worn. This will provide command leaders and members of the response units to identify who's who in the operational group, also their duties and responsibilities.

Complete information on the number system info@sigzeensolutions.com

10. FIELD OF RESEARCH

- The U.S. Navy incident command system was developed in the late 1960 for fighting wildfires.

- Lessons learned from the 11th September 2001 terrorist attack and ongoing CBRNE and terrorist threats towards western nations.

- Hurricane Katrina, Hurricane Sandy, and wildfire disasters around the world.

- The success and shortfalls of past emergency operations.

- The U.S. and Canadian governments, DoD, DND and their agencies reports, research papers and articles.

- The U.S. and Canada CBRNE Strategy Plans and objectives.

- The NATO CBRNE Strategy Plan and objectives, including the existing systems and recommendation towards the safety of first responders.

- The intelligence community's findings and recommendations towards preparations for possible CBRNE and terrorist incidents.

- EMP and cyber attacks on power grids and telecommunication infrastructure.

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