



Environment
Canada

Environnement
Canada

Canada

OGC Standards Implementations at Meteorological Service of Canada (MSC)

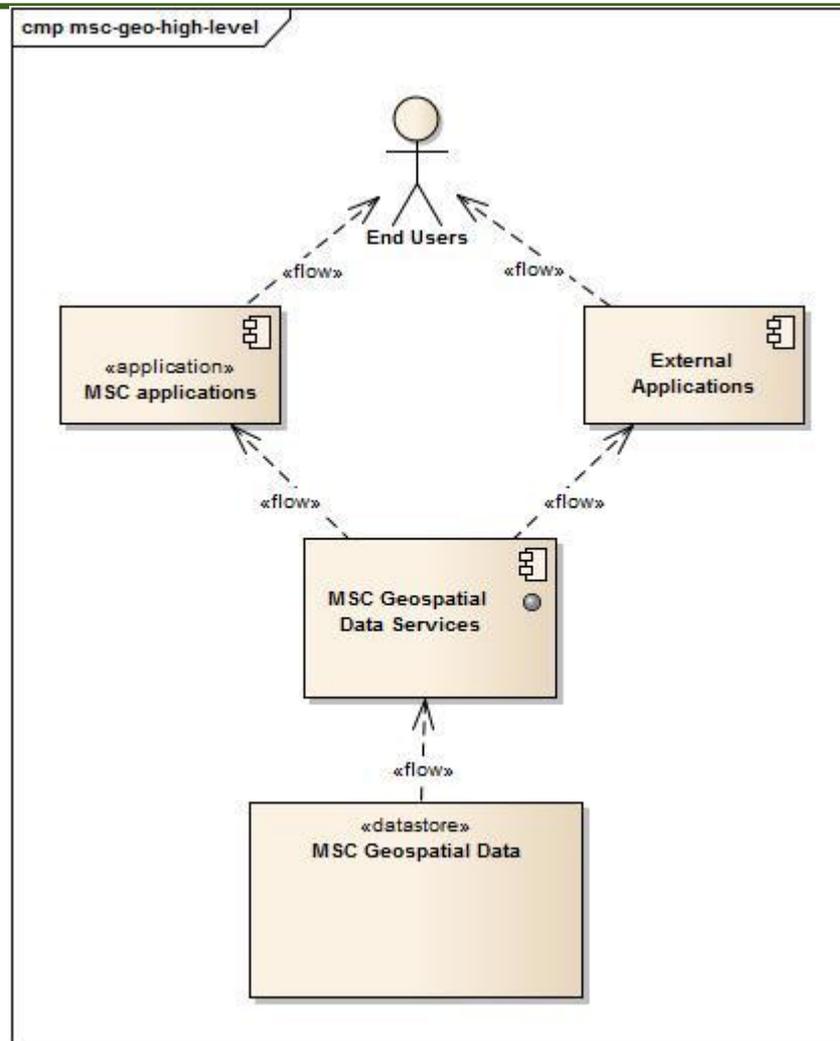
Tom Kralidis
Meteorological Service of Canada
4th Workshop on the use of GIS/OGC standards in meteorology
Reading, UK
4 – 6 March 2013

MSC's Geospatial Strategy

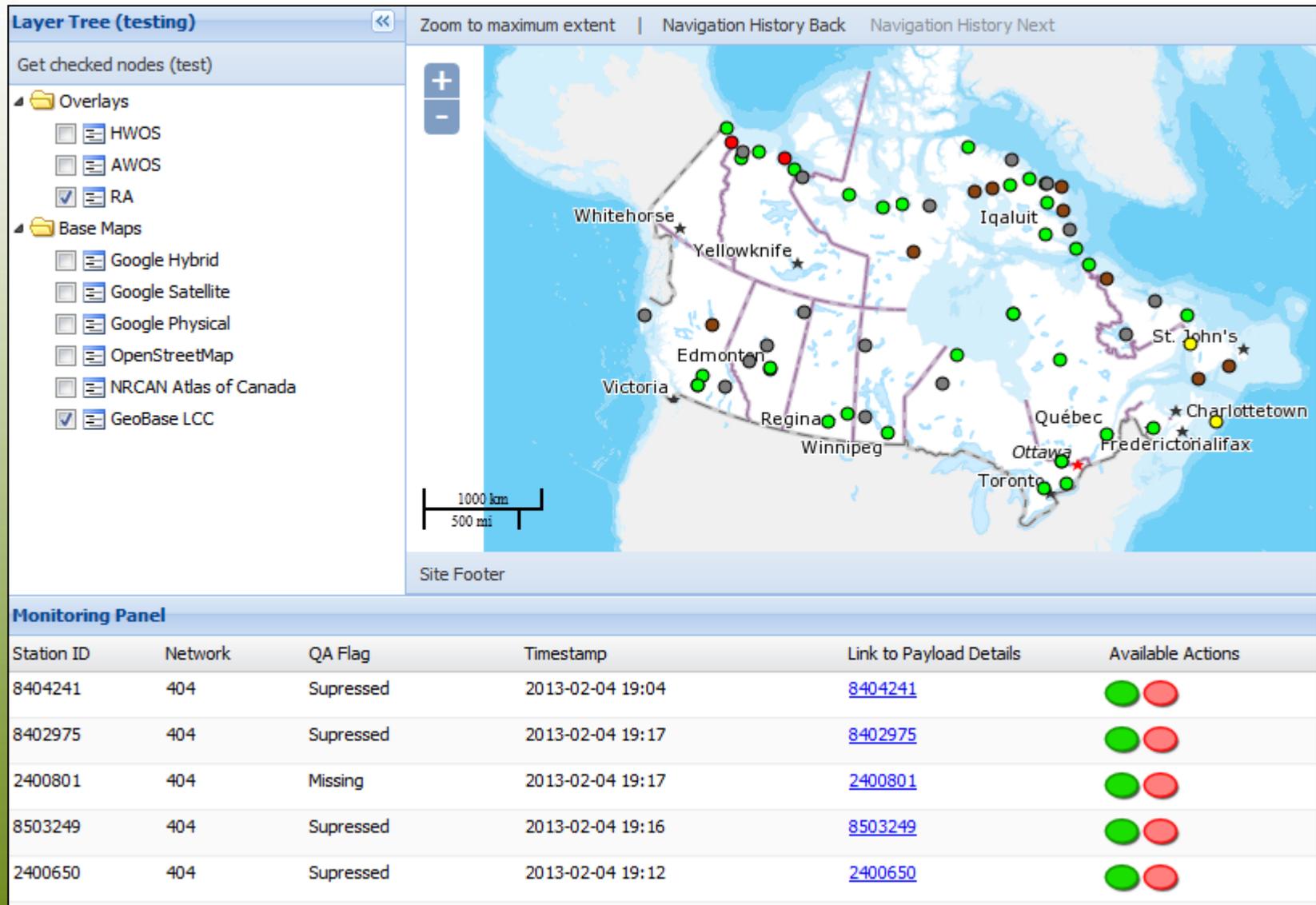
- Vision: *"All MSC data and products are geospatially enabled to improve the utility and effectiveness of MSC's services."*
- Geospatial vital to delivery of MSC's mandate and strategic outcomes of the Government of Canada:
 - *Canadians are equipped to make informed decisions on changing weather, water and climate conditions*
- MSC's ADM David Grimes is current president of WMO
- Alignment with other activities / infrastructures:
 - Canadian Geospatial Data Infrastructure (CGDI)
 - Federal Committee on Geomatics and Earth Observation (FCGEO)

Phases

- Foundation
- Pilot Projects
- Major Projects / External Services



Data Quality Dashboard



Canadian Atmospheric Data Discovery Portal (CADD)

The screenshot shows the CADD Portal interface. At the top, there is a navigation bar with the Government of Canada logo and text in both English and French, along with links for 'Canada.gc.ca', 'Services', 'Departments', and 'Franç'. The main header area features the title 'Canadian Atmospheric Data Discovery Portal' and a large red maple leaf graphic. A search bar on the right contains the text 'polar' and a 'Search' button. Below the search bar is a navigation menu with 'CADD Portal', 'Search', 'Register Atmospheric Data Network', and 'Help'. The main content area is titled 'Listing for polar' and shows '4 results found'. The first result is for 'ERS-1 and ERS-2 SAR Data over Canada', with a brief description and source information. Below this is a table with two rows: 'Abstract' and 'Links'. The 'Abstract' row contains a detailed description of the SAR data. The 'Links' row contains two URLs: <http://ceocat.cct.mcan.gc.ca> and <http://ceocat.ccrs.nrcan.gc.ca>. There is also a 'Locations' row which is partially visible.

Government of Canada / Gouvernement du Canada | Canada.gc.ca | Services | Departments | Français

Canadian Atmospheric Data Discovery Portal

Search: polar

CADD Portal | Search | Register Atmospheric Data Network | Help

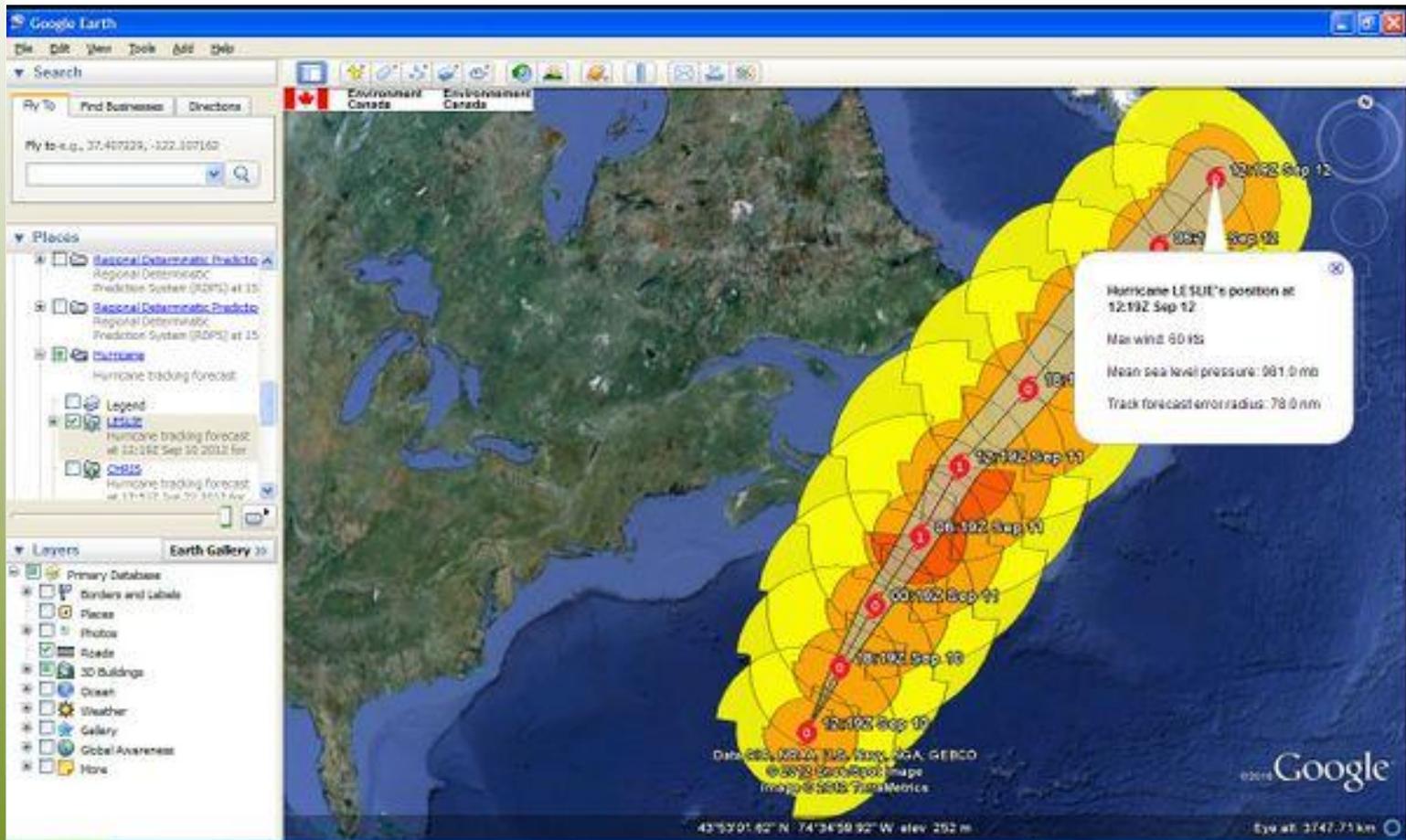
Listing for polar

>1<
4 results found.

▼ **ERS-1 and ERS-2 SAR Data over Canada**
The European Space Agency ERS-1 satellite was launched on July 17, 1991 with a projected lifespan of two to three years. CCRS ...
Source: Government of Canada, Natural Resources Canada, Canada Centre for Remote Sensing

Abstract	The European Space Agency ERS-1 satellite was launched on July 17, 1991 with a projected lifespan of two to three years. CCRS began reception of its successor, ERS-2, on July 9, 1995 and CCRS is still receiving data. Canada is a full participant in the ERS-1 program and is part of the ESA network of receiving and processing stations. This data set contains SAR high-resolution imagery, acquired by the ERS-1 Active Microwave Instrument (AMI). The scenes, for both ERS-1 and ERS-2, are 100 km in width, and are imaged by a 10 m long x 1 m wide antenna aligned parallel with the satellite orbit. The radar operates at a frequency of 5.3 GHz (C-Band), VV polarisation, and has a mid-swath incidence angle of 23 deg. in normal operation. However, the satellite has a 'roll tilt' capability which makes it possible to operate at 35 degree incidence angle on an experimental basis. Power considerations limit operating times to a maximum of 12 minutes per orbit. The data rate of 105 Mbit/s is too high to...
Links	<ul style="list-style-type: none">• http://ceocat.cct.mcan.gc.ca• http://ceocat.ccrs.nrcan.gc.ca
Locations	

GeoMet



WIS DCPC (pending approval)

- Metadata: ISO WMO Core Metadata profile
 - Client specific output (crosswalk of other ISO profiles)
- Catalogue:
 - CSW
 - SRU
 - OAI-PMH

```
xmlns:metadata xmlns:gmd="http://www.isotc211.org/2005/gmd"
xmlns:goo="http://www.isotc211.org/2005/goo"
xmlns:gml="http://www.opengis.net/gml"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.isotc211.org/2005/gmd http://www.isotc211.org/2005/gmd/gmd.xsd http
:gmd:fileIdentifier
  <goo:CharacterStringurn:x-smo:md:ca.gc.ec:1.1.1.1</goo:CharacterString>
/gmd:fileIdentifier
:gmd:language
  <goo:CharacterString>eng: CAN</goo:CharacterString>
/gmd:language
:gmd:characterSet
  <gmd:MD_CharacterSetCode odelList="http://www.isotc211.org/2005/resources/Codelist/gmxCodeLists.xml#MD_Charac
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/gmd:characterSet
:gmd:hierarchyLevel
  <gmd:MD_ScopeCode odelList="http://www.isotc211.org/2005/resources/Codelist/gmxCodeLists.xml#MD_ScopeCode"
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:gmd:contact
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  <gmd:individualName>
  <goo:CharacterString>National Inquiry</goo:CharacterString>
  </gmd:individualName>
  <gmd:organisationName>
  <goo:CharacterString>Environment Canada, Meteorological Service of Canada</goo:CharacterString>
  </gmd:organisationName>
  <gmd:positionName>
  <goo:CharacterString>National Inquiry Response Team</goo:CharacterString>
  </gmd:positionName>
  <gmd:contactInfo>
  <gmd:CI_Contact>
  <gmd:phone>
```



World Ozone and Ultraviolet Radiation Data Centre (WOUDC)

- GAW WDC circa 1962
- Ozone, UV
- <http://woudc.org/>
- Next generation web presence
- Government of Canada look and feel compliance
- Data Services tier to deploy OWS endpoints and OM based payloads
- October 2013

OGC Climatology / Hydrology Information Sharing Pilot (CHISP-1)

- EC, NRCan, US EPA , USGS
- Cross border scenarios / use cases
- Hydrological modelling
- Modelling and assessment of nutrient flux
 - Water quality data integration
- EC Hydrometric observations WaterML 2.0
- <http://www.opengeospatial.org/node/1661>

MSC Data Management System

- Authoritative line of business meteorological data management framework
 - Surface Weather
 - Aviation
 - Marine
 - Satellite
- ~500GB / month
- Ingest, decode, QA, product generation of met data for Canadian public, WMO and beyond
- 24 x 7 mission critical requirement

MSC Data Management System

- Application Schemas
 - Observations
 - Forecasts
 - Alerts
- Based on OM 1.0.0

```
<om:ObservationCollection>
- <om:member>
- <om:Observation>
- <om:metadata>
- <cat>
- <general>
  <author name="MSC-DMS-Quality-Assessment" version="2.0"/>
  <dataset name="nav_canada_observation_atmospheric_surface_weather/awos-2.0-binary"/>
  <phase name="decoded_qa_full-xml-2.0"/>
  <id xlink:href="data/nav_canada_observation_atmospheric_surface_weather/awos-2.0-binary/decoded_qa_full-xml-2.0/201302212100/7094636/cynn/orig/level_1"/>
  <parent xlink:href="data/nav_canada_observation_atmospheric_surface_weather/awos-2.0-binary/decoded-xml-2.0/201302212100/7094636/cynn/orig"/>
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+ <identification-elements><identification-elements>
+ <id>
+ <om:metadata>
- <om:samplingTime>
- <gml:TimeInstant>
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- <gml:TimeInstant>
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- <om:resultTime>
- <gml:TimeInstant>
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- <om:procedure xlink:href="station/icao_cynn"/>
- <om:observedProperty gml:remoteSchema="schema/point-observation/2.0.xsd"/>
- <om:featuresOfInterest>
- <gml:FeatureCollection>
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  <gml:pos>49.75 -77.8</gml:pos>
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  <om:featuresOfInterest>
- <om:result>
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  <elements>
  <element group="pressure" name="station_pressure" orig-name="010004" uom="Pa" value="MSNG"/>

```

MSC Data Management System

Thank you!

tom.kralidis@ec.gc.ca