COORDINATING GEOMATICS IN THE GOVERNMENT OF CANADA

Federal Geomatics Strategy and Policy Framework

Approved Version 1.0

The Inter-Agency Committee on Geomatics
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INTRODUCTION

Since 2003, an objective of the Inter-Agency Committee on Geomatics (IACG) has been to develop and implement a federal geomatics strategy complementary with provincial and territorial approaches that promote the maintenance and widespread use of a data infrastructure having common standards and up-to-date data that are collected once and used by many agencies.

In 2004, the Treasury Board Secretariat asked the IACG to develop a Federal Geomatics Strategy and Policy Framework for the Government of Canada that could be used to assess initiatives with geomatics components that departments submit to the Treasury Board.

In addition to this function, the Federal Geomatics Strategy and Policy Framework (referred to hereafter as "the Strategy") would enhance cost-effectiveness and operational efficiency by preventing duplication and overlap.

IACG presents herewith its proposal for further development by TBS and federal government departments. This Strategy is considered a 'living document' that through annual review and implementation will improve and deliver results. The information in this Strategy is organized into two sections: 1) a summary; and 2) a series of appendices detailing the policy framework components.

The policy components in Appendices F and G also comprise the criteria for assessing geomatics related initiatives. It is understood that not all of the components identified would necessarily apply to all initiatives. The IACG expects to use the applicable components to evaluate these initiatives when requested by TBS to do so.

A GLOSSARY OF ACRONYMS AND TERMS

ADM	**Assistant Deputy Minister**
CCOG	**Canadian Council on Geomatics**
CGDI	**Canadian Geospatial Data Infrastructure**
DG	**Director General**
DM	**Deputy Minister**
GoC	**Government of Canada**
GCC	**Geomatics Community Coordinator**
GPS	**Global Positioning System**
IACG	**Inter-Agency Committee on Geomatics**
NLWIS	**National Land and Water Information Service**
TB	**Treasury Board**
TBS	**Treasury Board Secretariat**

Accountability	**The quality or state of being accountable; especially an obligation or willingness to accept responsibility or to account for one's actions.**
Accountable	**Subject to giving an account (answerable); capable of being accounted for (explainable). Accountable suggests imminence of retribution for unfulfilled trust or violated obligation (elected officials are accountable to the voters). Synonym: responsible (see below).**
Community of practice	**A multi-stakeholder committee formed to enhance strategic and technical collaboration in order to maximize the benefits of sharing of resources. These communities are generally data or theme related.**
Canadian Council on Geomatics (CCOG)	**The Canadian Council on Geomatics, created in 1972, is the major federal-provincial-territorial consultative body for geographic information management. Its aims are to provide a forum for exchanging information on programs, to consider common operational issues, to discuss proposed legislation relevant to geomatics (particularly land surveying), and to develop and promote national geomatics standards.**
Geomatics for the federal government	**Through a fusion of geography and information technology, geomatics is the suite of activities and services involved in the collection, management, analysis, and integration of location-based data to enable improved decision and policy making for Canadians.**

Geomatics community coordinator (GCC)	**The purpose of the GCC is to provide a federal lead contact or focal point for a data theme or issue, thereby minimizing duplication of effort. A GCC acts on behalf of a community of practice when developing national and/or international alliances and collaborations for the data theme or issue.** **By becoming a GCC, a department assumes accountability for establishing the community of practice and for providing leadership to define the CoP's needs and to ensure these needs are addressed through an approved annual work plan (IACG Steering Committee, May 2006). See description in Appendix E.**
Governance **General governance** **Operational governance**	 **The Steering Committee accepted a general model for the IACG and its relationship with the Treasury Board Secretariat in March 2005. As expanded later in 2005, this model includes accountability mechanisms and outlines how the IACG and TBS will interact. See Appendix A.** **Ways of ensuring accountability among IACG member departments for implementing the federal geomatics strategy, e.g., by delivering on activities that lead to identified outcomes, by complying with the policy components and by carrying out work on behalf of the federal geomatics community (GCCs, etc.). See Appendix B.**
IACG Steering Committee	**Comprises Assistant Deputy Ministers (ADMs) and Director Generals (DGs) from member departments who meet three to four times a year to set policy directions and priorities for coordinating federal geomatics, including review and approval of workplans.**
IACG Working Group	**Comprises DGs and Directors from member departments who meet every two to three weeks to draft policies and carry out initiatives in support of the coordination of federal geomatics.**
Policy framework	**A series of policy components deemed necessary for achieving the desired outcomes for federal geomatics. Appendix E describes the policy component related to Horizontal Data and Issue Management. Policy Components on Standards and Access (Appendix F) includes technical standards, standardized framework data layers, data archiving and custodianship principles. Other Policy Components (Appendix G) include: Human Resource Practices, GoC Software Procurement, Communications, Risk Management.**
Responsibility	**The quality or state of being responsible, as a moral, legal, or mental accountability (reliability, trustworthiness; something for which one is responsible [burden]).**

Responsible	• **Liable to be called on to answer** • **Liable to be called to account as the primary cause, motive, or agent (a committee responsible for the job)** • **Being the cause or explanation (mechanical defects were responsible for the accident)** • **Liable to legal review or, in case of fault, to penalties** • **Able to answer for one's conduct and obligations** • **Able to choose for oneself between right and wrong** • **Marked by or involving responsibility or accountability (responsible financial policies)** • **Politically answerable; especially, required to submit to the electorate if defeated by the legislature—used especially of the British cabinet** • **RESPONSIBLE implies holding a specific office, duty, or trust (the bureau responsible for revenue collection).** • **ANSWERABLE suggests a relation between one having a moral or legal obligation and a court or other authority charged with oversight of its observance (an intelligence agency answerable to Congress).** • **ACCOUNTABLE suggests imminence of retribution for unfulfilled trust or violated obligation (elected officials are accountable to the voters).** • **AMENABLE and LIABLE stress the fact of subjection to review, censure, or control by a designated authority under certain conditions (laws are amenable to judicial review).**

GEOMATICS IN CANADA
The Strategy in Perspective

"The suite of activities and services involved in the collection, management, analysis, and integration of location-based data to enable improved decision and policy making for Canadians." (IACG definition of federal geomatics, 2005)

The science and technology of geomatics is on the cusp of a revolution that is transforming the way we live and work, and Canada is in the vanguard of nations in its development and uses. Virtually every week sees the introduction of new satellite or Internet-based or stand-alone technologies using digital maps. Earth imagery, satellite navigation systems and location-based information are increasingly available as public and commercial services.

At the retail level, more and more people are using Global Positioning Systems (GPS), the Internet and other location-based data routinely to answer questions of everyday life, such as "What is the best way to get from point A to point B?" and "What services, hotels, restaurants and stores, for instance, are available along the way?"

Decision makers in government and industry are using location-based data to answer critical planning and policy questions more efficiently and with unprecedented precision. Examples include: questions about health care, such as, "Does the density of populations with special needs justify a specific initiative in this area?"; marketing questions, such as, "What do the demographics of a given area tell us about where to target this ad campaign or locate this outlet?"; and questions by responders to every kind of emergency, from 911 calls to chemical spills and floods. Another question is common to all users: "How certain can we be that the data we are using is up to date and based on common standards?"

Public and Private Sector Spending on Geomatics

In 2004-2005, the 12 federal departments that comprise IACG spent an estimated $240 million on geomatics. In the same year, a Natural Resources Canada (NRCan)-commissioned study by Hickling Arthurs Low estimated that spending by provincial and territorial governments was about $440 million. On the revenue side, a StatCan study done for NRCan suggested that in 2002 the Canadian geomatics industry had earnings of roughly $2 billion. Although many of these totals are based on differences and assumptions in the various organizations, they are believed to be in the right order of magnitude.

Furthermore, the outlook is for increased momentum. For example, GeoConnections, the federally-funded program that is building the infrastructure for greater sharing of location data, recently received $60 million for 2005-2010. This followed funding of $60 million in 1999-2004. A further example, one that will use the infrastructure built under GeoConnections, is the National Land and Water Information Service (NLWIS), which was funded in 2005 with $100 million over four years.

THE NEED FOR A FEDERAL STRATEGY FOR GEOMATICS

Since 2003, one of the IACG Steering Committee's objectives has been to develop and implement a federal geomatics strategy complementary with provincial and territorial approaches that promotes the maintenance and widespread use of a data infrastructure having common standards and up-to-date data that are collected once and used by many agencies.

In 2004, the Treasury Board Secretariat requested that IACG and its member departments draw up a strategy for federal geomatics activities that could be used to assess the growing number of geomatics-related initiatives submitted to Treasury Board.

Both providers and users of federal geomatics services need such a tool. Realization of the full potential of geomatics requires that developers and users of data and infrastructure work from the same page in terms of policies, standards and definitions. Efficient allocation and use of resources also require that they avoid duplication of effort. In one word, they require coordination. This applies with full force to the federal government, both because of its spending on geomatics and because it is the largest single repository of geographic data in Canada.

The strategy proposed in this document would, over time, deliver efficiency and cost effectiveness by improving geomatics coordination in policy-making and governance and also in the following operational areas:

- The maintenance and use of common standards.
- Access to and use of up-to-date data that are collected once (closest to source) and used by many agencies.

The Strategy would also advance the wider government goal of a basic change in culture which will put new emphasis on horizontal coordination, management, governance and accountability that challenges the existing mode of vertical operations.

IACG has been pursuing these goals by:

- Cooperating in the collection, maintenance, analysis, integration, and sharing of certain location-based (geospatial) data layers to eliminate overlap and duplication.
- Promoting the use of common geomatics standards that comply with international standards.
- Facilitating easy access to and use of location-based (geographical) information by all Canadians through, for example, the use of common data licenses.
- Providing a consultative forum for the federal geomatics community.

The provinces and territories are essential partners in achieving access to no-cost to user and efficient geomatics data important to social, economic and cultural well-being. IACG believes that data of this kind should be widely available to support:

- Direct and immediate use of geo-data in a wide range of common public and private enterprises of broad benefit.

- The development, integration, and wide use of value-adding innovations and applications of particular benefit.

The “direct and immediate” category would include, for instance, an up-to-date and accurate digital representation of the Canadian road network, complete with street names and address ranges. In the public sector, for example, Statistics Canada wants such a map layer as the basis for designing the national census. Elections Canada needs it to define the boundaries of electoral ridings and polling districts. Civilian and military organizations need it to respond to public safety related emergencies. In the private value-added sector, this digital representation could become the nation-wide reference for private sector services related to vehicle routing and navigation using GPS and location based customer services.

This strategy sets forward a national vision for geomatics in Canada and will guide relationships and agreements among federal departments, provinces, territories and international partners.

GOALS OF THE STRATEGY

The Strategy seeks the following inter-related outcomes:

- Timely and effective support for government decision-making.
- Better value for money, over time, for Canadian taxpayers.
- Optimized allocation of resources, to be achieved in part by the assessment of geomatics initiatives at the request of TBS.
- Collective leadership, through IACG, of geomatics in the federal government.
- Consistent application, through IACG, of approved policies, technologies, standards and specifications.
- The establishment and enhancement of external alliances (provincial, territorial and international) critical to the success of federal geomatics activities.

Action to achieve these outcomes would include**:**

- Establishment of processes to ensure that data meet the criteria of being paid for once, being collected as close as possible to source, and being freely shared.
- Development and implementation of common geomatics standards to facilitate information exchange and interoperability.
- Enhancement of personnel competencies to achieve federal government leadership in geomatics development.
- Development and promotion of an enterprise-procurement approach that would allow departments to benefit from suppliers' volume discounts.
- Development of the policy framework for coordination (i.e., the Federal Geomatics Strategy).
- Effective communication with all departments about developments in federal government geomatics.
- Establishment of federal points of contact and consistent approaches to geomatics collaboration with provinces, territories and other external stakeholders. (see further page 20)
- Assessing and making recommendations on proposed initiatives when requested by TBS.
- Coordination of the federal position on federal-provincial-territorial geomatics issues.
- Ensuring that security levels are appropriate for data access and that departments' data are available for sharing.

FEDERAL GEOMATICS
MISSION, VISION AND KEY FUNCTIONS

The IACG Steering Committee has endorsed the following statements of mission, vision and critical functions for federal geomatics:

Mission

To enable the delivery of location-based data and analysis capabilities for government policy- and decision-making, and thus for the well-being of Canadians.

Vision

To be a leader in the delivery of integrated and valued geomatics capacity for government and citizens.

Key functions

The following functions are critical to the efficiency and effectiveness of federal geomatics:

- Recruiting and retaining capable and motivated staff.
- Achieving coordination, cooperation, and collaboration among departments.
- Avoiding overlap and minimizing duplication to provide value to all taxpayers, federal, provincial and municipal.
- Supplying the right geospatial data to the right people at the right time.
- Collecting data once, closest to source, and using them many times via the Canadian Geospatial Data Infrastructure (CGDI).
- Leveraging private-sector and academic capabilities when it is sensible to do so.

WHERE WE GO FROM HERE

The 2006 agenda for further development of the Federal Government Geomatics Strategy calls for the following actions (listed here in no particular priority) by the estimated dates of completion shown below:

- Finalization of the Federal Government Geomatics Strategy and Policy Framework.
  May 2006.

- Development of an implementation plan including:
  - Refinement of the policy component on Geomatics Community Coordinators (GCCs) to reflect lessons learned:
    Spring 2006
  - Further refinement of the policy components to use as criteria for assessing proposed initiatives:
    Summer 2006
  - Development of an IACG Communications Plan:
    Fall 2006

- Discussion and approval of eight policy components not yet discussed:
  IACG estimates that two will be completed each year.

Closing statement

Improved coordination of geomatics activities across the federal government is the central theme of this document. This coordination is necessary to minimize overlap and avoid duplication in the use of resources and operationally, to achieving the standardization of geomatics data which is a precondition of their quality and to building of the Canadian Geospatial Data Infrastructure which enables greater use of those data. Most important, it is essential to the government's goal of delivering full value for money for the Canadian taxpayer. IACG has drafted this document as the first stage in the evolution of the Strategy and Policy Framework.

The appendices of this document outline guiding principles and actions to achieve the Strategy. The policy components in Appendix F and G comprise the Policy Framework to be used for assessing geomatics related initiatives, and have already been used to assess the NLWIS and GeoConnections proposals. It is understood that not all of the components would necessarily apply to all initiatives. The IACG expects to use the applicable components to evaluate these initiatives when requested by TBS to do so.

We look forward to comments and feedback from Treasury Board Secretariat and other departments who will be our partners in its future development.

ANNEX A

GENERAL GOVERNANCE

As used in this document, the term "general governance" refers to high-level accountabilities and responsibilities for the coordination of the federal government's geomatics activities, including those of Ministers and Deputy Ministers of departments, Treasury Board and IACG.

The proposed accountabilities/responsibilities of those involved are summarized below:

For IACG

In seeking to improve the coordination of federal geomatics, the IACG is accountable to TB for:

1. Developing and maintaining the Federal Geomatics Strategy and Policy Framework.

2. Communicating the strategy and framework once TB directives and guidelines are issued.

3. Identifying horizontal aspects of the Federal Geomatics Strategy and Policy Framework as specified in TB directives and guidelines.

4. Providing advice to TBS, at its request, on departmental proposals for initiatives with a geomatics component.

5. Reporting annually on departmental compliance with the TB directives and guidelines and the Federal Geomatics Strategy and Policy Framework.

Assumptions and Implications

- That TB would issue directives or guidelines encompassing the Federal Geomatics Strategy and Policy Framework and the role of the IACG as the federal geomatics forum.
- That IACG would develop and provide TBS with geomatics criteria for referring initiatives to the IACG for advice.
- That IACG's member departments would comply with the TB directives and guidelines.
- That those departments would support the maintenance of the Committee as the federal geomatics forum by making sustained contributions of resources, financial and otherwise, to IACG discussions and initiatives. These contributions would include appropriate tasks in managers' accountability accords and ensuring a funded IACG Secretariat.

For Treasury Board

1. Review and endorsement of the Federal Geomatics Strategy and Policy Framework and the promulgation of TB directives and guidelines to ensure consistent compliance with the Strategy.

2. Monitor progress towards the target outcomes of these TB directives and guidelines through an annual IACG report to the Board, and by providing tools to encourage compliance.

3. Request advice from the IACG Steering Committee regarding departmental proposals for initiatives with a geomatics component.

4. Recognize the horizontal accountability of specific IACG member departments for work they undertake on behalf of all departments.

5. Recognize that departments remain accountable for work undertaken for another department.

Assumptions and Implications

- That Deputy Ministers would be accountable to Ministers for adhering to the TB directives and guidelines within their areas of responsibility.
- That departments would require a clear description of performance measures in the policy for operational governance.
- That departmental representatives on the IACG Steering Committee would be responsible for keeping their departments informed on IACG matters.
- That when departments develop geomatics-related initiatives and when these initiatives meet TBS's criteria for referral to IACG, departments would discuss these proposals with the IACG.
- That the IACG would establish mechanisms and criteria for reviewing such initiatives efficiently and effectively.

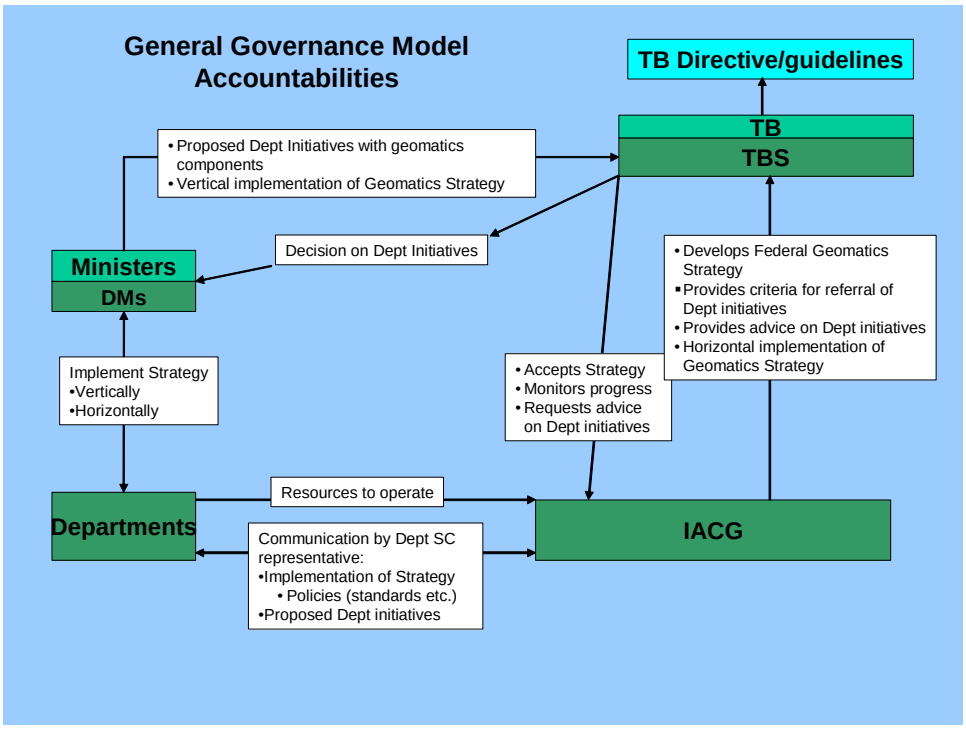
For Ministers

1. That Ministers, through their DMs, would recognize IACG's responsibilities vis-à-vis TB directives and guidelines.

2. That Ministers would recognize that their departments may undertake horizontal responsibilities on behalf of the IACG membership.

3. That Ministers would be accountable to TB for fulfilling these horizontal responsibilities.

4. For ensuring, through their DMs, that their department reports annually on their compliance with TB directives and guidelines.



Schematic of General Governance model

APPENDIX B

IACG OPERATIONAL GOVERNANCE

This part of the Strategy deals exclusively with accountabilities and responsibilities of the IACG. It covers:

- The accountability of IACG member departments for implementing, developing and maintaining the Strategy.
- The principles under which the IACG Steering Committee, its Working Group and its member departments would work together to coordinate federal government geomatics activities.
- Identification of responsibilities for taking action and getting results, for complying with the policies embodied in the Strategy and for the work that member departments do on behalf of the federal geomatics community.
- Accountability for working relationships outside the federal government, for example with provincial, territorial and international partners.

The Operational Governance part of the Strategy also proposes accountabilities among IACG departments for implementing the Strategy once TB has endorsed it and promulgated into or as directives or guidelines**.**

The following section (Appendix C) deals explicitly with the operating procedures that have evolved to ensure an adequate flow of information to support sound decisions by the Steering Committee. It does so to formalize IACG procedures, to guide members of the IACG Steering Committee, Working Group and Secretariat, and particularly to orient new members of these groups.

IACG Working Group Accountabilities

In seeking to improve coordination, the IACG Working Group would be accountable to the Steering Committee for:

- Recommending the initial version and subsequent updates of the Federal Geomatics Strategy and Policy Framework.
- Formulating options for the implementation of horizontal aspects of the Strategy.
- Establishing an effective mechanism for reviewing, at the request of TBS, departmental proposals for initiatives with a geomatics component.
- Providing advice regarding reviews requested by TBS of departmental proposals that involve geomatics.
- Analyzing and making recommendations concerning these initiatives.
- Implementing, where applicable, horizontal aspects of the Strategy.
- Reporting periodically on departments' progress in implementing the Strategy and Policy Framework.
- Reviewing all issues brought to the IACG Steering Committee for information, discussion, and/or decision (whether at meetings or through e-mail).

Working Group Assumptions

That IAGC member departments would:

- Continue to support the IACG Working Group.
- Discuss with the IACG Working Group the proposals they develop for initiatives with a geomatics component.
- Contribute in a sustained way to IACG discussions and initiatives and to tasks listed in managers' accountability accords.
- Implement the Strategy and Policy Framework vertically.
- Keep their department informed on IACG matters.
- Route their communications with the Steering Committee through the Working Group in sufficient time to allow adequate analysis and discussion or through their representative on the Steering Committee.
- Ensure that their representatives on the Steering Committee speak for the whole department.
- Ensure that departmental staff with GCC responsibilities keep the Working Group informed of progress towards their objectives.

IACG Steering Committee Accountabilities

The Steering Committee would:

- Discuss and refine the Federal Geomatics Strategy and Policy Framework and recommend its endorsement to the Treasury Board Secretariat.
- Approve and monitor progress towards the objectives of the Federal Geomatics Strategy on the basis of annual workplans and reports from the Working Group and from GCCs.

In support, the Working Group would;

- Establish an effective mechanism for reviewing, on the request of TBS, departmental proposals for initiatives with a geomatics component.

- Analyze and make recommendations concerning departmental proposals on initiatives with a geomatics component for which TBS has requested advice.

- Implement, where applicable, horizontal aspects of the Strategy, and be accountable to the Steering Committee for doing so.

- Report periodically on departments' progress in implementing the Strategy.

- Review all issues brought to the IACG Steering Committee for information, discussion, and/or decision (whether at meetings or through e-mail). Any member of the Steering Committee may initiate an e-mail exchange among members. The related Working Group member should keep the Working Group informed.

- Accept consensuses that the Working Group may reach on federal positions regarding matters under consideration by provincial and territorial agencies through the Canadian Council on Geomatics (CCOG).

APPENDIX C

IACG OPERATING PROCEDURES

Horizontal Coordination

Generally, a horizontal issue is raised by a member of the IACG. A champion is then identified from the Working Group to lead a sub-group, which [usually] includes a small number of other Working Group members, to review and assess the issue against the intent of the Strategy, and develop an IACG policy paper. This policy paper would frame issue and recommend actions in response; the policy paper would be tabled to the Steering Committee for decision.

Those responsible for coordinating horizontal matters, including GCCs, would seek approval of annual work plans and report annually on progress to the Steering Committee.

IACG and International Relations
Departments that serve as GCCs or that have other geomatics-related responsibilities may interact with counterparts in other countries (e.g., the US National Geospatial Intelligence Agency). These departments would advise the IACG of initiatives that might benefit or otherwise have an impact on other member departments.

IACG and provincial-territorial relations
The Canadian Council on Geomatics (CCOG) is and would continue to be the recognized forum for federal, provincial, and territorial governments to discuss geomatics issues. The CCOG meets annually to address areas of common interest and identify opportunities for members to collaborate. Voting is by jurisdiction; hence, there is one federal vote. Staff members from several departments (as a subset of IACG) attend CCOG meetings as delegates.

Assumptions about inter-governmental collaboration:
- That the IACG Working Group (with input from GCCs) would, as it does now, usually discuss the federal position on items coming before CCOG for consideration. The chief of the federal delegation to CCOG, working with delegation members, would, where appropriate, further refine the position.
- That IACG would present an annual federal report to CCOG, organized along business lines and including GCC annual report summaries.
- That where GCCs require agreements with provincial and territorial agencies to access data "closest to source," they would clarify the implications for IACG members and obtain the Steering Committee's approval before signing the agreements**.**

IACG and Departmental Initiatives
- The Treasury Board Secretariat may ask the IACG Steering Committee for advice on departmental initiatives with a geomatics component. Given TBS's short timelines, departments would need to keep the IACG Working Group and the Steering Committee informed as they develop such initiatives and show how they are consistent with the Strategy.
- The Working Group would need to develop and communicate assessment criteria so that the department might know what the Strategy requires of them. These criteria will be based on the policy components of the Strategy.
- The Working Group would also ensure that members who review initiatives have the appropriate expertise and security clearance.

APPENDIX D

ASSESSING OF DEPARTMENTAL INITIATIVES

Assessing departmental initiatives with geomatics components will require ranking policy components as either Mandatory or Voluntary. The following is a draft ranking, taking into consideration that several of these components are under development.

Policy Component	Mandatory/Voluntary
Horizontal management of data and issues	Mandatory
Standards and Access	
Technical standards	Mandatory
Standard data licensing	Mandatory
Collaboration models	Proposed Voluntary
Standardized framework data layers	Proposed Mandatory
Data custodianship and archiving principles	Proposed Mandatory
Data access policy	Proposed Mandatory
General	
Human-resource practices	Proposed Voluntary
Enterprise (GoC) procurement (data/software/services)	Proposed Voluntary
Consistent messaging	Proposed Voluntary
Risk management specific to geomatics and geospatial data issues	Proposed Mandatory

"Mandatory" and "voluntary" rankings in the table above can be further qualified as "proposed" based on initial discussions by the IACG Working Group. These rankings may change as the policy components evolve.

APPENDIX E

Policy Component on Horizontal Data and Issue Management

As an inter-departmental committee, IACG's objective is to promote the maintenance and widespread use of an efficient and useful data infrastructure. Specifically, this means one based on common standards and on up-to-date data that are collected once, collected closest to source and used by many agencies. Fulfillment of these criteria requires a process for the management of horizontal issues. The IACG defined approach is through a Geomatics Community Coordinator, described as follows:

Geomatics Community Coordinator (GCC)

The IACG Steering Committee has agreed that a data theme or issue that affects several departments could be managed by a Geomatics Community Coordinator (GCC).

A GCC is a department nominated to expedite the work of a community of practice, i.e. a community of other federal departments that have an interest in the issue.

The purpose of the GCC is to provide a lead contact or focal point for dealing with a given data theme or issue, thereby minimizing duplication of effort. A GCC would act on behalf of a community of practice when developing national and/or international alliances and collaborations that concern a specific data theme or issue. By becoming a GCC, a department assumes accountability for establishing the community of practice and for providing leadership to define the CoP's needs and to ensure these needs are addressed through an approved annual work plan. The scope of the GCC would include due consideration of and for long-term agreements that may already exist between members of the CoP and other government and non-government agencies.

GCCs have been nominated for the following themes and issues:

- The road network: Statistics Canada.
- Protected and conservation areas: Parks Canada Agency.
- Real property: Public Works and Government Services Canada.
- Public safety: Public Safety and Emergency Preparedness Canada.
- Land use: Agriculture and Agri-Food Canada.

Working on the experience of the GCCs to date, the IACG position paper (approved in May 2004) would need to embody lessons learned and would require revision by the IACG Working Group and reconsideration by the Steering Committee.

APPENDIX F

Standards and Access Policy Components

Technical Standards
The IACG Steering Committee hopes that federal agencies would, by September 2006, adopt and use common geospatial standards and infrastructure endorsed by GeoConnections and CGDI. Benefits include greater interoperability of data and software among federal agencies, better linkages with provincial and territorial agencies that have endorsed the same technical standards, lower technical risks, and greater choice of software solutions based on Canadian and international standardization efforts. The IACG Working Group has drafted a checklist to assess departments' compliance with these standards.

Standard Data Licensing
Users of federal data have expressed frustration at the variety of licenses used by various departments. The Department of Justice, in consultation with key federal data-providing agencies, has drafted standard wording for three licenses: unrestricted use, restricted use (end-use), and valued-added use. First published in 2004, the guide is currently under revision.

The IACG Steering Committee has also agreed that federal agencies will adopt and use the common data licenses and practices developed through GeoConnections and CGDI. In addition, the Committee agreed to discuss, refine, and progressively implement a process for the future evolution of licenses for disseminating geographic data and has developed a document titled *Guide to Best Practices for the Dissemination of Government Geographic Data.* Digital versions of the document are available on the web at:
http://www.iacg-cmoig.org/public/docs_e.php or
http://www.geoconnections.org/CGDI.cfm/fuseaction/keyDocs.home/gcs.cfm

Collaboration Models
Creating and maintaining internal and external collaborative relationships is a critical strategic objective for federal geomatics and is essential to the goal of multiple use of geospatial data collected once, closest to source. Collaborators would work together more quickly and effectively if they had a common way to form and govern their relationships and to apply standard models and templates based on intent and circumstance. A standard approach to collaboration would also promote consistency for GCCs when interacting with external parties and working on internal projects. Because of these issues, IACG envisions development of a "best practices" guide based on lessons learned to date.

Standardized Framework Data Layers
The essential reason for standardizing framework data layers is to avoid overlap, minimize duplication and share those data layers that underpin analysis and reporting among different federal agencies. This standardization would not only improve the ability to integrate data for analysis, but also avoid any need to create and maintain the same framework data within different agencies.

A policy paper addressing the use of standardized framework data layers by federal departments was tabled with the IACG Steering Committee in March 2005. It identifies three kinds of data layers:

- Universal: data layers used by all.

- Common: data layers used by several agencies.
- Program specific: layers specific to one department.

Federal agencies have been asked to study the value of incorporating standardized data and to identify the cost of moving to standardized data.

Data Custodianship and Archiving Principles
Decisions about our economy, environment and society cannot be based simply on current data. To detect and analyze change in any geospatially-referenced parameter, decision makers must have access to past data sets.

Long-term access to the wealth of geomatics data will be compromised unless steps are taken to ensure their preservation and continued availability to those who frame policy and make decisions in government, industry and research institutions.

Best practices for the long-term preservation of maps in paper form are well established in the library and archival communities, and publication of updated paper maps does not imply the destruction of earlier editions. However, creators of revised digital map data may deliberately or inadvertently overwrite previous data. And, without a current business requirement for older data, there may be little incentive for individual data producers to maintain them.

Global approaches are required for the preservation of geomatics data. Library and Archives Canada has joined the IACG in addressing these issues and its expertise will be invaluable in the further development of this policy component.

Data Access
IACG believes that some kinds of digital geospatial data have such inherent value that users should have access to them at no direct cost to users. For example, six standardized framework data layers for Canada are now accessible at no charge to users through GeoBase, and the costs are covered by the data contributors. On the other hand, as a result of cost-recovery policies, federal producers of other data layers sometimes charge federal users for access and depend on the revenue to finance part of their operations.

Access charges inhibit data use, leading to inefficiencies and/or to duplication, while the revenues generated are often insufficient to cover the cost of maintaining the data. In its initial discussion of this component, the IACG Working Group suggested that resolving part of this issue lies in focusing on “universal” framework data layers. These data layers are used by all departments and hence should be made available to all at no direct cost to users through the efforts of a Geomatics Community Coordinator**.**

APPENDIX G

General Policy Components

Human resource practices
Members of the IACG Working Group see considerable potential value in establishing more consistent human resource practices in terms of training and professional development for federal geomatics agencies. Among other benefits, this would provide better interdepartmental mobility, enhanced participation in cooperative projects, and potentially allow for common position descriptions and classifications.

Procurement of Geospatial Data Software and Services
Government of Canada procurement mechanisms for geospatial data, software, and services are exercised by each department on its own, particularly in the case of software licenses. The IACG Working Group sees opportunities for savings if a collective approach can be arranged, for example, by instituting master standing offers and interdepartmental software licenses for certain software.

The intent is not to preempt departmental software buying decisions but to capitalize on bulk purchases by negotiating lower prices from external providers. Public Works and Government Services Canada has volunteered to take the lead on this file and aims to have a mechanism for the enterprise procurement of widely-used GIS software licenses in place for 2006-07.

Communications
It is one thing for the departmental representatives comprising the IACG Steering Committee and the IACG Working Group to define and agree on common policies. It is quite another to communicate these policies throughout their departments and to other departments or agencies to encourage the policies' adoption. Common communication vehicles and tools are needed, but their development has barely begun. Environment Canada is leading in this domain through its GeoNet Internet mailing list, and Indian and Northern Affairs Canada (INAC) has defined a departmental geomatics strategy. Others have intra-departmental mailing lists and workshops. Further, consistent messaging to external partners and stakeholders is critical.

Risk Management
Treasury Board policies require that projects use rigorous processes for identifying, analyzing, prioritizing, mitigating, and monitoring related risks. Effective risk management involves identifying risks, evaluating their probability and impact, developing mitigation strategies, assigning accountabilities for carrying out mitigation activities, and regularly monitoring and updating risks, new and old, during planning and execution.

The management of risk specific to geomatics and geospatial data issues does not replace the general TB requirements, but does apply to areas of concern specific to the discipline. The IACG Working Group has identified "assumptions" or "risks" that need to be addressed in order that the Federal Geomatics Strategy and Framework be successful. Emerging during the development of the IACG outcomes registry, these risks and assumptions relate to the development of inter-departmental collaboration and cooperation among members of the IACG, based on the common goal of sharing data. They need to be addressed in proposals for initiatives with geomatics components.

APPENDIX H

Performance Measurement of Federal Geomatics

The development of performance measurement indicators formed part of an Outcomes Management Study for federal geomatics contracted by TBS/CIOB in Spring 2005. Generally speaking, participants contributing to the study concluded that indicators showing progress on some identified intermediate outcomes were more amenable to measurement and would serve as proxies for indicators of progress towards the final outcomes. Three key intermediate outcomes are:

- increased ability to use and integrate data across departments;
- decreased duplication in collecting and maintaining geomatics data on particular themes; and
- creation of clear data-custodian roles.

The outcomes study report gives details of the measurement of progress towards the intermediate outcomes: measurement frequency and duration, measurement method, baseline value, target level and date, tolerance limit, action if the indicator is outside the tolerance limit, and accountabilities. For example, the second outcome (decreased duplication) implies the following:

- increased use of the authoritative source of a data layer;
- knowledge of who is responsible for the layer (e.g., the GCC);
- knowledge that this is the only source; and
- a decreased number of duplicate data sets on the same theme.

A performance metric for the first outcome is the actual measured number of users accessing the authoritative source data, tracked at regular intervals for a specified time. Its baseline value would depend on the data layer. The target for measurement would ultimately be 100% of users, with 75% the most likely achievable level.

This topic will undergo further development and consolidation as the overall Geomatics Strategy and Framework evolves.