National Satellite Initiative
First Call for Applications for Access to Satellite Capacity

1. Introduction

On October 5, 2003, Allan Rock, the Minister of Industry and Minister responsible for Infrastructure, announced the launch of the $155-million National Satellite Initiative (NSI). The NSI is a joint initiative of Infrastructure Canada, Industry Canada, and the Canadian Space Agency (CSA). The NSI will provide capacity via satellite to communities located in the Far and mid-north, and in isolated or remote areas of Canada, which cannot receive broadband services in any other form than satellite. Expanding broadband access will enable these communities to benefit from essential services, particularly in the areas of health, education and e-government.

As such, Industry Canada (the Department) is now inviting applications for the first round of the NSI. Capacity for this round amounts to one transponder (approximately 30 MHz), available from Telesat Canada, and is to be allocated by the Department, for use primarily by **public institutions** and community-based applications. Public institutions are institutions that provide public services such as health, education, social services, justice and governance.

The Department is using a comparative review process to distribute the satellite capacity to eligible applicants who best meet the selection criteria. The Department is contributing satellite capacity only. Applicants are responsible for all costs associated with implementing and operating their project. Service providers are not eligible to apply, though eligible applicants are expected to have selected a service provider to deploy and manage the satellite capacity.

The capacity will be available in early 2004, readiness to deploy and use the satellite capacity will be a major consideration in selecting recipients.

Applications submitted to the Department should demonstrate that applicants have:

- Clearly outlined project scope, including a needs analysis and anticipated benefits;
- Outlined a detailed rationale for the amount of capacity requested that is consistent with the needs analysis;
- Engaged the community(ies) and public institution(s);
- Demonstrated a readiness to deploy and use the satellite capacity;
- Demonstrated a technically feasible and reasonable implementation plan;
- Arranged the required funding and/or capital investment;
- Demonstrated a sustained financial capability to support on-going operations;
- Experience managing similar projects; and
- Demonstrated, if applicable, that the additional capacity will be complementary to, and not a replacement of, existing service arrangements.

For more details on selection criteria please see Application Guide (*hyperlink needed*)

This *Call for Applications* constitutes Round 1 of the NSI. Beginning in 2004, the Department will be issuing calls for applications for access to additional satellite capacity as part of future rounds of the NSI for a variety of frequency bands. The Department intends to follow a similar approach for subsequent rounds, but reserves the right to make modifications as necessary.

Application Guide NSI Round 1

2. Elements to Include
Applications submitted to the Department will be evaluated against the following selection criteria.

2.1 Eligibility
Eligible communities are communities where satellite is the only means of providing broadband access. Applicants must demonstrate that the community(ies) in the Application meet this requirement.

Eligible applicants are entities who act on behalf of the eligible community(ies), to whom the satellite capacity will be allocated and who will be accountable for its use. Eligible applicants may include governments, legally incorporated not-for-profit Canadian organizations, and Aboriginal Communities. Only one applicant may represent an eligible community(ies).

Service providers are not eligible to apply.

2.2 Project Description and Benefits
The Application must demonstrate that the proposed deployment is based on a realistic assessment of community needs, including an overview of the planned services to be provided, as well as the anticipated benefits.

- Project Scope: Provide a clear outline and explanation of the project, its milestones and timelines (please complete the Summary of Project Information, Tables 2.1 and 2.2, in Appendix III).
- Needs Analysis: Demonstrate that a needs assessment has been conducted, that the proposed broadband deployment is required in the community(ies), and that satellite is an essential component of the proposed network. In stating the required capacity, the needs assessment must take into account the existing level of connectivity currently available in the proposed communities.
- Benefits: Provide a realistic range of anticipated social, economic and cultural benefits that will result from this project.

2.3 Capacity Requirement
The Application must provide a detailed rationale for the amount of capacity requested, consistent with the needs analysis, including the name(s) of the community(ies) to be served, as well as the following information, on a per community basis and as an aggregate:

- Amount of satellite bandwidth currently being used;
- Amount of satellite bandwidth requested;
- Total number of institutions to be served;
- Number of each type of institution:
    - Education facilities (schools, colleges, etc.)
    - Health facilities (hospitals, clinics, nursing stations, etc.)
    - Government offices (federal, provincial/territorial, municipal/local, band)
    - Community centres
    - Others

2.4 Community Engagement

The Application must demonstrate the extent to which the applicant has the active support of all community stakeholders, including the institutions involved, for implementation of broadband services. Letters of support from each of the community(ies), institutions, and major stakeholders should be included.

2.5 Readiness

The Application must provide a schedule for utilization of the satellite capacity. The applicant is expected to demonstrate that it can quickly deploy the capacity shortly after being granted access by the Department[1].

2.6 Technology

The Application must demonstrate detailed technical plans for the purposes of evaluation, including the following:

- Selected Service Provider: Name, address and contact of satellite service provider (if applicable).
- Satellite Ground Facilities: Describe existing or planned satellite ground facilities, capacity and network topology and gateway facility to be upgraded, modified or built in order to accommodate the transponder capacity. Describe how the required upgrades, modifications or build will be funded and ready within the stated time frame. Describe the service provider and gateway facilities to be used to deploy the transponder capacity. *Scalability should also be included.*
- Internet Backbone: Describe facilities used to connect the satellite gateway station to the Internet backbone.
- Satellite Access Techniques and Efficiency of Use: Describe the proposed satellite access techniques (e.g., TDMA, FDMA, etc.), carrier types, modulation and bit rates, transmission standards (e.g., DVB-S, DOCSIS), and the required bandwidth.
- Community Local Access Facilities (Last Mile): Describe existing or planned network distribution facilities within the community(ies) for the connection of public institutions and others to the satellite earth station.
- Open Access: The terms under which a local third party could connect to the Applicant's facilities to offer their own broadband services.

2.7 Required Funding and/or Capital Investment

The National Satellite Initiative is contributing satellite capacity only. Applicants are responsible for all costs associated with implementing and operating their project. Funding of project implementation costs can consist of cash or capital contributions as well as other sources of funding. The Application must include documentation that the required funding and/or investment has been confirmed for the project.

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[1] Typically 'Readiness' refers to those communities where satellite ground infrastructure is already installed/available, and where capacity can be used within 3 to 4 months.

2.8 Financial Capability

The Application must demonstrate a fully funded implementation and a sustained financial capability to support on-going operations, by including the following:

- Project Costs: Provide realistic cost projections for project management, infrastructure implementation (labour and equipment) costs (please complete Table 1.1 in Appendix I)
- Sources of Funding: Clearly identify all sources and the amount of funds to support the costs of infrastructure and project management, including details of cash and capital[2] contributions (please complete Table 1.2 in Appendix I).
- Sustainability: Demonstrate that there is a long-term (i.e. at least five years) strategy to sustain the services deployed as a result of this project. Demonstrate that issues such as long-term funding and cost projections (please complete Summary of Cash Flow Projections, Table 1.3 in Appendix I), measurability of services, future technology options, risk analysis and mitigation measures have been considered. If not deemed sustainable, the application is ineligible.

2.9 Project Management

The Application must demonstrate that the Applicant possesses sufficient administrative and technical capabilities to successfully implement this project within a few months of being awarded the capacity by the Department (e.g. résumés of the key staff and resources, description of past similar and successful projects). In addition, the Applicant must demonstrate experience in successfully developing and/or implementing satellite based communications projects involving multiple stakeholders from both the public and private sectors.

2.10 Incremental Addition to Existing Service

The Application must demonstrate, where applicable, that capacity acquired through this round will be complementary to, and not a replacement of, existing service arrangements.

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[2] Capital contributions are contributions of capital assets that otherwise would have to be paid for by the applicant.

3. Guidelines for Preparing Submissions

Applications are to be submitted in the form of a project proposal by **January 22, 2004**. They should include clear, concise information that addresses the elements identified above.

Completed applications are to be postmarked and mailed to the National Satellite Initiative at the address noted in section 5 below.

All applications must include hard copies (the original and three copies) and an electronic version on diskette or CD (in either Microsoft Word, Microsoft Excel or Adobe Portable Document (PDF) Format).

The printed versions must be of letter quality, single-spaced with two bound (one double-sided, one single-sided) and two unbound copies on standard letter size 8 1/2 x 11 inches (21.5 x 28 cm) paper, with margins no less than 1 inch (2.5 cm). Complete electronic submissions can be made in Portable Document Format (PDF), Microsoft Word, and Microsoft Excel.

Size of type no smaller than 12 points or 10 characters per inch is preferable.

The title of the project should appear in the upper right-hand corner of each page and each page should be numbered consecutively.

All contact information (complete address, telephone, fax and e-mail) must be included.

In the event that the paper and electronic versions differ, the paper version will be considered the definitive version.

4. Important Dates

The Department anticipates announcing the results of Round 1 of the NSI in the first Quarter of 2004.

5. Contact Information

For further details please contact us:

> **National Satellite Initiative**
> Broadband Office
> Industry Canada
> 300 Slater Street
> Ottawa, Ontario
> K1A 0C8
>
> Telephone: 1 800 575-9200
> E-mail: **broadband@ic.gc.ca**

Appendix I
Financial Information

Table 1.1: Project Costs (Implementation phase only)

	Element	Cost per Community	Aggregate Cost
Community Name:			
1.	Project Management Costs - Labour, office space, legal fees, office equipment, site planning, etc		
2.	Infrastructure Implementation Costs -Labour		
3.	Infrastructure Implementation Costs -Equipment		
Total Project Costs			

Table 1.2: Sources of Funding (Implementation phase only)

Cash or Capital Contributions/Funding from All Sources	Type of Commitment (Cash or Capital)	Committed Funding
Applicant		

Private Sector
  · Community Businesses
  · Service Provider		

Governments
  · Federal (please specify)
  · Provincial/Territorial (please specify)
  · Municipal/Local (please specify)		

Loans (provide details)		
Other (provide details)		
Total Sources of Funding (Should be equal to Total Project Costs, Table 1.1)		

Table 1.3: Summary of Cash Flow Projections

| Year	1	2	3	4	5	Total
Cash flows - Project management and implementation						
Cash provided by:						
Cash contributions – Applicant						
Cash contributions – Private Sector (provide details)						
Cash contributions – Governments						
Loans (provide details)						
Other (provide details)						
Total cash provided						
Cash used for:						
Outlays – infrastructure implementation (labour)						
Outlays – infrastructure implementation (equipment)						
Outlays – project management						
Other (provide details)						
Total cash used						
Annual net increase (decrease) in cash related to Project management and implementation (a)						
Cumulative net increase (decrease) in cash related to Project management and implementation (b)						
Cash flows - Operations						
Cash provided by:						
User revenues (provide details)						
Loans (provide details)						
Other (provide details)						
Total cash provided						
Cash used for:						
Administration (provide details)						
Network maintenance (provide details)						
Purchase and upgrades of equipment (provide details)						
Loan repayments (provide details of interest and principal)						
Income taxes (provide details)						
Other (provide details)						
Total cash used						
Annual net increase (decrease) in cash related to Operations (c)						
Cumulative net increase (decrease) in cash related to Operations (d)						
Annual net increase (decrease) in cash related to Project management and implementation and Operations (a) + (c)						
Cumulative net increase (decrease) in cash related to Project management and implementation and Operations (b) + (d)						

Appendix II
## Technical Information

General Background Information

C-Band Transponder

The C-band capacity will initially be allocated on ANIK E2R, Channel 1A, subject to confirmation by Telesat. It is anticipated that the capacity will be transferred to the ANIK F2 satellite within the next year. As this new satellite will replace ANIK E2R at 111.1°W longitude, the traffic transfer is expected to cause only a short-term disruption and will not require antenna re-pointing. This is a 36 MHz C-band channel. Since guard bands are required to protect users against unwanted interference, the resulting net bandwidth is 30 MHz minus any guard bands between frequency assignments allocated to various successful applicants. The satellite receiving and transmitting antenna patterns (coverage area) are provided in Figure 1 and 2 below for the ANIK E2R satellite. The satellite transponder frequency and polarization chart is provided in Figure 3. Similar coverage and an identical transponder chart are anticipated for ANIK F2.
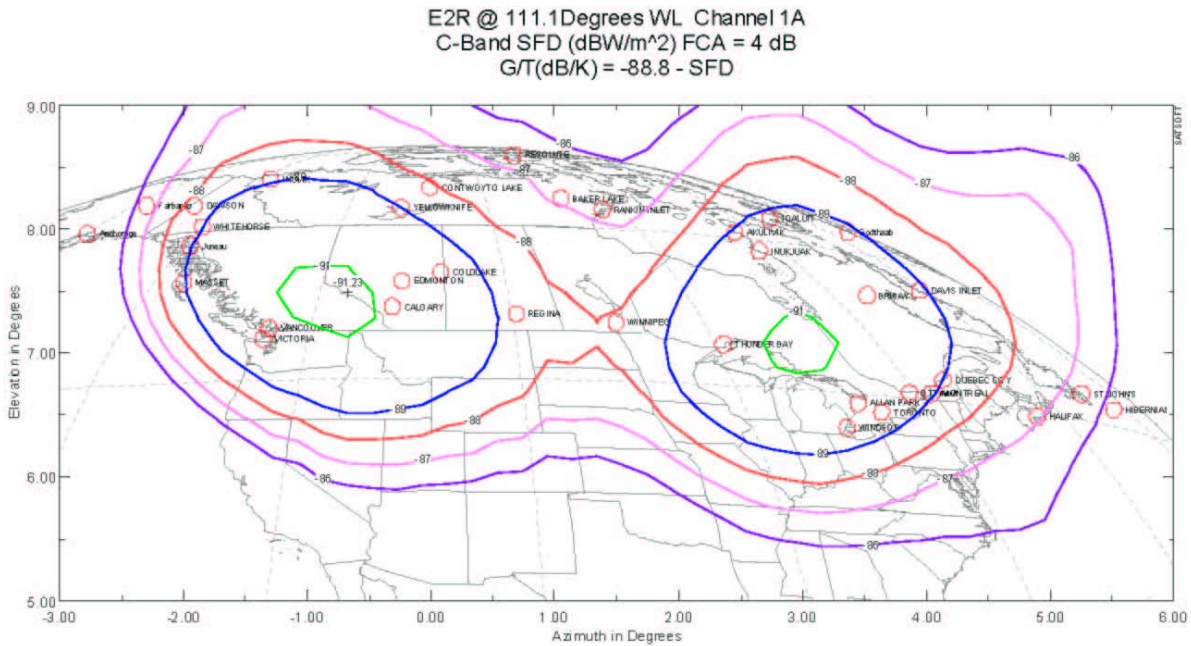
(Values based on Nominal and Beginning of Satellite service. The effects of satellite antenna thermal distortion errors, measurement errors, satellite aging effects, and atmospheric conditions are not accounted for.)

Figure 1 ANIK E2R Contour Map
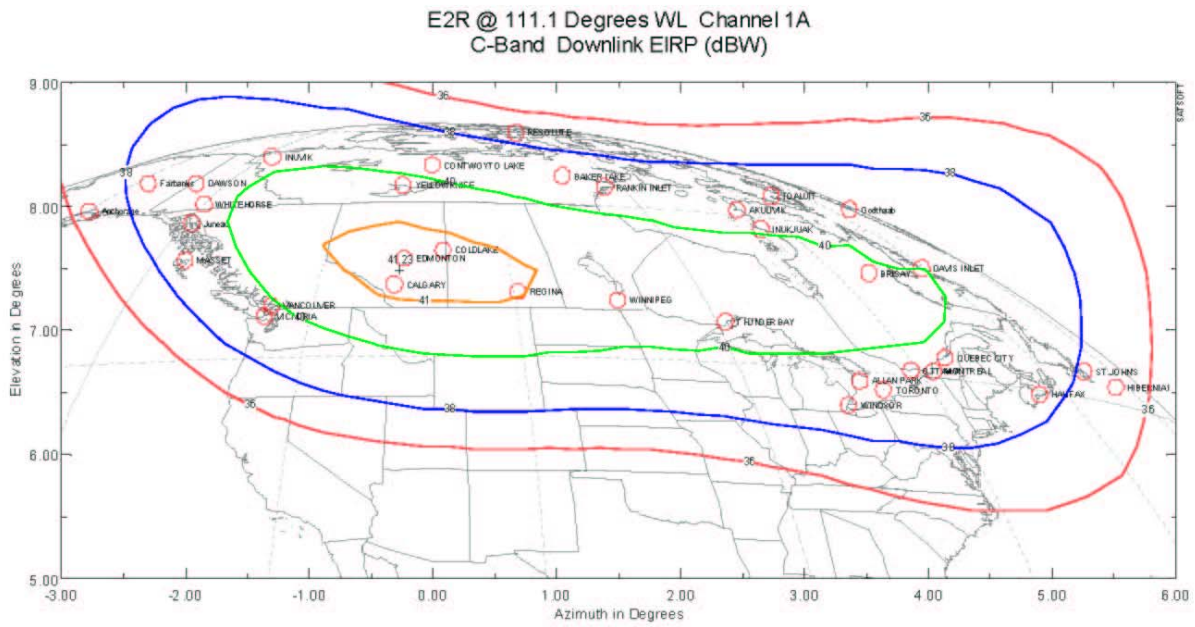
E2R @ 111.1 Degrees WL Channel 1A
C-Band Downlink EIRP (dBW)

(Values based on Nominal and Beginning of Satellite service. The effects of satellite antenna thermal distortion errors, measurement errors, satellite aging effects, and atmospheric conditions are not accounted for.)

Figure 2 ANIK E2R Contour Map (Downlink)

Telesat

C-Band Centre Frequencies

Uplink: Vertical Polarization
Downlink: Horizontal Polarization

Channel 1A	Channel 2A	Channel 3A	Channel 4A	Channel 5A	Channel 6A	Channel 7A	Channel 8A	Channel 9A	Channel 10A	Channel 11A	Channel 12A
						National					
5945 3720	5985 3760	6025 3800	6065 3840	6105 3880	6145 3920	6185 3960	6225 4000	6265 4040	6305 4080	6345 4120	6385 4160

A - POLARIZATION

Uplink: Horizontal Polarization
Downlink: Vertical Polarization

Channel 1B	Channel 2B	Channel 3B	Channel 4B	Channel 5B	Channel 6B	Channel 7B	Channel 8B	Channel 9B	Channel 10B	Channel 11B	Channel 12B
						National					
5965 3740	6005 3780	6045 3820	6085 3860	6125 3900	6165 3940	6205 3980	6245 4020	6285 4060	6325 4100	6365 4140	6405 4180

B - POLARIZATION

Traffic Planning

July 19, 1996

Figure 3 ANIK E2R Channel Chart

Appendix III
Summary of Project Information

Table 2.1: Project Information

Requested Capacity	Total Project Costs	# Communities

Table 2.2: Community Information

Community Name	Community As Listed by Broadband Program[3]	Aboriginal (yes/no)

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[3] As listed http://www.broadband.gc.ca/maps/index.html