Opening Address

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represented by
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1. INTRODUCTION

Thank you for your kind introduction. It is a pleasure to join so many distinguished colleagues at this United Nations Special Forum. I have been asked by the Minister of Natural Resources Canada, the Honourable John Efford, to express to you his greetings and best wishes for your forum, and convey his regrets that he was unable to attend.

2. AT THE FOREFRONT OF GEOMATICS

Canada is a country at the forefront of geomatics. As the vast majority of its wealth is concentrated in property and natural resources, a legal framework of property rights infrastructure exists to enable peaceful property ownership, secure property transactions, taxation, the raising of investment capital and the orderly development of the country's natural resources. Property is recognized as an essential component in the creation of wealth and continuing sustainable development.

In addition, because of the challenges of Canada's size and terrain, we became pioneers in earth observation. Because of our vast distances, we became world leaders in information and communications technologies and Internet applications. And because Canada is a federal state and a multicultural nation with two official languages, we have become very good at bringing together various points of view and finding ways to use technology to empower our citizens.

With that in mind, I would like to talk about my country's experience in "Building Land Information Policy and Land Information Governance."

In Canada, geospatial information affects almost every aspect of our daily life — even if Canadians are largely unaware of its applications. A base layer of Canada's land information structure is the property parcel, which provides a window of access to vast amounts of thematic geospatial data. Governments, businesses and citizens use location-based information in making decisions that affect the economy, the environment and our way of life.

Our challenge is to put the tools of geospatial data into the hands of Canadians who can use them — not the geomatics and geospatial experts, but the hundreds of thousands of citizens who can use geospatial data in their daily jobs and to improve their lives.

Our goal is to create the Canadian Geospatial Data Infrastructure — the CGDI — that contains data Canadians can use for a variety of purposes and to make it readily available to those who can use it.

3. GEO CONNECTIONS

The key initiative in our geospatial empowerment is a program called GeoConnections. It was launched in 1999, with $60 million over five years, to build the best possible Canadian Geospatial Data Infrastructure. These funds have been matched by an additional $110 million from Government of Canada agencies, the provinces and non-governmental organizations to construct the specific interoperable data sets and services they require for their activities.

GeoConnections is designed to have very broad applications for a wide spectrum of users.

So, we are creating a common national infrastructure that enables us to put geospatial information on the Internet for Canadians to use. For example, it has applications in land-use planning and dealing with natural disasters such as landslides, floods and earthquakes, and it has implications for forest management and agriculture.

4. PARTNERSHIPS

Creating such an infrastructure requires partnership and cooperation at many different organizations: among federal, provincial, territorial and municipal governments; horizontally, across departments and agencies within each jurisdiction; among government, universities and industry; between the push of technology from the geomatics industry and the pull of requirements from the clients and users of geospatial information, which we sometimes refer to as “communities of practice.”

This collaborative process requires shared leadership, a consultative approach to decision making, management of horizontal issues and recognition of the needs of different user communities. Over the past three years, we have been very encouraged by the ability of stakeholders to work together in this way.

We now believe we can expand the collaborative circle of stakeholders. We want to apply the lessons learned in Canada to international partnerships. In short, we want to work with businesses and organizations in countries like yours and, hopefully, learn more by working together.

5. PRINCIPLES

Let me give you some background about what went into the design of the Canadian Geospatial Data Infrastructure, and a few examples of the programs we have created as a result. We launched this infrastructure with five objectives in mind:

5.1 Data Access

We wanted to develop the technical components of the geospatial data infrastructure, so that Canadians could access it on the Internet. The background to this is that Canada has a very ambitious program to make broadband Internet available throughout Canada, even in the most remote communities.

5.2 Framework Data

We wanted a system that would let users and agencies add value, develop new applications and create more detailed geospatial databases. To do this, we needed to agree upon common geospatial data sets for application and analysis.

This, in turn, led us to...

5.3 Geospatial Standards

We reached consensus on the standards that would be used to simplify access, improve data quality and integration, and encourage development of commercial software programs that could be sold internationally.

All of this required...

5.4 Partnership

We created collaborative agreements among stakeholders, including various departments within the Government of Canada, to share new development and capitalize on emerging technology.

And finally, we could not have accomplished any of this without...

5.5 Supportive Policies

This involved simplifying government policies and harmonizing the access and use of geospatial data both across departments and agencies and among levels of government.

These five original principles helped shape GeoConnections and have remained our guideposts throughout the program. We see the benefits in terms of more coordination, more use of and more creation of data sets, as well as increased spin-offs for industrial innovation. Canadian companies have already sold products and services in the international markets.

Let me describe some of the specific initiatives launched under GeoConnections or in support of the Canadian Geospatial Data Infrastructure, and compare the results with the original principles.

6. GEOBASE

One of the most basic GeoConnections initiatives is the creation of the GeoBase. The GeoBase is a set of continuous and fully integrated, regional-scale geospatial data that provides context and reference information. It is founded on the need to collect data once, closest to the source, and create value from these data by developing many applications.

The GeoBase is a national initiative overseen by the Canadian Council of Geomatics, a consultative body of federal, provincial and territorial government agencies. All these levels of government have agreed to work together to provide the foundations for the Canadian Geospatial Data Infrastructure.

The GeoBase initiative is very innovative because no single stakeholder "owns" or controls the database. Stakeholders create, supply, maintain and distribute geographic data from different sources. The initiative allows for the vertical integration of data from federal, provincial, territorial and municipal sources, and horizontal integration across governments and projects. This is invaluable for sustainable resource development, public safety, environmental protection or any other government issue.

Canada's experience can be seen as a "best practice" in information sharing. We have learned how to break down institutional barriers and bring together our partners' databases to create a richer variety of information for people to use.

Our governments, the private sector and universities are internationally recognized as having a lot of experience in the shared-ownership model and making it work. What we've discovered is that when you work collaboratively, you accomplish more and empower more people to make creative use of the data.

7. ACCESS ADVISORY NODE

Once you have the basic framework data and the additional data provided by the various stakeholders, you require a way to access what is available. The Access Advisory Node is a GeoConnections program to develop portions of the Canadian Geospatial Data Infrastructure. It makes government geo-information available on the Internet through the GeoBase portal.

Through our GeoConnections Discovery Portal, users can access more than 1,100 Canadian data catalogues. And the infrastructure has evolved to the point where they can develop their own applications based on the CGDI. Geospatial information is essential for governments, who use it to manage resources and create policy. At the same time, the GeoConnections Discovery Portal functions as a one-stop shop for all Canadians with an interest in geospatial information.

Resource companies and entrepreneurs can use this information to analyze markets and determine where to locate new plants and offices. Scientists can use it as a research tool. Teachers can use it to bring satellite images of the Canadian land mass into their classrooms.

This new Web-based portal advances the way we make maps and do geography. It helps make our geomatics industry, and any business that depends on accurate geographic data, more innovative.

With this new source of geospatial information, companies can move up a step and create value-added applications that make them more competitive in the knowledge economy of the 21st century. These applications, in turn, can make the domestic market more efficient and lead to greater international competitiveness.

Canada is already globally recognized for developing Geographic Information Systems applications in municipal planning, agriculture, business geographics and natural resource development. And Canadian firms are world leaders in the development of land information registration systems. Now, Canada is among the first countries in the world to make such data freely available to its citizens to use as they will.

Countries such as Brazil, Chile, Peru, Mexico and Venezuela may also find these applications useful. I have mentioned only a few countries, but spatial data infrastructures and land information systems have applications in all countries.

8. GEOINNOVATIONS

A third initiative under GeoConnections is called GeoInnovations. This program focuses on the ability of the Canadian geomatics industry to develop advanced geomatics technologies and applications with the private sector, and accelerate connection of public-sector databases to the infrastructure.

Some 90 percent of Canada's geomatics industry is made up of small and medium-sized businesses. They are very innovative and resourceful. But most new technology companies require more resources to bring concepts from research to products and services in the marketplace.

GeoInnovations helps provide funding for such projects. For every dollar GeoInnovations invests, the companies and other partners put up another two. The combined expenditure has had a major impact on the number, size and timing of projects, and helped keep Canadian companies at the forefront of spatial data infrastructures and land information systems.

It is estimated that GeoInnovations projects have added $12 million worth of business to the Canadian geomatics industry. One of the major benefits has been the increased collaboration among small businesses and other stakeholders.

In many cases, the stakeholders help create the demand "pull" that complements the supply "push" from the new ideas and technologies coming from the small businesses. The resulting tools, applications and services have expanded and improved the data sets available on the Internet.

9. GEOSKILLS

This leads me to a fourth GeoConnections initiative — GeoSkills. The Canadian geomatics industry is projected to grow by 10 to 20 percent a year for the next five years. So the industry needs a consistent source of new, highly skilled workers.

The GeoSkills program responds to the demand for highly qualified geomatics professionals by creating an Internet-based information clearing house to match available skills and job opportunities, and by developing internship and skills-development opportunities. The program also sponsors students and recent graduates to attend geomatics conferences.

10. ATLAS OF CANADA

One of the basic GeoConnections initiatives has been the creation of an on-line Atlas of Canada. The Atlas program operates by relying on various stakeholders to generate the data. As a result, creating the Atlas has nurtured many partnerships among departments.

From the on-line Atlas, Internet users can access geographical information that provides insight into themes ranging from climate change to population growth, or from health care to industrial development. Information is not presented just as maps. It is truly multimedia, with additional interpretive information available, if required.

11. SUSTAINABLE COMMUNITIES INITIATIVE

As the sixth example of a GeoConnections initiative, let me describe how one program is making a real difference in the lives of Canadians and the future of Canadian communities. The Sustainable Communities Initiative provides rural, coastal, Aboriginal and northern communities with modern mapping technologies to make informed decisions for sustainable development.

Information from the Canadian Geospatial Data Infrastructure enables community leaders to:
- understand their own development needs and potentials;
- stimulate local innovation;
- enhance the local economy; and
- make community and land use planning decisions.

Let me give you an example. On the east coast of Canada, there is a fishing community at the mouth of the Miramichi River in the province of New Brunswick. The intent of the Sustainable

Communities Initiative here was to improve the water quality of its estuary, so as to extend the harvesting area for oysters.

Through a grant of data, a geographic information system and training, the Sustainable Communities Initiative has given community leaders the tools to understand the local situation and plan the appropriate actions. The sources of pollution were identified, and remediation plans proposed and tested.

The result is that an additional 15 square kilometres of the estuary were opened for harvesting, the health of the environment was improved and the community hopes to attract even more tourists to this very beautiful part of Canada.

The Sustainable Communities Initiative originally committed to completing 100 projects, but the program has received such strong interest from communities across Canada that we have now exceeded 109 projects.

Clearly, there is a pent-up demand for geomatics capacity. Once communities realize what can be made available, they want to be involved. We have even received expressions of interest in adapting a Sustainable Communities Initiative from other countries.

In addition, some 250 agencies have been involved in these projects. This demonstrates the ability of the program to build partnerships and networks beyond the communities themselves. This has spin-off benefits beyond the mandate of the initiative.

12. GEOPARTNERS

As the seventh and final example, GeoPartners is a federal, provincial and private-sector initiative that encourages the transfer of technology from government to the private sector.

13. CONCLUSION

Ladies and gentlemen, over the past years, Canada has gained a great deal of experience in modernizing our spatial data infrastructure. The Government of Canada has found a unique way of building this infrastructure, which includes:

- a strong focus on the business model and business case including a detailed cost/benefit analysis;
- an evolutionary approach that allows for easy replacement as new technology evolves;
- the use of open systems, concepts and technologies;
- a distributed infrastructure to ensure interoperability; and
- most important, strong government–industry collaboration and partnerships.

The result has been a Canadian Geospatial Data Infrastructure that brings enormous benefits to our country.

Canadian companies have responded to the challenge of working with governments to build our spatial data infrastructure and land information system. And I believe their experience could be very useful in Latin America. They have the expertise and tools that you can adapt to your needs in building your own systems.

These companies, along with NRCan, have experience in helping other countries in Asia, Latin America and Africa in developing their data infrastructure.

So I invite you to meet these companies and representatives from Canadian universities and from my department to discuss Canadian expertise in spatial data infrastructures and land information systems, and how we can work together.

Thank you.