EMGCP Meeting – Public Safety Canada and Government Operations Centre (GOC) prsentations

November 13, 2024 | 14:00 – 14:49 Emergency Management Geomatics Community of Practice (EMGCP)

Attendees DFO, DND (CJOC), DND (MCE), ECCC (NEEC), ESDC, ISED (Tourism), NRCan (EGS), NRCan (GeoDiscovery), PS GOC (Government Operations Centre), PS REID (Resilience and Economic Integration Division), PSPC (Real Property Services), RCMP, StatCan (Strategic Data Management), TC EP (Emergency Preparedness), TC TDG (Transportation of Dangerous Goods), TC TEA (Transportation & Economic Analysis), TC Hydrogen, CRC (Emergency Operations Data)

Location Online (Microsoft Teams)

1. WELCOME AND INTRODUCTION 14:01-14:02

Presenter: Darlene Tran - PS (GOC)

Description
Welcome and overview of today's meeting agenda.

1.1. CALL TO ORDER

Description

The attendance is captured by attendees inputting their name, position, team and department in the chat.

2. Presentation of PS 14:02-14:30

Presenter: Julie Van de Valk (Data Science and Engineering Team – Public Safety Canada)

Presentation Overview

- Presentation by Julie and Sarah from Public Safety Canada's data science and engineering team. They discussed their work on flood risk management, highlighting that flooding is Canada's costliest natural hazard, with an average annual loss of $2.3 billion.
- They detailed the development of a Canada-wide flood hazard map using high-resolution data and global modeling, emphasizing its role in identifying flood-prone areas. The team also shared insights on the concentration of risk, noting that the top 10% of riskiest residents account for 90% of the total annual loss. Future plans include making these data publicly available through a digital resource.

Overview of Public Safety Canada's Data Science and Engineering Team

- The team consists of about 10 members with extensive backgrounds in data science and engineering.
- The team focuses on Integrated Risk Management for natural hazards, with mandate commitments in flood hazard and risk management.
- This is inclusive of the federal mandate to keep Canadians safe from various risks, including natural disasters.

Flood Risk Reduction Initiatives

- There are several flood risk reduction initiatives, including a modernized Disaster Financial Assistance Arrangements program.
- The team is working on a low-cost Flood Insurance Program to protect high-risk households.
- They are identifying federally identified flood risk areas and creating a publicly accessible online flood risk awareness digital resource.
- Overall, there is a need to address the costliness of flooding in Canada and the impact of climate change on its frequency and severity.

Flood Hazard Mapping and Identification Program

- The role of Natural Resources Canada in leading the flood hazard mapping and identification program (FIMP).
    - The program aims to create engineered flood maps using high-resolution input data and regional hydrology.
    - Global modeling and mapping are also used, which provide lower resolution but broader spatial coverage.
    - This emphasizes the complementary nature of these mapping products and their use in understanding flood hazards across the country.

Data Sets and Risk Analysis

- Overall, there are several varying datasets used for hazard, exposure, vulnerability, and consequence analysis.
    - The team combines flood maps with exposure data to understand the value of assets at risk.
    - They conduct sensitivity analysis and create upper and lower bounds for their models to account for errors.
    - There is significant effort required to develop high-accuracy exposure data sets and social vulnerability assessments.

Public Awareness and Collaboration

- There are several tools in development for a flood risk awareness digital resource for the general public.
- For the public – a portal will provide flood hazard ratings and knowledge guidance tools.
- The team is working on various initiatives, including disaster financial assistance arrangements, a Flood Insurance Program, and multi-hazard work.
- Overall, this highlights the importance of collaboration and openness to new partnerships.

2.1. Q&A

Mark Oswald: **Have these layers been shared publicly? If not, when will it be?**

A: Not knowing exactly which dataset that you're referring to – I'll go over a couple of this and if I don't answer your question please clarify in the chat. Our **Community Risk Index** will be shared publicly when the portal is launched in the fall of next year. The **Federally Identified Risk Flood Areas** layer will also be shared publicly when the portal launches in the fall of next year, however, full risk assessments use more proprietary data and will not be available publicly other than aggregated into community risk index values. However, that dataset is something that we're happy to work stakeholders to share, if you have a potential use case for it and indicate that kind of information you might need from it. The **Canada-Wide Residential Buildings Layer** is in the process of being published and with NRCan being our publishing resource – it is very close to being available and open source.

Randy McGraw: **How do we get access to the 30m flood risk areas layer?**

A: We've purchased a license that allows for limited sharing within the federal government. You can feel free to get in touch with me. We work with our model providers and it is their proprietary data so if there are any government users we work to identify you use case and interest in the data, articulate that and approve it on a case basis with significant licensing constraints. We bid purchase the dataset through an open bid and tender process and we want it to be used so feel free to get in touch with me (julie.vandevalk@ps-sp.gc.ca).

Monica Blaney: **Are you working with ESRI's 3D Modules that now have a time component?**

A: Broadly speaking, no, we're not working with 3D modules. We're less focused on the visualization aspects and more on the underlying data. I will say that the visualization that we can do with this data publicly is actually quite limited because we are working towards that flood risk awareness, digital resources and respecting all WCAG accessibility compliance guidelines. So the visualization we *can* do with the flood hazard data is very constrained so we try to focus on something that can communicate the strength of the data that we have while also meeting those requirements.

3. GOC Geomatics First Alert Dashboard 14:34-14:44

Presenter: Jean-Maxime Noiseux - PS (GOC)

Presentation Overview

- The GOC Geomatics team developed a new dashboard that provides AI-enhanced open source intelligence into a customized ESRI dashboard connects to First Alert feed for GOC's Watch Centre.
- Sought to build an application with a focus on open-source information in North America and Canada with prioritized notifications and live filters.
- This application prioritizes North America and Canada notifications with map symbols and filters.

First Alert Dashboard Introduction

- There was an identified need for OSINT (Open Source Intelligence) capability to fill a gap in operational situational awareness
- The team identified a need for an application to handle open-source information and social media reports
- A Communications Duty Officer (ComDO) is responsible for reviewing open-source information, but the sheer volume of platforms and content was overwhelming

Choosing the First Alert Service

- The team considered various service providers and ultimately chose First Alert by Data Minr for its AI-enhanced open-source intelligence
- The First Alert application provides a dashboard that was deemed too busy for the operations centre
- A decision was made to build a customized First Alert ESRI dashboard for a more customized experience
- The new dashboard connects via a feed to provide a more manageable interface for the operations centre

Dashboard Features and Customization

- The dashboard allows for specific filters for events of interest or notifications, aligning with reporting criteria
- An OSINT Analytics team was established in June 2024 to further investigate notifications and triangulate their validity
- The dashboard includes an API option tied firectly to ESRI, ensuring seamless communication between First Alert and ESRI
- The application is built for the operations centre and the OSINT team, focusing on Canada, and broadly North America

Data Management and Notification Prioritization

- The dashboard displays high-priority notifications using specific symbology to stand out on the dashboard
- The notification list is live – populating elements in near real-time
- The data feed only contain information from the last 24hrs, which is beneficial operationally but limits data archiving
- The Geo team developed an in-house script to take daily snapshots of the data and append it to an archive layer for future analysis

Interactive Tools and Additional Layers

- The dashboard includes a search bar to look up notifications by source or location, a list with flash priorities and another list that captures all notification types
- In the operations centre, the dashboard is shown on a tactile board that allows for interactive map navigation and selection tools
- Additional layers, such as First Nation reserves, building points and live weather alerts can be used for quick analysis and spatial snapshots
- The First Alert dashboard includes a bookmark list for multi-select, allowing multiple notifications to be selected at once
    - This feature is useful for tracking several events or handing over information to a separate team
    - The bookmark list can be interacted with and notifications can be easily removed by selecting them

Conclusion

- Open invitations are extended for teams to share projects, information or reach out for collaboration opportunities

4. ADJOURNMENT 14:48-14:49

Presenter(s): Darlene Tran - PS (GOC)

The next meeting is scheduled to take place on February 12th, 2025. Meeting invites will be sent out in the next few weeks.

Feel free to reach out to Darlene Tran if you have any topics you would like to present at the next meeting.