

# Multi-Agency Situational Awareness System

## PC-IDEA – SDI in Disaster Management

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Natural Resources  
Canada

Ressources naturelles  
Canada

# Outline

- Overview
- Role of MASAS in Situational Awareness
- MASAS Solution
- CGDI Components that enabled MASAS
- Summary



# Initiative Overview

- MASAS national implementation initiative with a number of partners:
  - Defence R&D Canada
  - Natural Resources Canada
  - Public Safety Canada
  - Provincial emergency organizations
- MASAS is a deliverable of the Communications Interoperability Strategy for Canada and Action Plan
  - Approved January 2011 by Senior Officials Responsible for Emergency Management



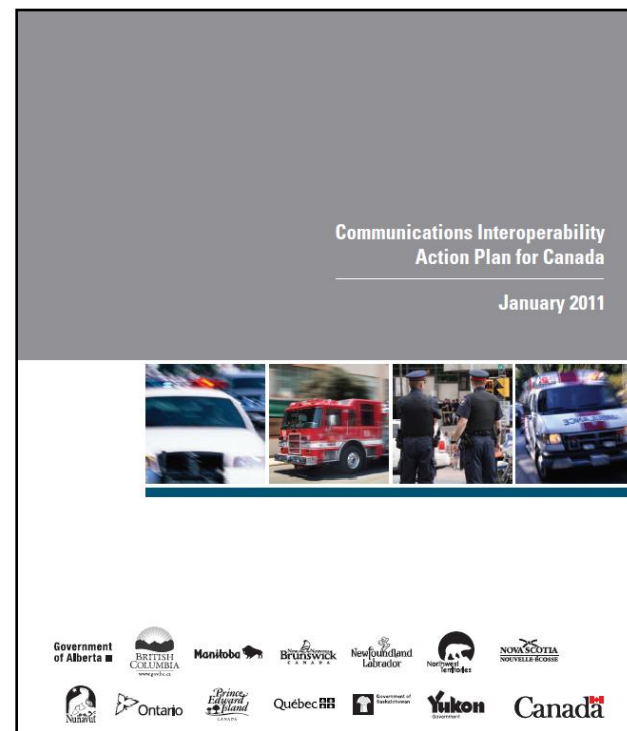
Public Safety  
Canada

Sécurité publique  
Canada



Natural Resources  
Canada

Ressources naturelles  
Canada



Natural Resources  
Canada

Ressources naturelles  
Canada

# “MASAS” Initiative Scope

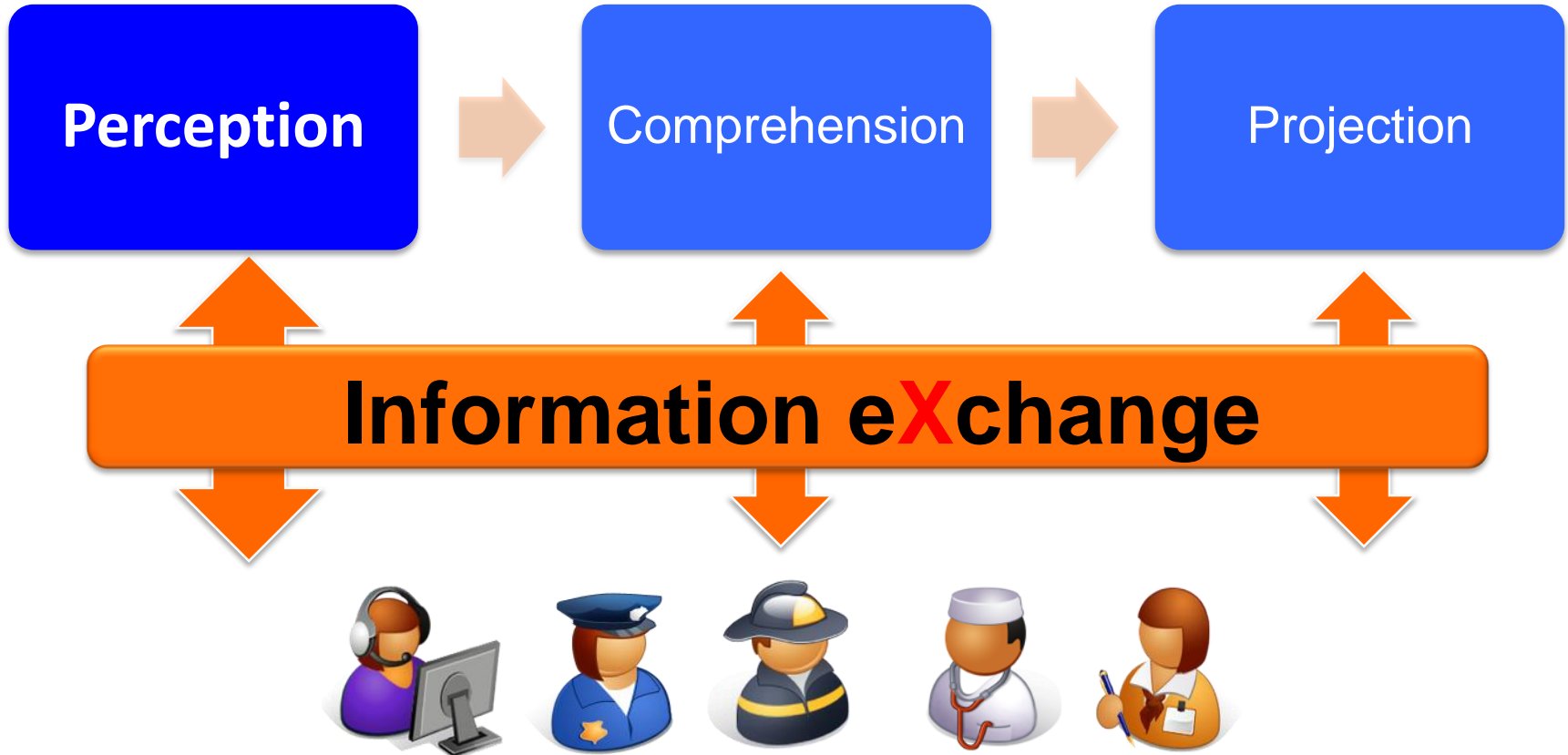
## Situational Awareness (SA) System



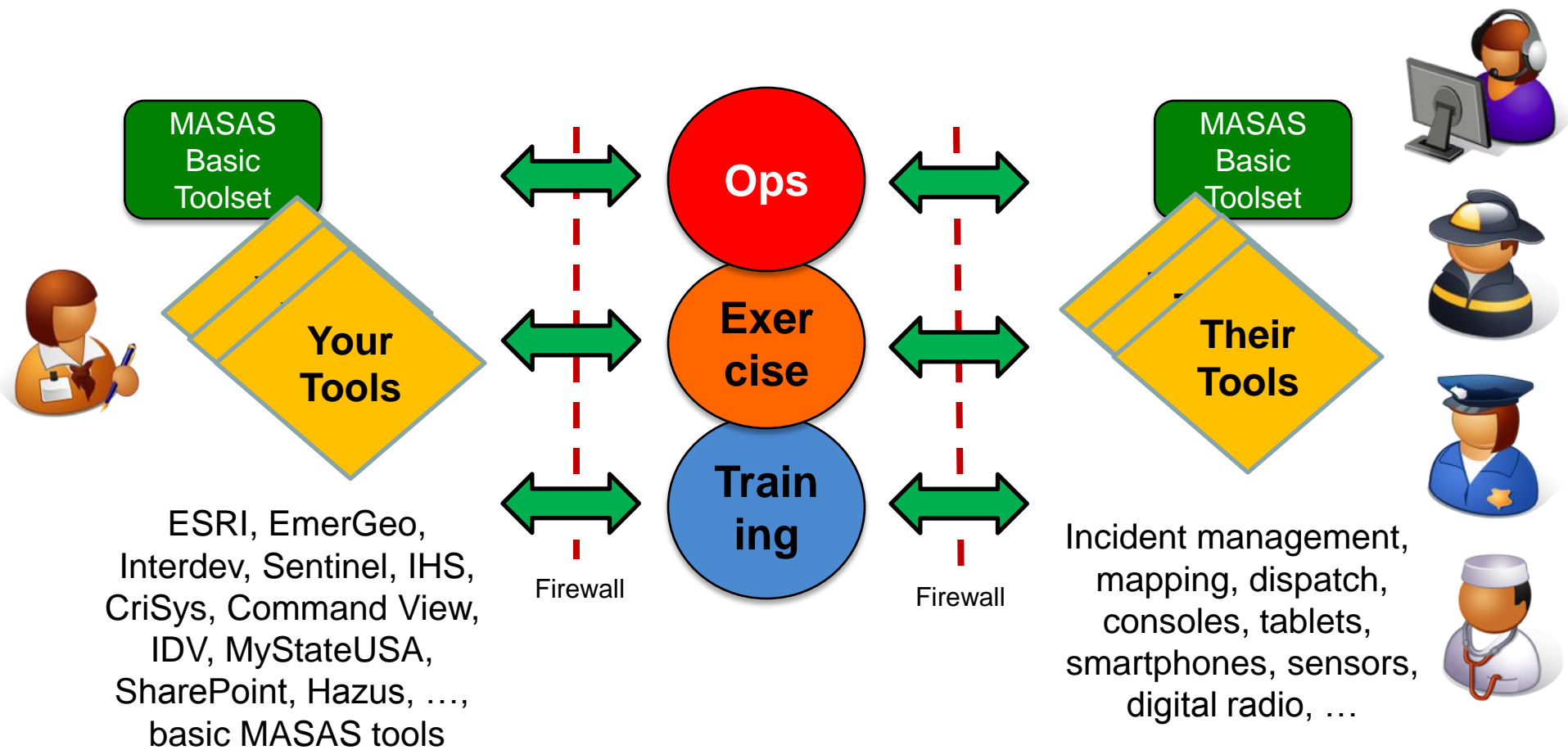
*“As much as 88% of human error is due to problems with situation awareness.”*

Dr. M. Endsley

# Role of MASAS-X

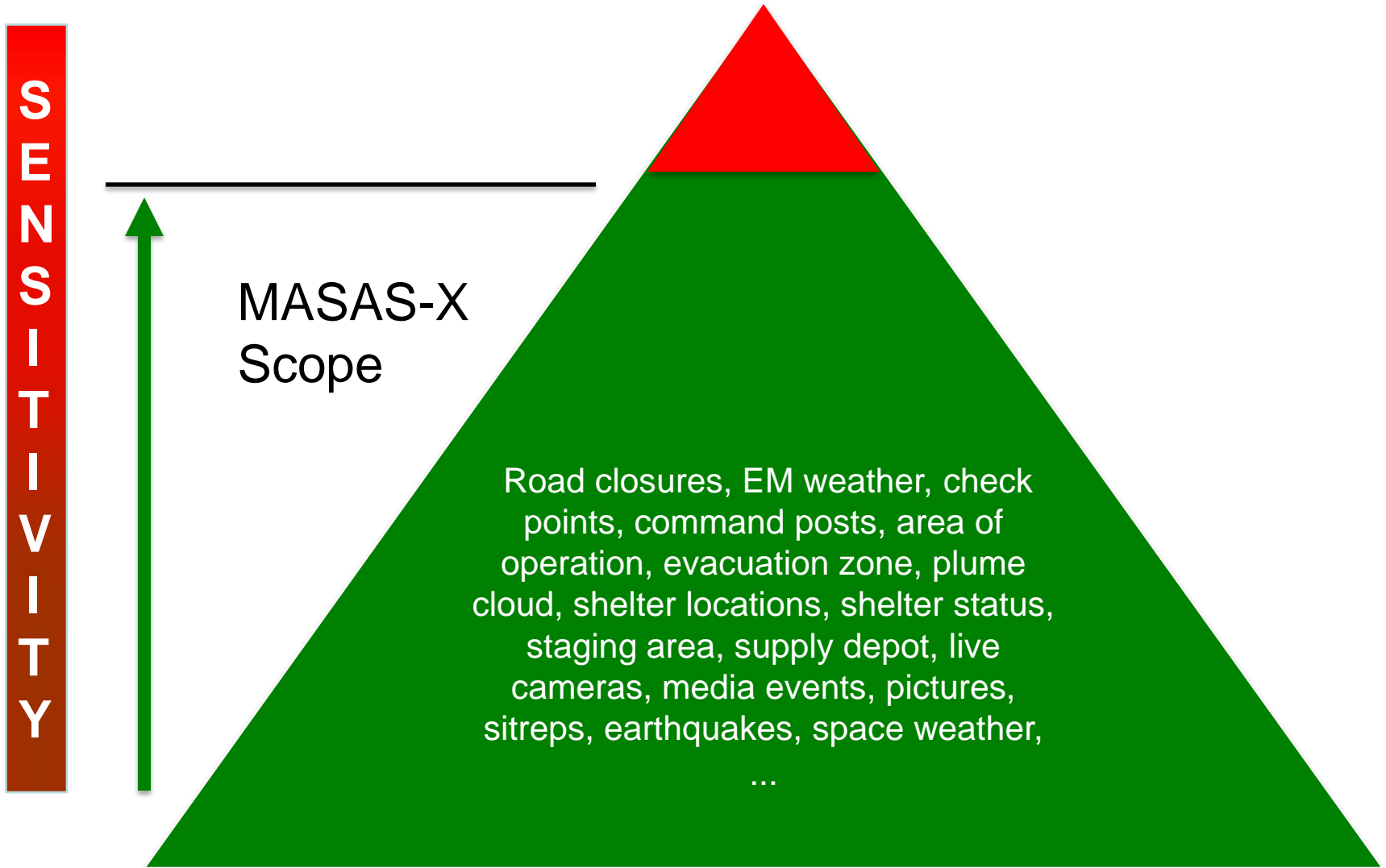


# MASAS Information Exchange (MASAS-X)



# Focus on NON-Sensitive SA

(May link to secured sensitive content)



# Value for Money

- Expected **lowers costs** for emergency managers
- **Real-time alerting** & information dissemination to operations centers
- **Faster response through improved visualization**, information processing and standard messaging that help reduce confusion during hectic circumstances;
- **Collective capacity** to respond due to interoperability with other jurisdictions
  
- Currently 310+ registered user agencies





# Our Solution

**National framework to integrate trusted, authoritative emergency-related data in a geographic context**

**Real-time, multi-platforms, multiple interoperable information sources**

**Open Government:**  
System for open dialogue based on open data and information  
**(for official government purpose)**

Multi-levels of governments and private sector  
**collaborating for common good**



**'Canada's Real-Time Disaster Map'**



# CGDI Component – Governance:

- 2006- 2008 GeoConnections created a Public Safety/Security advisory committee of domain experts who sponsored the project and GeoConnections program provided funding for system development.
- 2007 - GeoConnections Advisory committee interfaced with Senior Officials responsible for Emergency Management
- In 2010, Centre for Security Science, assumed technical and operational leaderships. Public Safety Canada/NRCan are collaborators.
- In 2010, Public Safety Canada developed governance framework via SOREM.
- In 2010, Centre for Security Science, assumed technical and operational leaderships. Public Safety Canada/NRCan are collaborators.
- Future – Planned to move MASAS Operations to Non-Government Organization. Recommendation of KPMG Governance Study



# CGDI Component - Interoperability: Canadian Emergency Management Symbology and Taxonomy



- Creates a reference taxonomy of incidents and points of interest (i.e. events and incidents, operations, infrastructures)
- Taxonomy is complementary with other information management and interoperability frameworks in order to promote interoperability.
- Provides standard emergency management symbols for over 370 events.

# CGDI Component - Data:

## Two types of data in MASAS

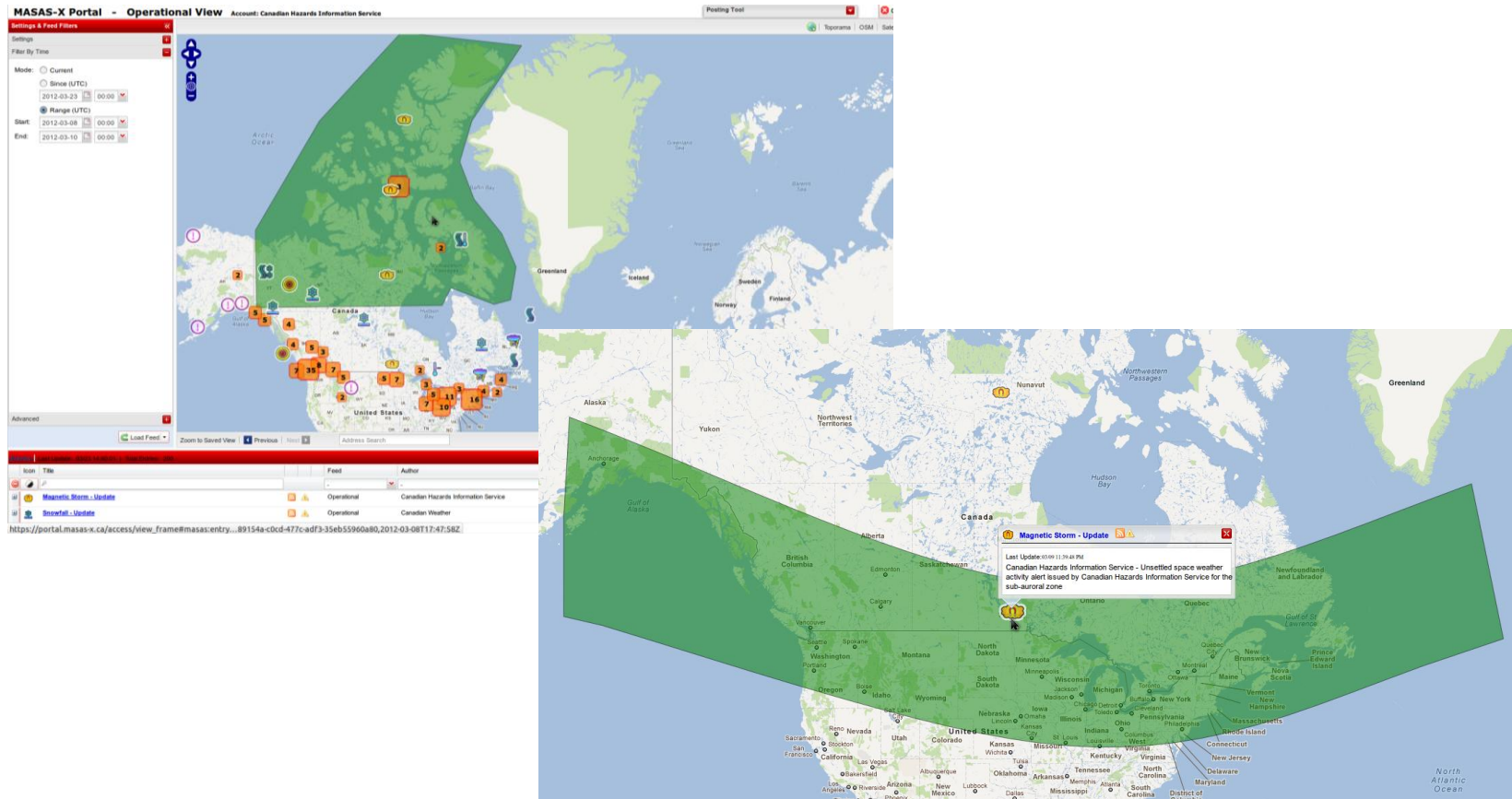
- Contextual data
  - Base maps
  - Infrastructure layers
- Event data
  - Threats and hazard data
  - Response data



# CGDI Component - Contextual Data: Atlas Transportation Base Map



# CGDI Component - Event Data: NRCCan's Space Weather Information in MASAS



# CGDI Component - Event Data: Environment Canada's GeoMet Service in MASAS

**MASAS-X Portal** Account: Environment Canada - Ottawa Tools - Mode: Operational

**Settings & Feed Filters**

Settings

Feed Name: Operational

Access Code: .....  Hide

Feed URL: <https://common.masas-x.ca/hub/Fi>  Disable Feed

Language:  English  Français

Local TZ: Eastern Daylight Savings Time

Display TZ: Use Local Time

Delete Settings Save Settings

Filter By Time Advanced

Load Feed

**GeoMet WMS layers into MASAS**

**Weather radar composite served in WMS**

Icon	Title	Feed	Author	Status	Severity	Category	Updated	Expires
	Frost - Update	Operational	Canadian Weather	Actual	Minor	Met	05/17 09:45:10	05/17 19
	Wind - Update	Operational	Canadian Weather	Actual	Minor	Met	05/17 09:45:10	05/17 19
	Gale - Update	Operational	Canadian Weather	Actual	Minor	Met	05/17 09:45:10	05/17 19
	Rainfall - Update	Operational	Canadian Weather	Actual	Minor	Met	05/17 09:45:10	05/17 19
	Wind - Update	Operational	Canadian Weather	Actual	Minor	Met	05/17 09:45:10	05/17 19

**MASAS: location-based situational awareness information and alerts for first response and emergency management agencies**



# CGDI Component - Viewing Tools:

- Because the CGDI is standards based, many different tools and technology can be used with the MASAS system
  - Open source tools
  - Proprietary vendor tools
  - Existing tools





# CGDI Component - Viewing Tools: MASAS JavaScript Viewer

**MASAS Viewing Tool - Sandbox** [Disclaimer](#) - Version 0.

Settings & Feed Filters Zoom to Saved View Previous View Next View  Use Detailed Popups Satellite Street

Settings

1 [x] +

Feed Name: Sandbox

Access Code: cpc3is  Hide

Feed URL: https://sandbox.masas.ca/hub/feed

Language:  English  Français

Local TZ: Eastern Daylight Savings Time

Filter By Time

Map data ©2012 Google

Entries

Icon	Title	Feed	Author	Status	Severity	Category	Updated	Expires	Zo
	<a href="#">Electricity Supply - Alert</a>	Sandbox	Tech Demo	Actual	Moderate	Infra	07/20 16:01:12	07/27 16:01:12	
	<a href="#">Electricity Supply - Alert</a>	Sandbox	Tech Demo	Actual	Moderate	Infra	07/20 16:00:09	07/27 16:00:09	
	<a href="#">Electricity Supply - Alert</a>	Sandbox	Tech Demo	Actual	Moderate	Infra	07/20 15:31:12	07/27 15:31:12	
	<a href="#">Electricity Supply - Alert</a>	Sandbox	Tech Demo	Actual	Moderate	Infra	07/20 15:30:09	07/27 15:30:09	
	<a href="#">Roadway Closure - Alert</a>	Sandbox	Tech Demo	Actual	Minor	Transport	07/20 15:20:05	07/27 15:20:05	

Windows Taskbar: Start | MASAS Viewing Tool - Go... | P:\MASAS\Presentations | MASAS\_Brief\_PC-IDEA... | MASAS\_GISDay2.ppt | EN | 14:21



# CGDI Component - Viewing Tools: ESRI FLEX Viewer for MASAS

The screenshot displays the ESRI FLEX Viewer interface for MASAS. The main map shows Canada with various weather alerts represented by icons: yellow and red concentric circles for Special Weather Statements, and purple lightning bolts for Thunderstorms. A sidebar panel titled "MASAS Sandbox (Consume)" is open, listing the following alerts:

- Squall - Update**  
Fri Jul 27 2012 02:30:10 PM
- Wind - Update**  
Fri Jul 27 2012 02:30:09 PM
- Thunderstorm - Update**  
Fri Jul 27 2012 02:30:05 PM
- Special Weather Statement - Alert**  
Fri Jul 27 2012 02:29:01 PM
- Rip Current Statement - Alert**  
Fri Jul 27 2012 02:25:01 PM
- Special Weather Statement - Alert**  
Fri Jul 27 2012 02:15:04 PM
- Special Weather Statement - Alert**  
Fri Jul 27 2012 02:15:03 PM
- Special Weather Statement - Alert**  
Fri Jul 27 2012 02:15:03 PM
- Special Weather Statement - Alert**  
Fri Jul 27 2012 02:15:02 PM
- Special Weather Statement - Alert**  
Fri Jul 27 2012 02:15:02 PM
- Magnetic Storm - Alert**  
Fri Jul 27 2012 02:06:03 PM

The interface includes a top toolbar with navigation and tool icons, a sidebar with map navigation controls, and a bottom status bar with the ESRI logo and "POWERED BY esri" text.



# Summary

- MASAS is a key component of increasing situational awareness for the Public Safety & Security community.
- There is widespread use of MASAS in agencies across Canada.
- GeoConnections investments in the Canadian Geospatial Data Infrastructure have been key to enabling MASAS.



**Thank-you**  
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