The Canada Forum
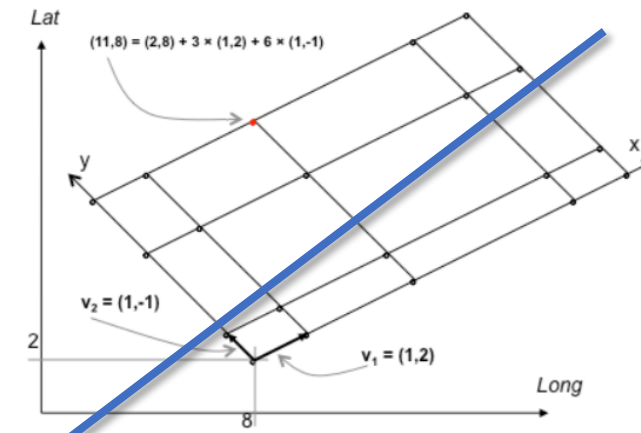# on
Geospatial Standards

Gordon Plunkett, Esri Canada
October 30, 2018
GeoAlberta Conference, Edmonton
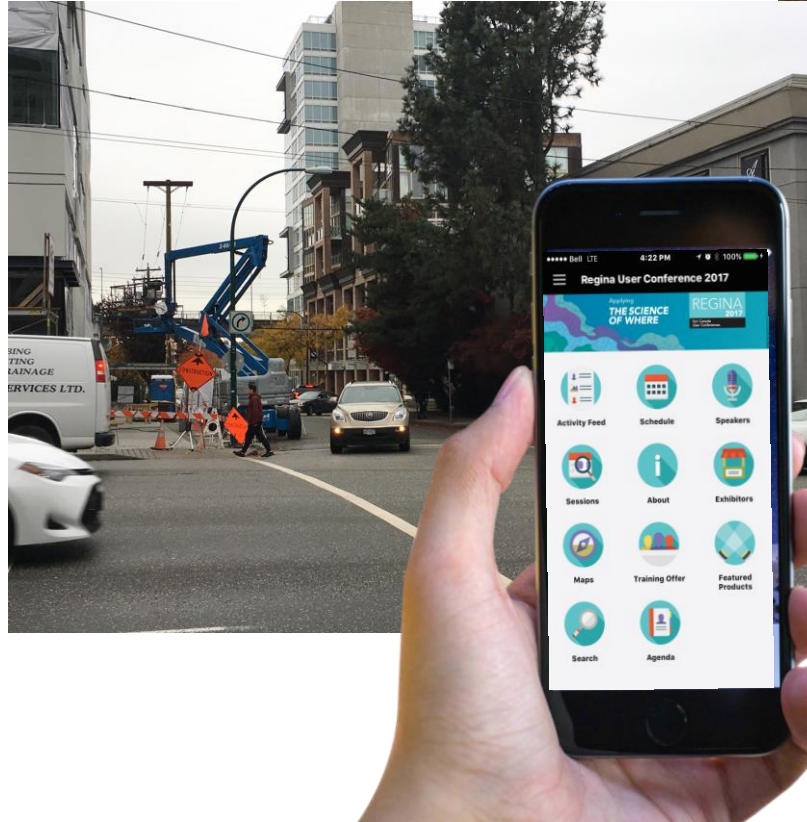
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Making location count.

What this presentation is not…

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Why do we need Standards?

- Safety and reliability
- Support of government policies and legislation
- Interoperability
- Business benefits
  - Open up market access
  - Provide economies of scale
  - Encourage innovation
  - Increase awareness
- Consumer choice

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So why do we need digital standards?

Digital Transformation has begun. . .

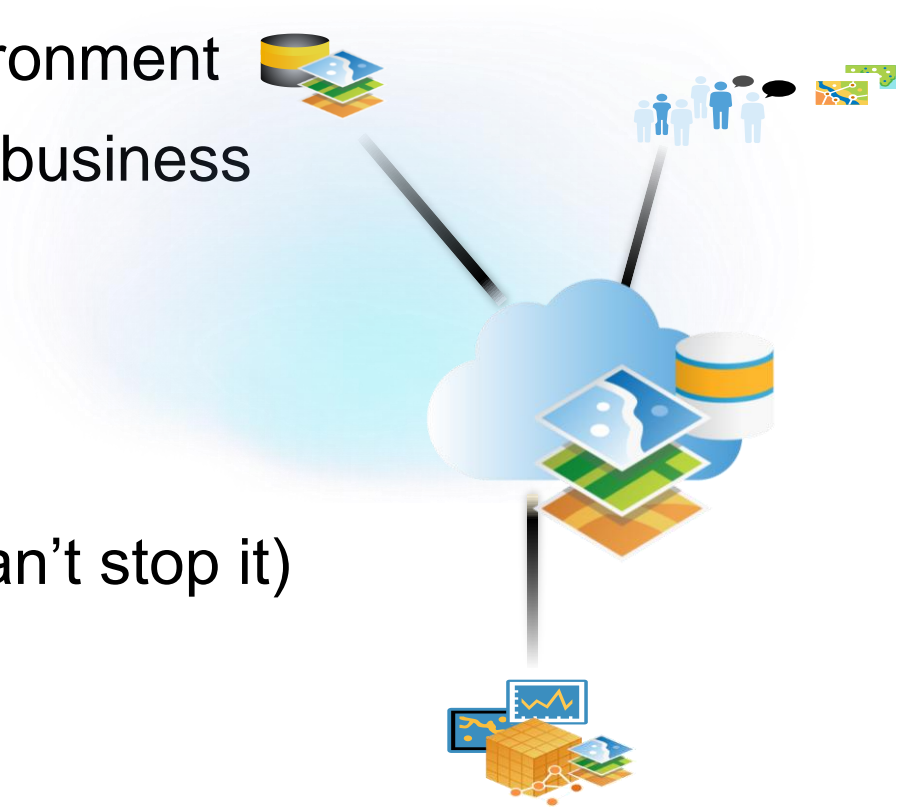We Are Living in an Era of Exponential Technological Advancement

Pervasive
Geographic
Understanding

Web GIS is already playing a fundamental role in integrating geography into everything we do
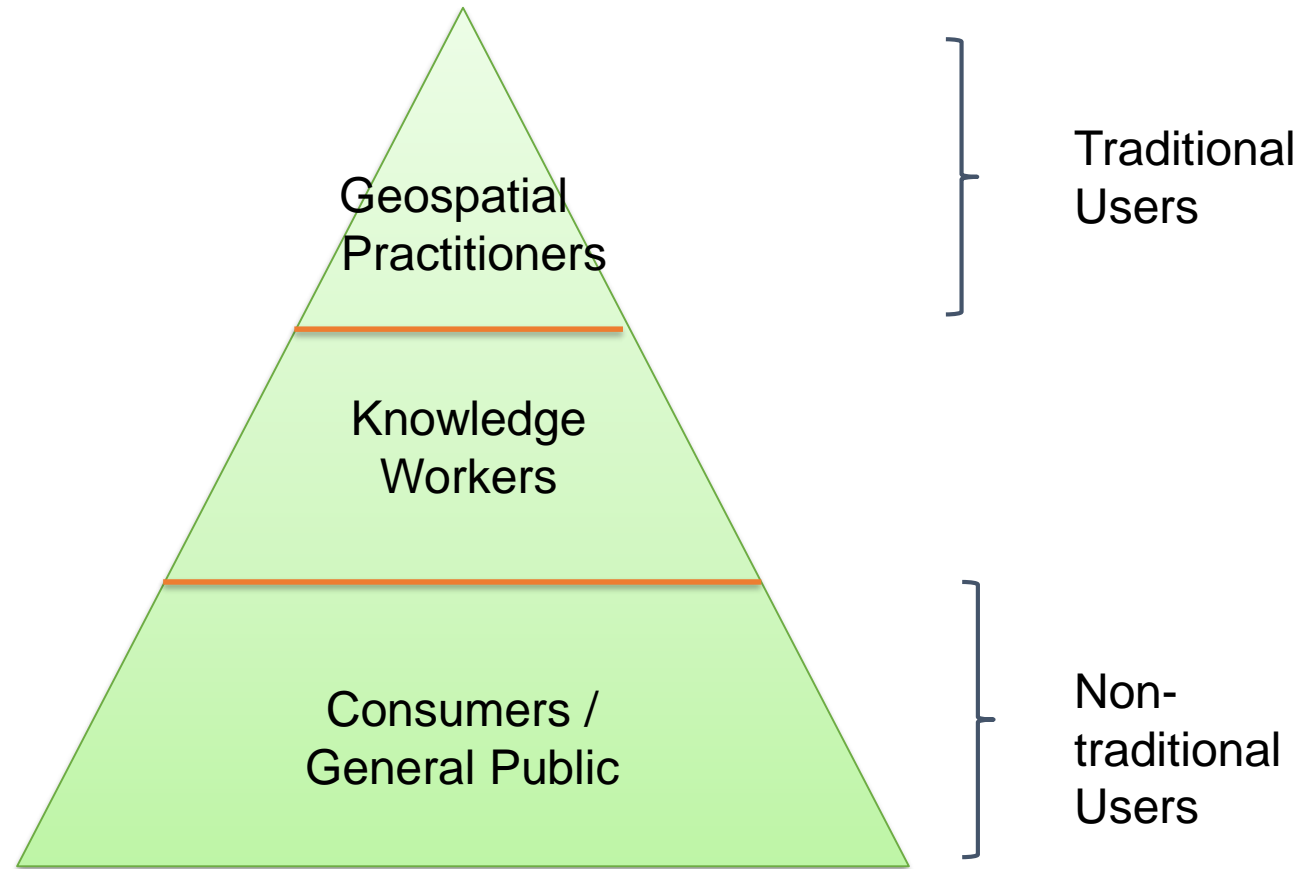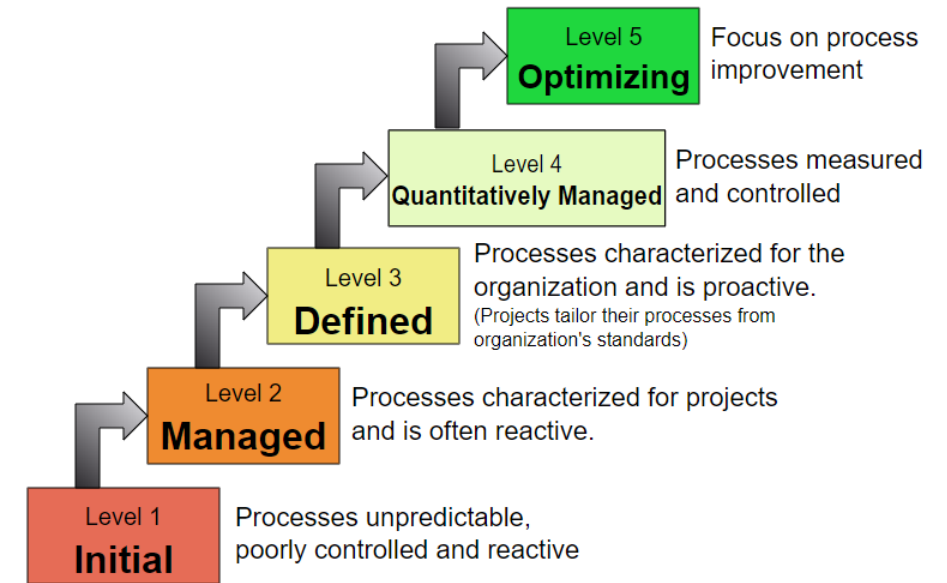
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Data-Driven Digital Government

- Pervasive digitization of government work and data

- From islands-of-automation to fully digital environment

- Public records define the truth for government business

- Non-governmental records will play a role

- Internet of Things (IoT) data

- SmartCity (SmartEverything) data

- Need to embrace digital transformation (you can't stop it)

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User Capability Pyramid

Geospatial Practitioners

Knowledge Workers

Consumers / General Public

Traditional Users

Non-traditional Users

Characteristics of the Maturity levels

Level 5
Optimizing — Focus on process improvement

Level 4
Quantitatively Managed — Processes measured and controlled

Level 3
Defined — Processes characterized for the organization and is proactive. (Projects tailor their processes from organization's standards)

Level 2
Managed — Processes characterized for projects and is often reactive.

Level 1
Initial — Processes unpredictable, poorly controlled and reactive

(Source: Wikipedia)

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What is the OGC (Canada) Forum ?

- Member led and managed, approved by the global OGC community

- Open to non-members

- Provides OGC infrastructure and staff support to support regional/country based activities, and OGC's open, neutral, consensus based process

- The goals and objectives of regional organizations vary based on regional requirements. Example Activities;

  – Assist in capacity building in the region/country

  – Promote policies, cooperative business development initiatives and public/private partnerships that support the use of OGC standards.

  – Coordinate participation in the OGC,

  – Provide a platform for all stakeholders

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Global Forums

- Asia
- Australia and New Zealand
- **Canada**
- Europe
- France
- Iberian and Latin-American
- India
- Korea
- Middle East and North Africa
- Nordic
- **North American**
- UK & Ireland

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Example Activities – European Forum

Europe Forum

106th OGC Technical Committee
Orléans, France
Athina Trakas
20. March 2018

Agenda

- Short reports from other active fora in Europe
  - French Forum (Stephane Garcia, IGN)
  - UK & Ireland Forum (Andrew Hughes, BGS)
  - ILAF (Joan Maso, UAB)

- Overview of some EU funded projects
  - ESPRESSO - Smart Cities (Bart de Lathouwer, OGC)
  - DATABIO - Big Data (Ingo Simonis, OGC)
  - NextGEOSS – Disaster CDS (Marie-Francoise Voidrot, OGC)
  - H2020 Project LandSense (Andreas Matheus, secure dimensions)

- Input on statistics activities in the OGC
  - Statistic Ad hoc (Ian Coady, ONS) & Table Joining Service (Jari Reini, NLS)

- Update on INSPIRE (Michael Lutz, JRC)

- Update from ESA (Cristiano Lopes, ESA tbc)

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Example Activities – China Forum

Open Standards in Practice: An OGC China Forum Initiative

Peng Yue
Wuhan University
pyue@whu.edu.cn

How to make distributed data and numerous tools more **sharable** and **interoperable**, and work **collaboratively** across various organizations?

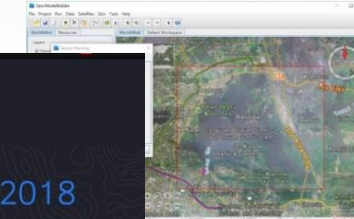| Organizations from China	abr.	OGC Members (Yes/No)
Wuhan University	WHU	Yes
National Geomatics Center of China	NGCC	No
Institute of Remote Sensing & Digital Earth, Chinese Academy of Sciences	RADI	Yes
Fuzhou University	FZU	Yes
Zhengzhou Institute of Surveying & Mapping	ZISM	Yes
Wuda Geo Information Engineering Technology Co. Ltd.	GEOSTAR	No

Open Standards

ANSWER
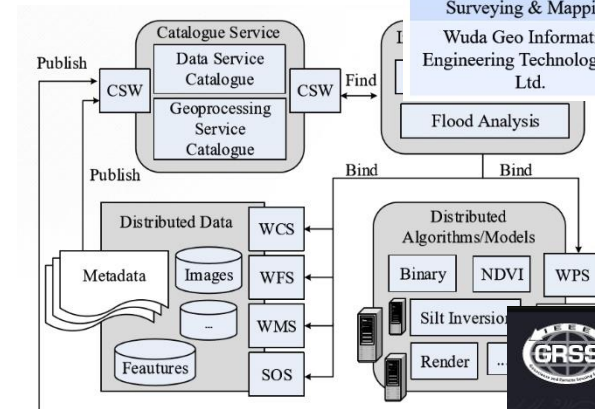
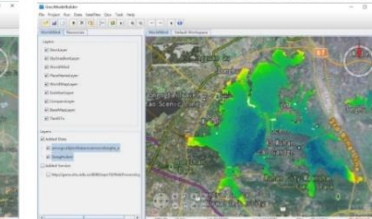Services provided by six organizations following standards
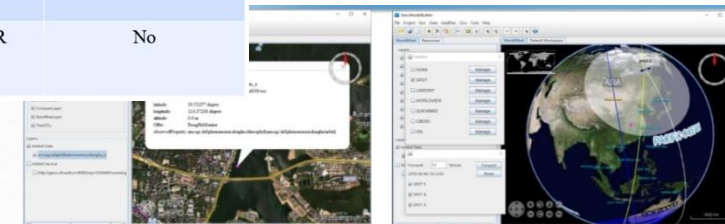
In-situ sensor visualization

Real-time simulation of satellites

BGDDS 2018

September 22 - September 23

Conference Center of Wuhan University

Wuhan, China

nic area selecting with angular marque

Data visualization

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What OGC Resources are Available ?

OGC Portal Project

Public Wiki

Plus OGC Staff Support
for Forum Activities

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Canada Forum - Background

- Created based on consultation with the Canadian community, beginning with a summit held in St. John's, Newfoundland and Labrador, in June of 2017.

- The community identified a series of high level requirements, agreed to create a Charter, which was formally approved by the global OGC membership in April of 2018.

- See this link for a copy of the approved Charter for the Canada Forum on Geospatial Standards, which provides more details on the purpose and structure of the Canada Forum.

- Informally Launched, June 2018, during OGC Meetings in Colorado

Graphic Summarizing the St. John's, 2017, Summit

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Canada Forum - Purpose

- **Collaboration and Consensus :** Inclusive - All stakeholders - people, technologies, policies, governance, market development

- **Issues:** Refine priority issues to guide innovative development in Canada through collective action.

- **Awareness:** Increase awareness of the benefits of using geospatial standards and technologies for all sectors, especially new and emerging sectors and markets

- **Value Chains:** Define value chains in various thematic domains (e.g. Survey and Mapping, Environmental Monitoring, Agriculture, Maritime, Energy and Utilities) and explore means to better <u>connect multiple communities of practice </u>to reduce duplications, increase efficiency and improve the return on investment,

- **Capacity :** Increase Canadian geomatics expertise and contribute to Canada's future geospatial capacities and market presence , globally

- **Remote Communities**: Empower remote Canadian communities through online collaborations.

- **Work Plan** (in process): Create a consensus based workplan Intended to ensure activities are attainable , do not require excessive new resources and are reflective of important issues to all sectors

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Charter Members

- AE Inc.
- CAE
- Computer Research Institute of Montreal (CRIM)
- Compusult Ltd.
- Cubewerx Inc.
- Ecere Corp.
- Environment and Climate Change Canada (ECCC)
- Esri Canada Ltd.
- Fisheries and Marine Institute (Memorial University of Newfoundland)
- Mohawk Council Kahnawake

- Mount Royal University
- Natural Resources Canada (NRCan)
- Internal Services Department - Geographic Information Services (Province of Nova Scotia)
- NewfoundView
- the PYXIS innovation
- SensorUP
- Teledyne CARIS
- Tesera Systems Inc.
- University of Calgary

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Structure

Co-chairs and Sector Focus

- Government/Indigenous
  - Cameron Wilson, NRCan, ON
  - Bradford Dean, Mohawk Council of Kahnawake, PQ
- Commercial
  - Aurelian Constantinescu, CAE Inc, PQ
  - Andy Hoggarth, Teledyne – CARIS, NB
- Research/Academic
  - Tom Landry, CRIM, PQ
- Facilitator
  - Trevor Taylor, OGC, ON

Meets a minimum of Monthly (First Wednesday of Every month)

Looking to expand the group to better represent regional requirements and the Academic Community

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Next Steps

- Formal Launch of the Forum
  - Indigenous Mapping Workshop, Montreal
  - CCOG /SDI Summit
  - GeoAlberta
  - Geomatics Atlantic
  - Réseau Québec maritime

- Work Plan Development – Needs Your Input !
  - Looking to identify common issues, potential activities that cross cut sectors

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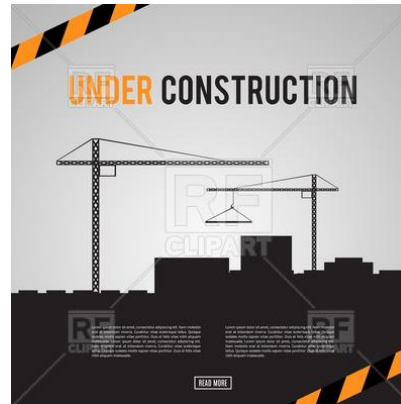
Spatial Data Infrastructures (SDI) and standards

- Canadian Geospatial Data Infrastructure (CGDI)
- Standards facilitate the development, sharing, and use of *geospatial data.*
- Data and metadata standards
- Standards
  - Semantics
  - Syntax
  - Services

SDI Drivers

Improved Technology –

- Faster internet
- Expanded access
- Improved reliability
- Big data and big (cloud) computing

New Applications –

- Digital government
- Improved GUI (ease of use)
- Growing user base
- Increased use in traditional industry sectors
- Increased uptake in non-traditional industry sectors

Viewer Apps

Social Media

Story Maps

Dashboards

Business Apps

Design Apps

Field Apps

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SDI Progression
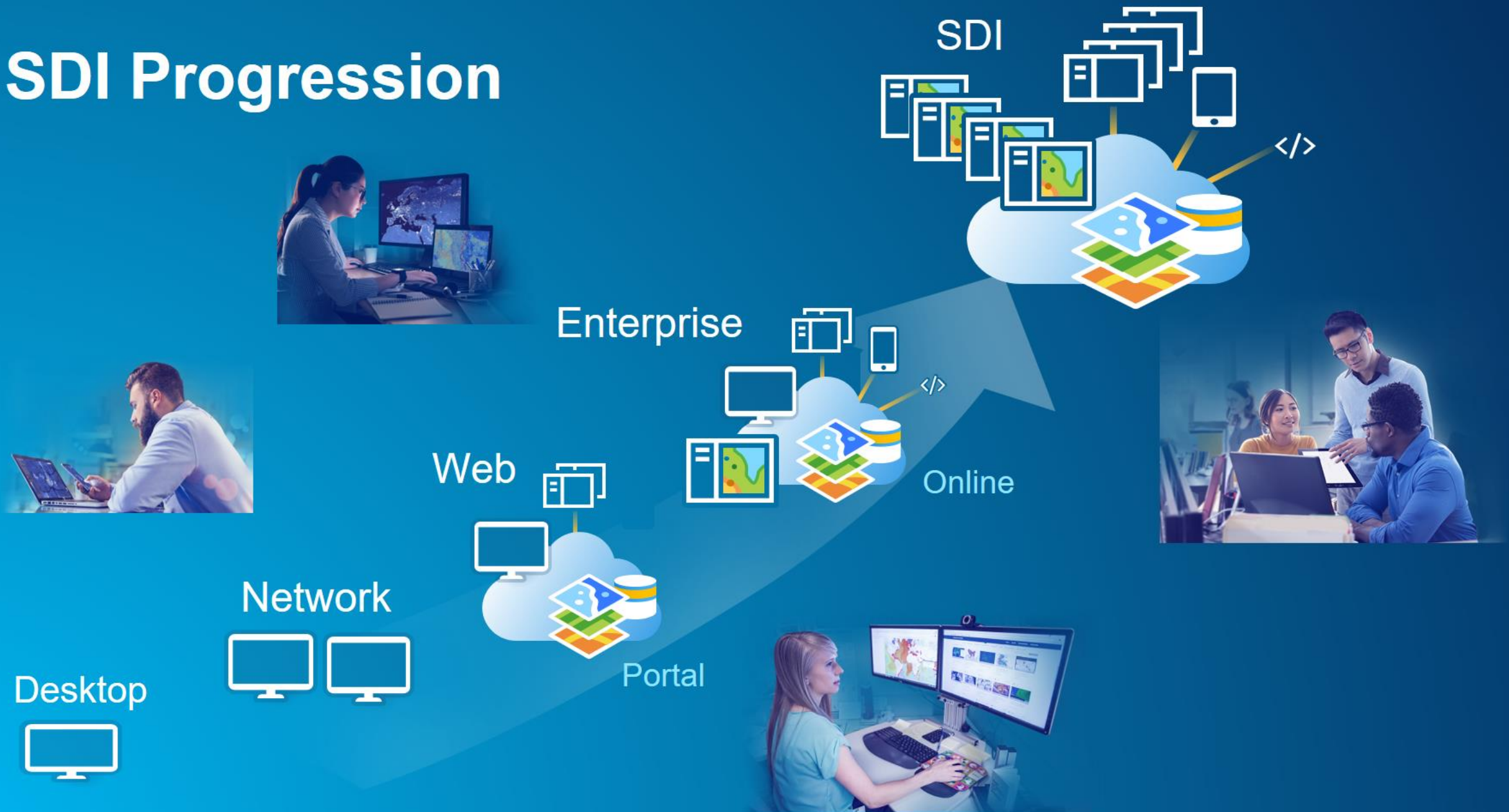
SDI Components

Component	Desktop	Network	Web	Enterprise	SDI
Data	✓	✓	✓	✓	✓
• Network		✓	✓	✓	✓
• Software	✓	✓	✓	✓	✓
• Server			✓	✓	✓
Policies			(✓)	✓	✓
Applications	✓	✓	✓	✓	✓
Governance				✓	✓
Standards			(✓)	✓	✓
Users	Internal	Internal	External	Internal /External	Internal /External

Patterns of Use

Mapping & Visualization

Understand locations and relationships with maps and visual representations

Data Management

Collect, organize, and maintain accurate locations and details about assets and resources

Field Mobility

Manage and enable a mobile workforce to collect and access information in the field

Monitoring

Track, manage, and monitor assets and resources in real-time

Analytics

Discover, quantify, and predict trends and patterns to improve outcomes

Design & Planning

Evaluate alternative solutions and create optimal designs

Decision Support
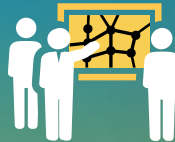
Gain situational awareness, and enable information-driven decision making

Constituent Engagement

Communicate and collaborate with citizens and external communities of interest

Sharing & Collaboration

Empower everyone to easily discover, use, make, and share geographic information

GFX Data Providers, Aggregators, End Users

GFX Data Providers

- Federal
- Provincial
- Municipal

GeoFoundation Exchange

GeoFoundation Exchange

Aggregators

- Federal
- Provincial
- COMMUNITY MAP of CANADA

End Users

Open and Interoperable

Open Standards and Formats

XLSForm GML SQL SLD SOAP WMTS KML LAS Shapefiles REST
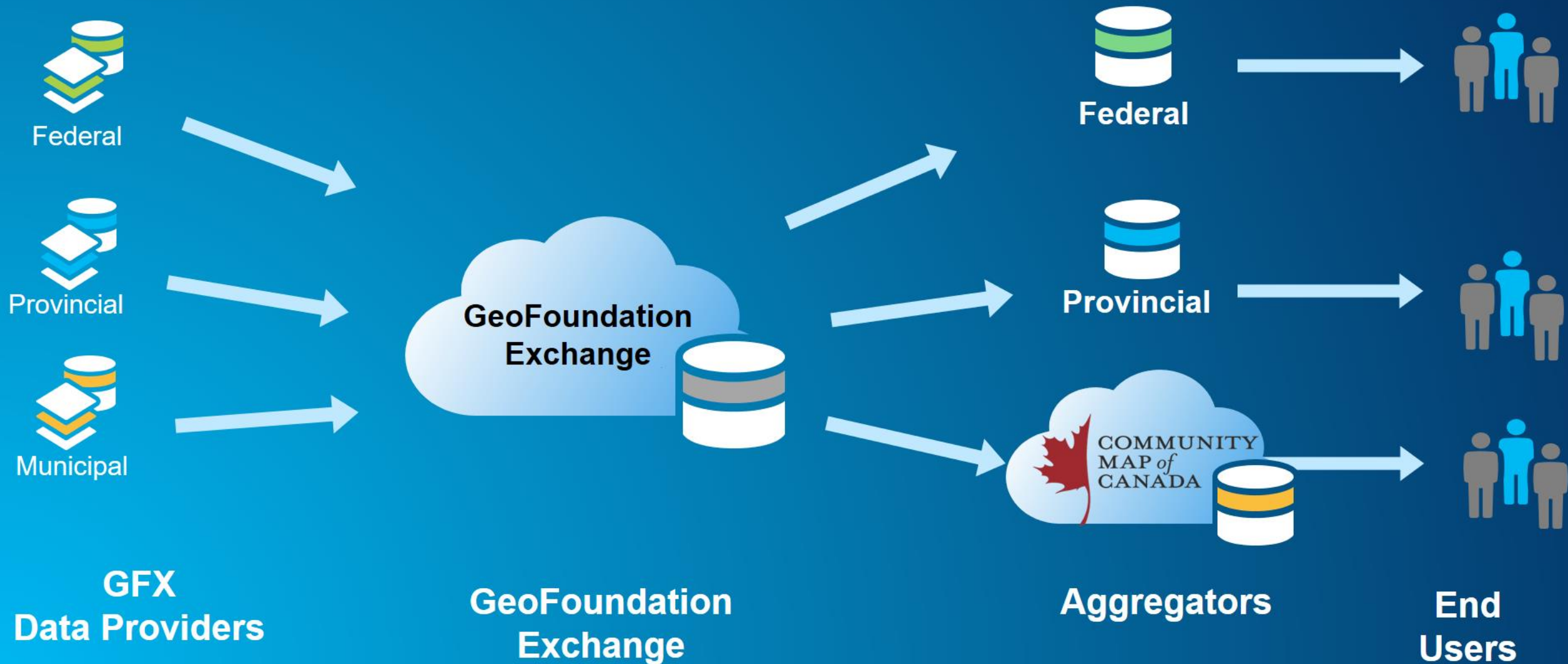
IMDF WCS Web Scene LERC CSW WPS OneGeology IFC
(I3S) JSON GeoPackage

WFS WMS OPeNDAP WaterML netCDF INSPIRE CityGML

OGC Certifications

Direct Product Integration

MS Office SQL SharePoint Jupyter Azure Power BI SAP
Server Notebook HANA

Adobe Python
Creative Oracle Teradata
Cloud AWS R Hadoop AutoCAD Revit PostgreSQL

Open Software Architecture

Open Data Open APIs & Open-Source
Access SDKs Integration
Open-Source Extensible
Contributions Architecture Embeddable

*. . . Successfully
Integrated Into Thousands
of Systems*

Why is Canada Forum Relevant to GeoAlberta?

- Increase collaboration
- Canadian requirements
- Sharing geospatial data
- Capacity building
- Innovation
- Outreach
- Business development
- Canadian influence on standards

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How Do I get Involved ?

- Contact the Chairs/Facilitator Sign up for the Forum Mailing list https://lists.opengeospatial.org/mailman/listinfo/canada.forum

- Comment and edit on the on-going Plan

- Volunteer to join the chairs

- Plan to attend a Forum Event in 2019 (Date, location, TBD)

- Contribute ideas

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Thank you!

- Gordon Plunkett (gplunkett@esri.ca)
- Trevor Taylor (ttaylor@opengeospatial.org)
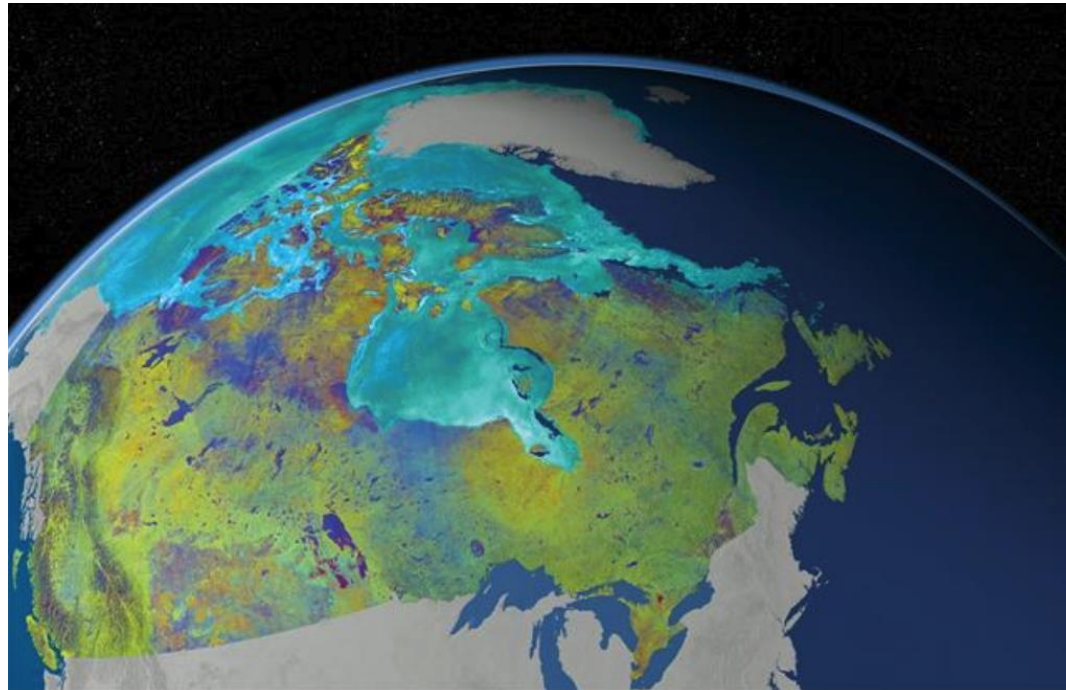
"This is a Mosaic of Canada which is made from 121 images captured by Canadian satellite RADARSAT-2. These images were acquired from May 1, 2013 to June 1, 2013. The color variation represents the changes in soil texture, roughness and the level of soil moisture." (Credit: RADARSAT-2 Data and Products © MacDonald, Dettwiler and Associates Ltd., 2014. In collaboration with the Canadian Ice Service. All Rights Reserved. RADARSAT is an official mark of the Canadian Space Agency.)

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