

Mark Williamson-- Earth Sciences Sector



CANADA'S NATURAL RESOURCES

NOW AND FOR THE FUTURE

www.nrcan.gc.ca



Natural Resources
Canada

Ressources naturelles
Canada

Canada 



CCGKGKNCGMSGKNCK



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Canada



CCGK--Consolidating Canada's Geoscience Knowledge

CGKN--Canada's Geoscience Knowledge Network

CGMS--Cooperative Geological Mapping Strategies

CCCCA--Canadian Centre for Constructing Confusing Acronyms





CCGK--

Consolidating Canada's Geoscience Knowledge

..a Program of the Earth Sciences Sector

..80 FTEs working in all GSC Divisions---coast to coast--

..other GSC Programs

*Ocean Management;
Northern Resource Dvl.
Groundwater;
Gas Hydrates;
Metals in the Env.;
Climate Change;
Natural Hazards;
Legislated resource assessments*

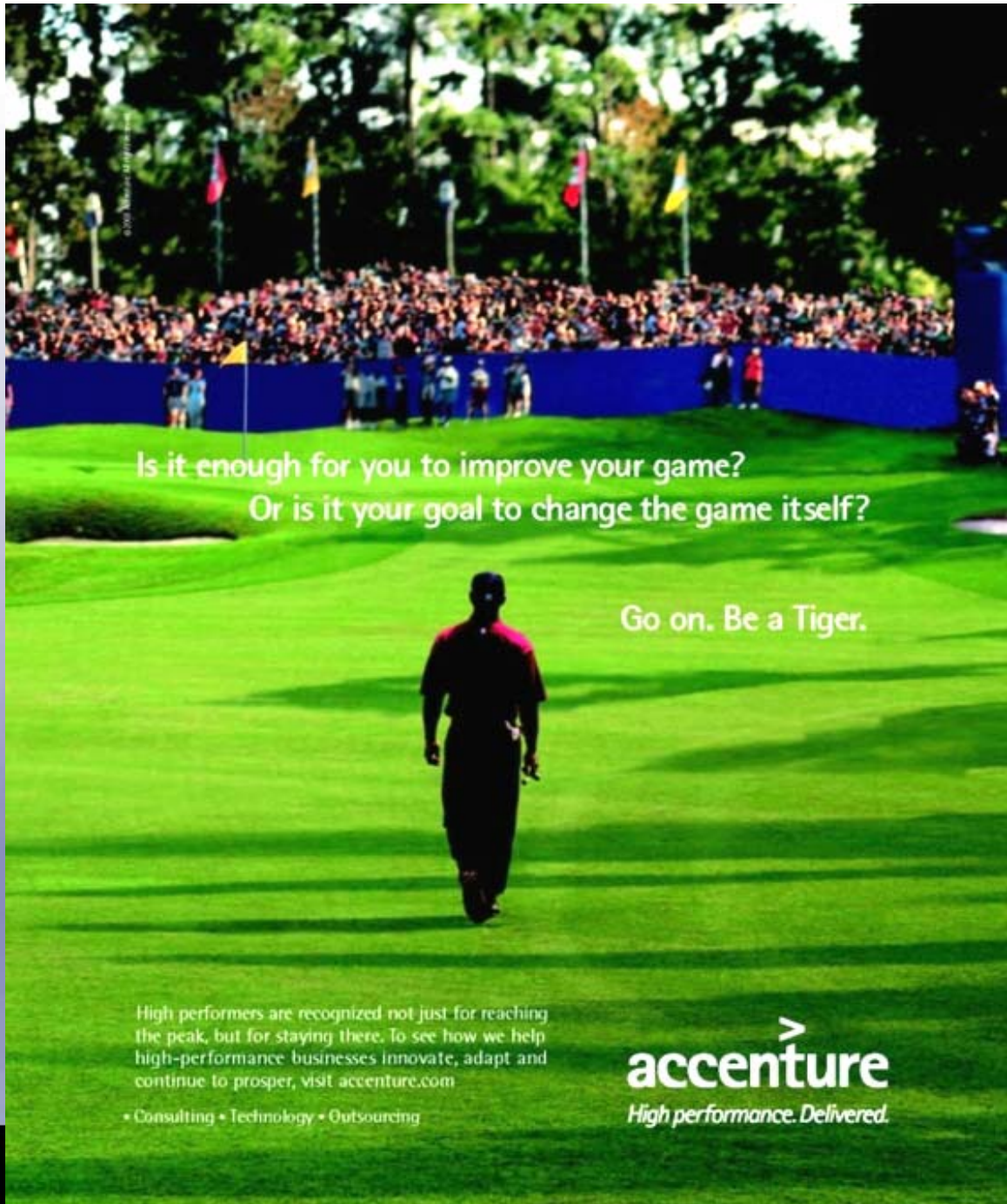
**CGMS---Cooperative Geological Mapping Strategies
..implementation plan...**

GDR---Geoscience Data Repository--Information Services

Energy and Mineral geoscience ---major syntheses

Targeted Geoscience Initiative II





Is it enough for you to improve your game?
Or is it your goal to change the game itself?

Go on. Be a Tiger.

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Is it enough to improve our game?

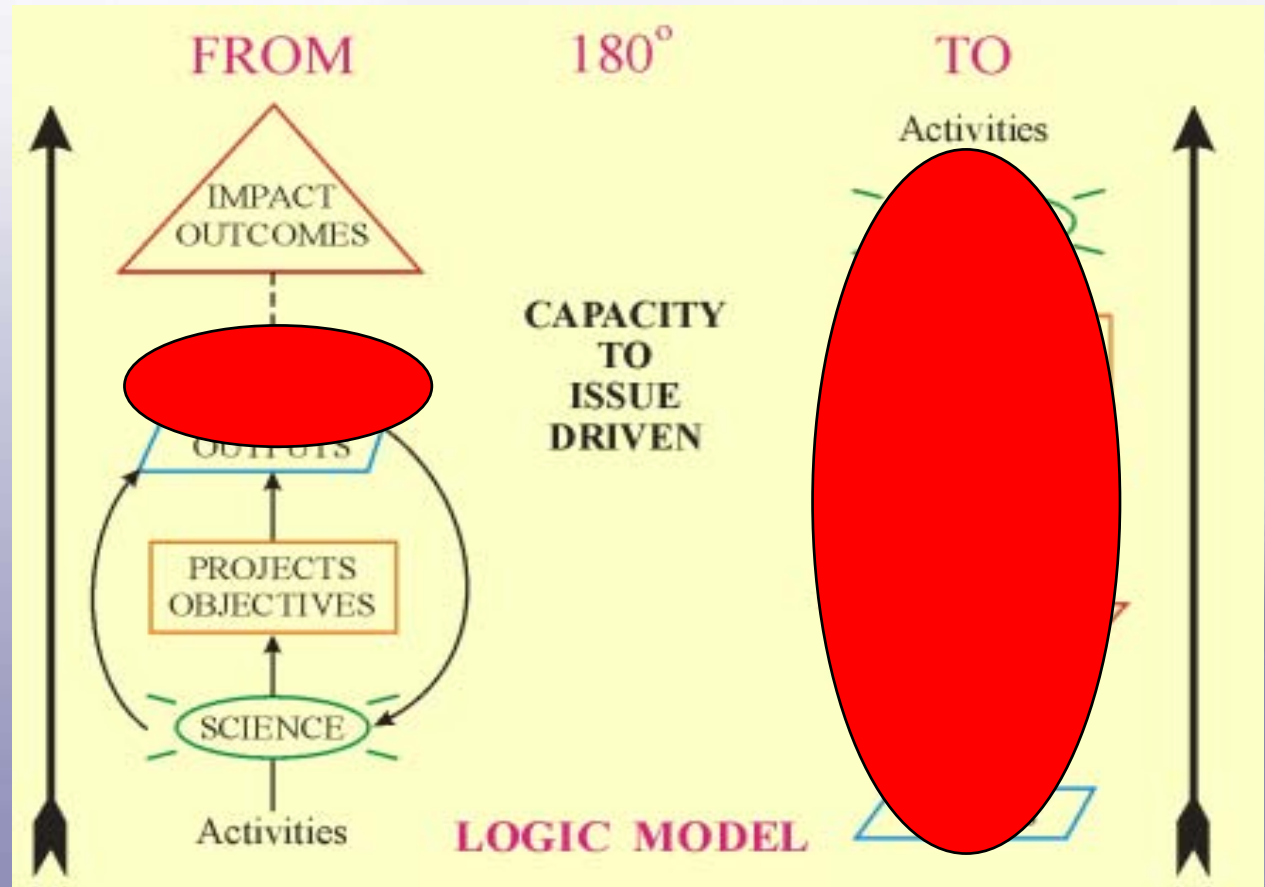
Or are we about changing the game?

*ESS S&T Programs
&
CCGK...
--changing the game...*

Canada



Geoscience Information Management



...from the end to the beginning, the end
and everything in between....





..are you/we relevant.....

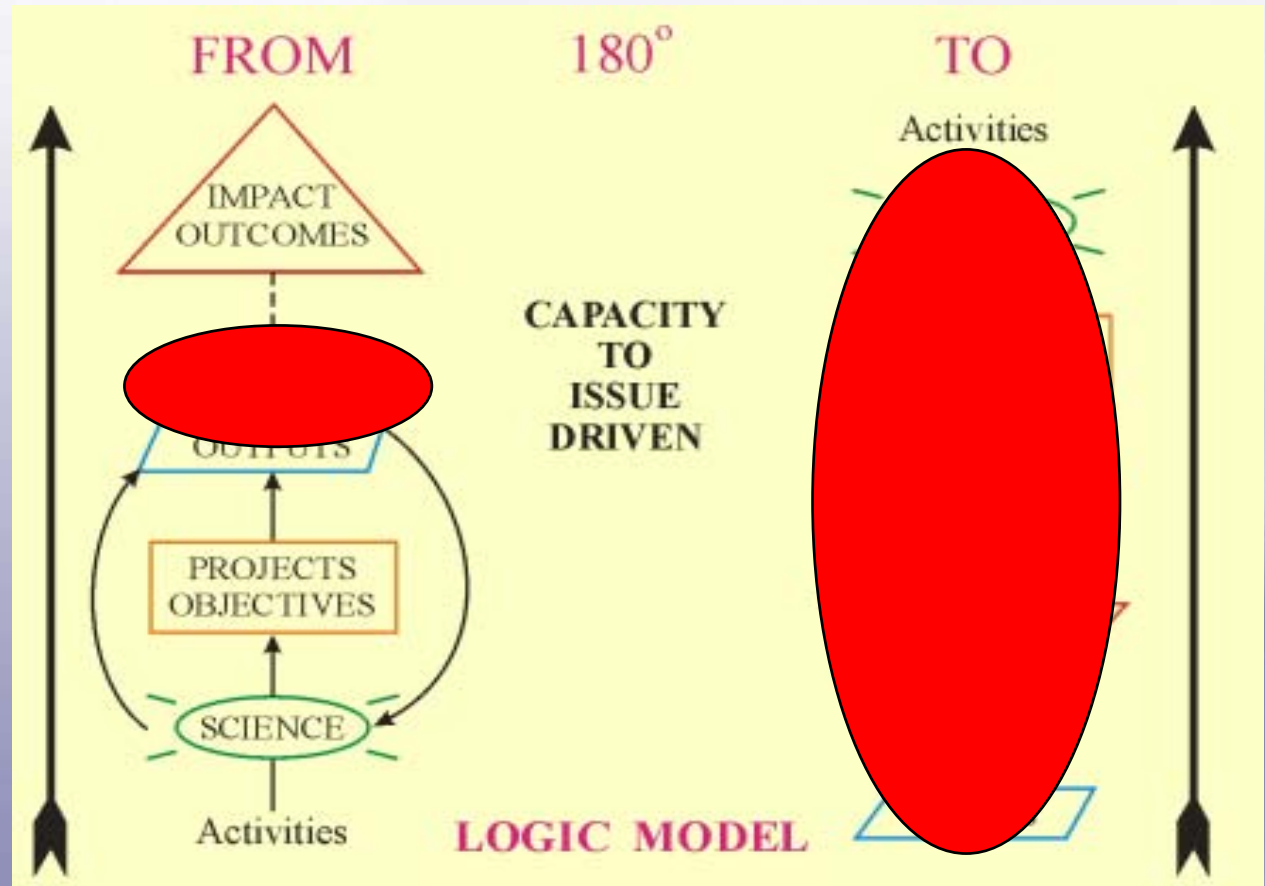
- **Clean Environment**
- **Strong and Safe communities**
- **Aboriginal Peoples**
- **Development of the North**
- **Sustainable Development of Natural Resources**
- **Connecting Canadians**

Its about the ...quality of life....





Geoscience Information Management



...from the end to the beginning, the end
and everything in between....





Data
Information
Knowledge

From :

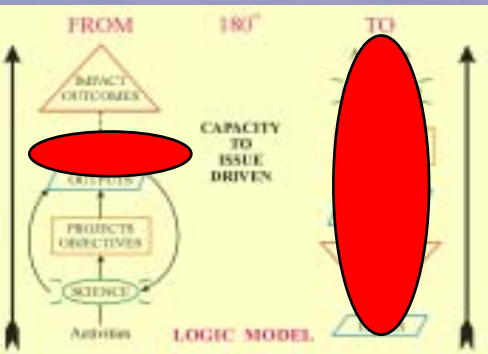
- Individual interest--
- Data management an afterthought
- Individual ownership
- A problem to deal with
- An S&T bi-product
- Vertical availability

To:

- Corporate responsibility
- Pre-requisite project plan
- Corporately Owned
- An asset to manage
- An essential outcome

- Static
- Restricted
- Serving traditional clients
- Paper--analog

- Horizontal
- Dynamic
- Shared
- New and emerging
- Digital





Geoscience IM Challenges---

- **complexity and diversity of geoscience data**
- **from individual to corporate ownership---culture shift**
- **lack of robust tools to support emerging OGC standards**
- **getting the scientists onboard**
- **current “product” orientation--- culture**
- **bewildering array of international standards to consider**
- **conflicting requirements and reporting structures**
- **communication communication and communication**
- **consistent senior management support**
- **consistent mid-management engagement**





Organizational.....

- from individual to corporate ownership---culture shift
- getting the scientists onboard
- **A consistent information management system & authority**
- current “product” orientation--- culture
- **conflicting requirements and reporting structures**
- consistent senior management support
- consistent mid-management engagement





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CGMS---C

GDR---Ge

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GOM

NRD

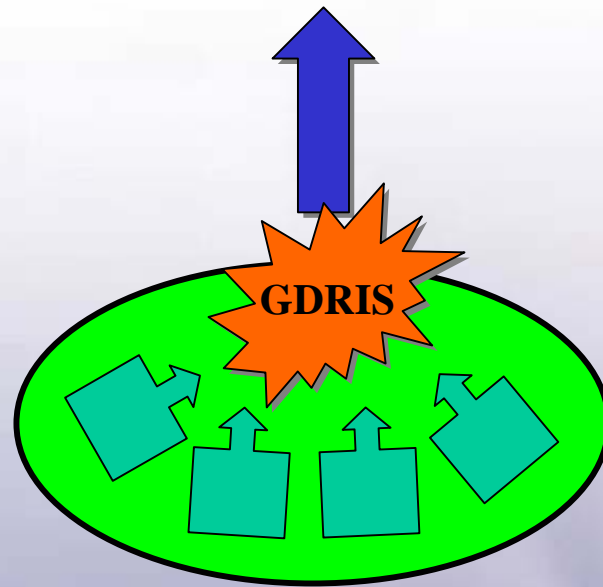
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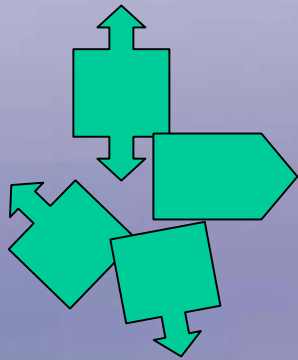
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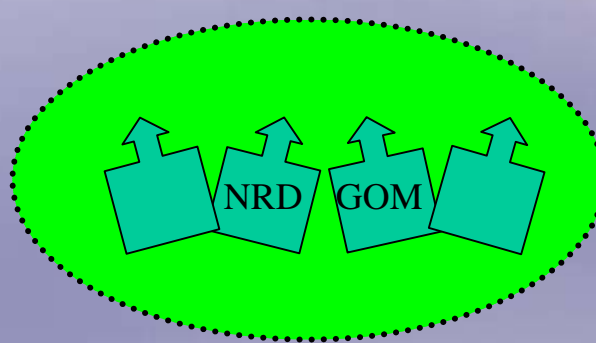




--one year from now

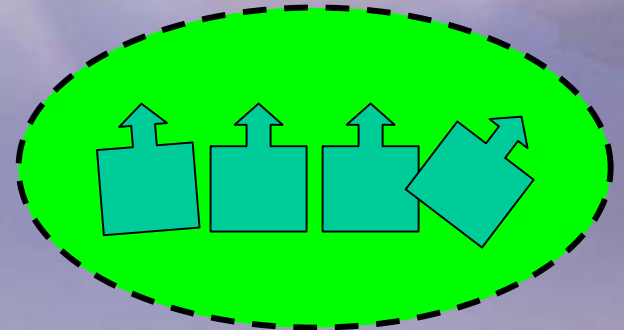


3 + years ago



Program IM Plans

1 year ago



Revised for synergies

..now..





What CCGK Contributes (IM/GDR)...

- **Analysis of content and accessibility gaps**
- **Development and establishment of standards**
- **Establishment of standard databases, tools and services for ESS geoscience IM**
- **Geoscience Data Repository Information System for ESS**
- **Create and push for inter-Program IM synergies**
- **Assess and recommend options for post CCGK geoscience Information management responsibilities**
- **A “home” for CGKN and coordinate ESS participation in CGKN**
- **Contribute and lead development of CGKN standards**





NGSC sanctioned CGKN activities in CCGK

-user interface-data catalog
-meta data and web services
-CGKN communication..
-this workshop

CCGK activities pertinent to CGKN

- ...suite of 5 GDR projects
- ...lexicon
- ...mineral deposits
- ...bedrock & surficial geology
- ...geochemistry
- ... geophysics & lithoprobe ???





March 2005--- *a snapshot....*



--A central portal to discover the information held within GDR databases and to direct clients to GDR applications and services.



--National Aeromagnetic Database - free on-line viewing and download of gridded datasets - Web mapping & Z39.50 services.



--National Gravity Database - free on-line viewing and download of gridded datasets - Web mapping & Z39.50 services.



--National Radiometric Database - free on-line viewing and download of gridded datasets Web mapping & Z39.50 services.



--Access to Lithoprobe holdings. - Z39.50 services





March 2005 ...*a snapshot*

--Mirage - over 4000 geoscience map images available on-line for viewing and free download - Z39.50 service.



--On-line access to rock properties database

--On-line internal publishing process for sign-off and metadata capture.

--On-line web access to consolidated energy data and information in BASIN and SWELLS and Coal inventory.

--On-line access to a database of well-studied Canadian deposits including information on deposit size range, quality, development footprints and life-span.





March 2005 ...*a snapshot*

- A seamless CGKN view of provincial/territorial databases of mineral deposits and occurrences for online discovery and interoperable access.
- Working version of Field Sample Data Capture Software (Quaternary)
Working version of Field Sample Data Capture Software (Bedrock)
Working version of LIMS field sample tracking system
Working version of field sample curatorial system.
- On line, Digital, spatially referenced indexes of bedrock and surficial geological maps published by the Geological Survey of Canada that will be searchable by author, scale, publication data, NTS sheet, geographic region, and a comprehensive indicators of the amount of information on each map.





March 2005 ...*a snapshot*

- On line digital, spatially referenced index of the major Paleontological publications by the Geological Survey of Canada, --index will be searchable by author, publication data, NTS sheet, geographic region**
- An on-line lexicon of Canadian geological units, compiled as a database from published and unpublished sources through the Canadian Geoscience Knowledge Network web site www.CGKN.net. <<http://www.CGKN.net>.>**
- Canadian Geochronological knowledgebase, about 95% complete for Canada**
- Canadian Paleontological knowledgebase, for selected areas of Canada where other Programs require this information**

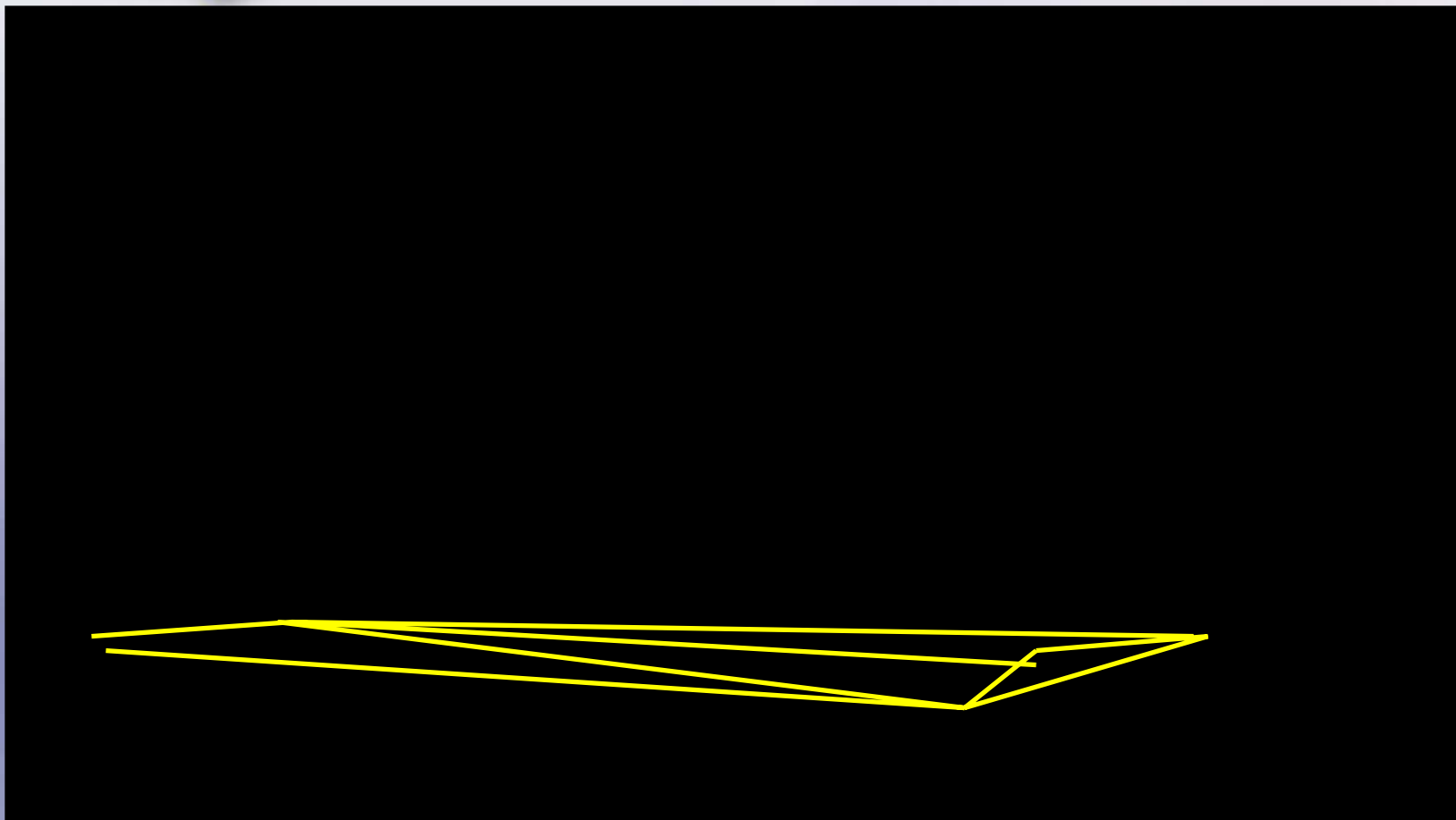
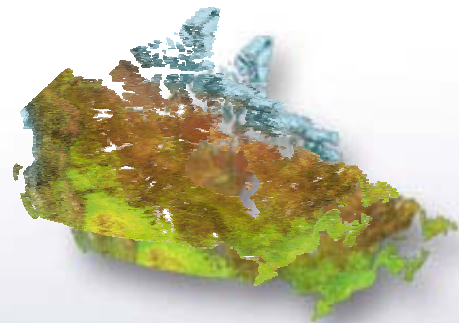




March 2005 ...*a snapshot*

- Extensive use by other Programs (such as GOM, NRD) of the GDR framework and capabilities to deliver maps and information sets**
- Recommendations to GSC and SMT on the preferred options for ongoing development, operation and maintenance of the GDR as a multi-program IM tool and service.**
- Recommendations for ensuring ongoing Programs deliver consistently to GDR specs.**
- Comprehensive review and recommendations of energy and mineral legacy data issues and priorities.**



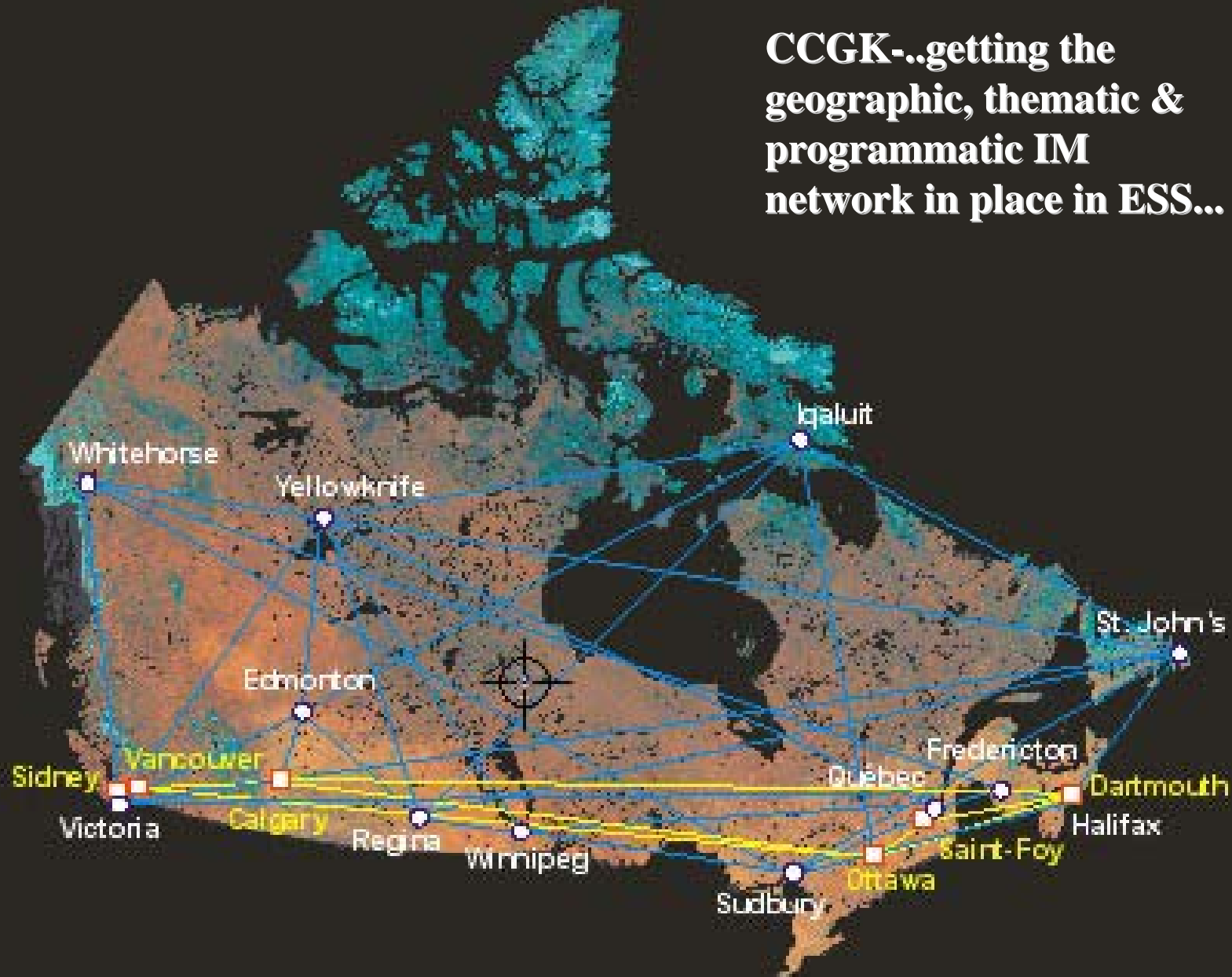



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**CCGK-..getting the
geographic, thematic &
programmatic IM
network in place in ESS...**






Cooperative Geological Mapping Strategies Across Canada

CGMS

.... CGMS---- a ten year vision statement by the National Geological Surveys Committee (NGSC) that focuses on the continuing need for reliable public geoscience knowledge.....a key competitive advantage essential to maintain Canada as a pre-eminent global destination for exploration investment in the mineral and energy sectors.....

....predicated on new re-investments in public geoscience by both levels of government....





Cooperative Geological Mapping Strategies Across Canada

PRIORITIES----

CGMS

- define federal vision and role in CGMS
- develop a co-authored NGSC 10 year implementation plan
- communicate and market CGMS to decision makers and stakeholders
- implement CGMS as a Canada-wide, structured and coordinated public geoscience initiative involving innovative partnerships with other government departments, industry and academia.





CCGK--CGMS--CGKN--TGI--GDRIS--IGA--NGSC--

.....

- Increasingly standardized approach to delivery of Canadian geoscience data whilst preserving jurisdictional integrities.
- Establishment of Canadian standards (CGKN) for geoscience data.
- Fact based socio-economic decision making..
- A changing geoscience culture that places increased importance on knowledge accessibility.
- Improved tools for existing and non-traditional users to:--
keywords-- discover, evaluate, access timely, integrate





What we have learned ...

- Geoscience web sites must be more client-focused and “low friction”.
- A consistent information management system must underlie web delivery systems.
- Standards are essential (but standards are NOT the product)
- IM/IT experts cannot do it alone, geoscientists must become involved and managers must be committed.
- There are major benefits to co-operative development (national & international, government & private sector).





Key Messages:

CCGK---CGKN---CGMS

ESS transforming to an “Information” organization

Several technical, organizational and cultural challenges

CCGK yr 2 of 2 --- an initial investment to these changes—



When faced with new questions,
do you reply with old answers, or new ones?

Go on. Be a Tiger.

**...when faced with new
questions....**

old answers or new ones??

ESS S&T Programs

&

Consolidating Canada's Geoscience Knowledge

&

Cooperative Geological Mapping Strategies

CGMS

...is about new answers...

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isn't the most obvious. To see how we can harness
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..the new questions

--Changing needs of Government

- S&T is becoming more important to Policy
- Changing role of government--- more focused - less active
- less resources
- Governments need solutions & advice
- Increased scrutiny - high expectations
- Need for reliable, independent, objective advice on science issues increasing
- What worked before does not work now ---Institutions under threat

-from CSA workshop 2003.





..are you/we relevant.....

- **Clean Environment**
- **Strong and Safe communities**
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Its about the ...quality of life....





..Requires a different approach to where, how, when, why and with whom the ESS works..

- Redefinition of “partnerships” in science delivery with Provinces, Territories, industry and academia
- Broader utility of geoscience data and information through comprehensive and efficient on-line access...
- Driven by a –socio-geoscience agenda—priorities set by where the community, economic, social, environmental..impact will be greatest.



CGKN Draft Architecture

- Distributed model
- Dynamic data translation
- Custom applications support
- Custom data download
- Interoperable with CGDI and other common services

