

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE CANADIAN SPACE AGENCY

AND

THE CANADA CENTRE FOR REMOTE SENSING

CONCERNING

**TECHNOLOGICAL AND OPERATIONAL SERVICES, AND APPLICATION
DEVELOPMENT SUPPORT ACTIVITIES UNDER THE EARTH AND ENVIRONMENT
SERVICE LINE OF THE CANADIAN SPACE PROGRAM**

This Memorandum of Understanding replaces the previous Memorandum of Understanding between the Canadian Space Agency, and Energy, Mines and Resources Canada signed 19 December 1990.

June 20 2001

SECTION 1 - INTRODUCTION

1.1 The Canadian Space Agency ("Agency" or "CSA") and the Canada Centre for Remote Sensing ("Centre" or "CCRS") of Natural Resources Canada ("Department" or "NRCan") (hereinafter referred to as the "Party" or "Parties"), acting as elements of Her Majesty's Canadian Government ("The Crown"):

- a) considering their historic cooperative relationship in furthering space and Earth Observation related technology and application activities; and
- b) recognizing the mutual scientific, technological, industrial and economic benefits to be gained from cooperative activities;

will collaborate in areas of mutual interest under the Earth and Environment service line ("E&E") and possibly under other pillars of the Canadian Space Program ("CSP") in accordance with this Memorandum of Understanding ("MOU").

1.2 The purpose of the MOU is to establish an agreement between the Agency and the Centre as to their respective responsibilities in relation to the E&E, and possibly the activities of other service lines, as defined in the CSP.

SECTION 2 – DEFINITIONS

Earth Observation Programs: means all space and ground segment and applications projects and activities of the E&E of the CSP including other related activities, other than the programs, projects and activities of the Department of National Defence.

Technical Information: means recorded information, regardless of form or characteristic, of a scientific or technical nature; it may be, for example, experimental and test data, sensor data and imagery, specifications, designs, processes, techniques, inventions (whether patentable or not), technical writings, sound recordings, pictorial reproductions, drawing and other graphic representations, magnetic tapes, computer software in human and machine readable form, computer memory print-outs, or data retained in computer memory, and any other relevant technical data, in whatever form presented and whether or not copyrighted.

Background Technical Information: means Technical Information that is necessary to or useful in achieving the objectives of a specific contract, project, program or agreement, but that was generated prior to or outside the scope of the MOU.

Foreground Technical Information: means Technical Information that is generated in the course of a specific contract, project, program or agreement under the MOU.

Tangible Results: means prototypes, samples, specimens, equipment, systems, and the like that are produced, constructed or procured in the course of a specific contract, project, program or agreement under an Annex to the MOU.

SECTION 3 - PRINCIPLES, OBJECTIVES AND SCOPE

- 3.1 The MOU defines the general principles of cooperation concerning research, development, test, demonstration and evaluation activities, and technological and operational services between the Parties. Specific areas of cooperation or activities of common interest within the framework of the MOU will be usually documented in the form of Annexes ("Annex" or "Annexes") to the MOU.
- 3.2 The objectives of the cooperation are to advance the knowledge or capability of the Parties, to maximize the return on resource investment while minimizing the amount of duplication of effort by the Parties in activities of mutual interest, and to help plan future elements of the CSP.
- 3.3 The Parties agree to cooperate to ensure that the objectives of the CSP in general and of the E&E in particular are met to the greatest degree possible. The overriding objectives of the CSP are:
 - To develop and apply space science and technology to meet Canadian needs; and
 - To develop an internationally competitive space industry in Canada.

In the E&E the Parties will use space technologies to understand, monitor, predict and protect the Earth and its environment and to ensure that Canadian industry maintains its world leadership in capturing the emerging global Earth observation market. Using space-based applications to respond successfully to the challenges of a changing planet contributes to the achievement of the Parties objectives in the following areas:

- Understanding, monitoring and predicting the Earth's environment and global climate change in accordance with international commitments;
- Facilitating, helping and promoting the use of spaceborne information in federal and provincial departments operations;
- Maintenance of Canada's position as a world leader in commercial sales of spaceborne technologies, products and services;
- Enhanced management of Canada's natural resources using spaceborne, mainly radar and hyperspectral data; and

- Use of satellite information services for disaster management and marine surveillance. ✓
- 3.4 This MOU does not preclude the Parties from undertaking pursuant to their respective mandate and at their own cost, any activities that are not explicitly covered by the Annexes of this MOU.
- 3.5 Multilateral cooperation in the context of the Interdepartmental Committee on Space shall be determined by the Terms of Reference of that Committee.
- 3.6 Multilateral cooperation in other areas, such as membership on a Major Crown Project Planning and Implementation Committee shall be governed by the relevant agreements and directives for that activity.
- 3.7 The MOU recognizes that the Centre has a long-standing involvement in the Earth Observation Programs of the CSP, has been responsible for the planning, development and implementation of Canada's remote sensing ground infrastructure and has contributed importantly in application programs.
- 3.8 Both the Agency and the Centre have important responsibilities in the Earth Observation Programs of the CSP as briefly described in Sections 4 and 5 below. In exercising the required leadership, the Parties agree to act in cooperation with the interest to avoid duplication in the use of resources.
- 3.9 The application of the MOU and its Annexes by the Parties is subject to national laws, government policies and procedures, and directives that may be issued by their respective Ministers.

SECTION 4 – RESPONSIBILITIES OF THE AGENCY

The Agency shall for the purpose of the MOU and consistent with the applicable legislation:

- 4.1 assist the Minister of Industry in coordinating the space policies and programs of the Government of Canada;
- 4.2 plan, direct, manage and implement programs and projects relating to scientific and/or industrial space research and development, and the application of space technology;
- 4.3 cooperate with the space and space-related agencies of other countries in the peaceful use and development of space;
- 4.4 promote the transfer and diffusion of space technology to and throughout Canadian industry;

- 4.5 encourage commercial exploitation of space capabilities, technology, facilities and systems for the benefit of Canadians;
- 4.6 ensure that a coordinated and vigorous public information and awareness program is carried out;
- 4.7 Cooperate with other government departments in the implementation of the of CSP; and
- 4.8 Implement an appropriate CSP Management Framework, which includes: the CSA Advisory Council, an E&E Advisory Group (E&E-AG) and one or more E&E Programs Management Board (PMB).

SECTION 5 – RESPONSIBILITIES OF THE CENTRE

The Centre, for the purpose of the MOU and consistent with applicable legislation, shall:

- 5.1 ensure the reception, archiving, processing and dissemination of Earth Observation data of Canada, and its offshore and surrounding areas;
- 5.2 promote the effective use of Earth Observation data by conducting research, demonstrations, and training on the techniques used to interpret and apply such data, and to transfer the associated technologies to the users and Canadian industry;
- 5.3 foster the growth of related expertise in both the public and private sectors thereby contributing to the development of the Canadian economy and international trade; and
- 5.4 participate in the CSP Management Framework including membership in the E&E-AG and the E&E PMB.

SECTION 6 – AREAS OF MUTUAL INTEREST

- 6.1 In discharging their respective responsibilities described above the Agency and the Centre may cooperate in activities on the basis of Annexes to the MOU, or where the level of cooperation would not require the creation of a specific Annex or an amendment to the MOU, on the basis of written arrangements between officials of the Parties that will be referred to as other areas of CSA-CCRS collaboration.
- 6.2 The following is indicative of general areas of mutual interest of the Parties:
 - Space-based technology and system development
 - Ground-based technology and system development

- Reception, archive, processing and dissemination of remote sensing data
- R&D, applications development and demonstration
- Technology transfer, industrial development, industrial competitiveness
- International positioning
- National and international cooperation
- Public awareness and communications

6.3 The Parties will always assume that industrial competitiveness and benefits to Canadians are at the forefront of the objectives of any cooperation initiative; they will cooperate to track benefits from relevant government investments.

SECTION 7 – ANNEXES

The Parties may agree to add Annexes to the MOU, which address specific cooperative activities. All Annexes shall be an integral part of the MOU and shall be subject to the MOU.

7.1 An Annex may set forth, among other things the following contents:

- The definition of the objectives of the cooperation;
- The division of tasks and related responsibilities between the Parties;
- The management of cooperative activities;
- The plan for the execution of the activity;
- Resource commitments of each Party and transfers of resources including the transfer of personnel;
- Specific provisions for the amendment, extension and renewal of the Annex;
- Disposition of Technical Information and Tangible Results; and
- Points of contact.

7.2 No new activities that would necessitate additional CSP resources or commitments are to start until appropriate authorization are provided by CSA, which determines when it is

necessary to seek authorization from the CSA Program Review and Advisory Board (PRAB) and/or the CSA Executive Committee.

- 7.3 Each Party will appoint an officer for each Annex. Unless indicated otherwise, these individuals will be responsible for all activities undertaken within their respective organizations in support of an Annex.
- 7.4 An Annex shall be agreed to and signed by the designated Director General of the Agency and the Director General of the Centre.

SECTION 8 – EXCHANGE OF INFORMATION

- 8.1 Each Party shall designate and confirm to the other in writing, a point of contact (the “Representative”) for formal communication on matters covered by the MOU.
- 8.2 For the purpose of implementing efficiently the MOU, the Parties agree to make all reasonable effort to share in a timely fashion information on relevant issues and opportunities that may be of interest or concern to the other, for example:
- Information on federal and provincial policies, programs, projects and proposals,
 - Information on markets, clients, private sector, requirements, trends and initiatives, and
 - Information concerning international organizations, plans, trends, activities and technology.
- 8.3 Each Party agrees to solicit the views and opinions of the other with a view of agreeing, whenever possible, on a common position on issues of mutual interest.
- 8.4 Exchange of information will take place directly between the officers responsible for the Annexes unless otherwise defined in the appropriate Annex.
- 8.5 Classified and designated information exchanged between the Parties will be released, handled, stored and safeguarded in accordance with the “Security and Policy Standards” issued by the Treasury Board Secretariat.

SECTION 9 - RESOURCES

- 9.1 Unless otherwise agreed by the Parties and, in any event, subject to the provisions of Paragraph 9.2, the Agency will enter into administrative arrangements with the Centre for the management of the funds approved for each program and on an annual basis. An

initial transfer in the order of 25% or based on a financial commitment forecast will occur in the beginning of the year and the balance of the funds will be released by the end of September, so as to allow projects to start or for operation activities to continue.

- 9.2 Notwithstanding any other provision of this MOU, resources committed under this MOU and its annexes are subject to re-assignment by the President of the Agency. In such an event, the President will undertake to consult with the Assistant-Deputy Minister of NRCan Earth Sciences Sector before effecting such re-assignment.
- 9.3 The MOU may set additional financial obligations on the Parties as specified in the Annexes. Cost recovery from a Party, if applicable, will be in accordance with Treasury Board directives; cost recovery funds will be shared between the Parties proportionally to their involvement unless otherwise specified in the applicable Annex.
- 9.4 The Parties may exchange personnel in order to fulfil the purpose of the MOU. The receiving Party will pay related charges unless the exchange happens in the context of an Annex for which case the conditions specified in the Annex will prevail.
- 9.5 Royalties accruing as a result of technology transfer will be shared proportionally to their involvement unless otherwise specified in the applicable Annex.
- 9.6 Financial Reporting: The Centre will provide a monthly financial report to the Agency fifteen (15) calendar days following the end of the month. The Centre will also provide a detailed invoice according to the Agency's requirements and to the related workplan.

SECTION 10 – IMPLEMENTATION OF THE MOU

- 10.1 Implementation of the MOU shall be subject to the overall policy direction of the respective Ministers of the Parties.
- 10.2 The President of the Agency and the Assistant Deputy Minister of NRCan Earth Sciences Sector, or their Representatives, will meet once a year to review the cooperation of the past year and to consider the plans and budgets for the upcoming year. There may be other meetings of the Parties during the year as stated in the Annexes and by mutual agreement. The Parties are responsible for producing and maintaining minutes of meeting and for producing a yearly report of activities and issues.
- 10.3 Unless otherwise stated in the appropriate Annex, the respective roles and responsibilities for public relations and communications activities related to cooperative activities will be based on the following principles:

- a) The Agency will have approval authority for overall public relations and communications plans and will play the lead role and be responsible for activities related to the space segment and technology, and
- b) The Centre will play the lead role and be responsible for activities related to the ground segment and applications in areas, which are under its direct leadership and management consistent with this MOU and Annexes.

In any public relations and communications activities, the Parties will systematically acknowledge the contribution of the other Party and will seek the approval of that Party, which should be provided in a timely fashion. However the approval process should not unduly block processes.

- 10.4 Any dispute concerning the interpretation or implementation of the MOU or any Annex to it that cannot be resolved by the President of the Agency and the Assistant Deputy Minister of the Earth Sciences Sector of NRCan shall be referred to their respective Ministers.

SECTION 11 - TECHNICAL INFORMATION AND TANGIBLE RESULTS

- 11.1 Technical Information utilized and Tangible Results generated pursuant to activities under the MOU will be covered by the provisions of this Section unless otherwise determined by the Parties in the applicable Annex.
- 11.2 Subject to third party rights, each Party will make available, without charge, Technical Information which it owns or controls as is necessary for activities under the applicable Annex for use by the other Party. Where Technical Information owned by a third party is unavailable to the Parties free of charge, the Party requiring the Technical Information shall make every effort to obtain the right to use such Technical Information for government purposes under the best terms and conditions. The cost of acquiring those rights will be borne by the Party requiring the Technical Information or may be shared between them if provided for in a specific Annex.
- 11.3 Government Intellectual Property policy will apply to procurement contracts. In situations where the Intellectual Property is to remain under Crown ownership, the CSA will be responsible for protection, management and commercialization, unless provided otherwise in a specific Annex.
- 11.4 When a Party receives administration and control of any Foreground Technical Information and Tangible Results arising from activities under this MOU, the Party shall

have the right and the obligation to use its best efforts to protect, manage and commercialize such Foreground Technical Information.

- 11.5 Unless otherwise specified in the applicable Annex, cost of protection of the Foreground Technical Information will be borne by the Party who is holding its administration and control. The cost of seeking said protection may be recovered from any revenue generated by the commercialization of the Foreground Technical Information to which the protection applied. If insufficient revenue is generated from such Foreground Technical Information, those costs will be absorbed by the Party that has incurred them.
- 11.6 If the commercialization of Foreground Technical Information requires the granting access to some Background Technical Information that is under the control of one of the Parties, that Party shall act reasonably to make that Background Technical Information available on customary commercial terms in a distinct transaction. The Party who licences Background Technical Information is entitled to all revenues from that transaction.
- 11.7 Any disclosure to a third party by the Party responsible for administration and control of is to be subject to an obligation of confidentiality and non-use, unless that is waived by the holding the Party.

SECTION 12 - DURATION, RENEWAL AND TERMINATION

- 12.1 The MOU is valid for an initial period of five (5) years from the date of execution and shall be automatically extended for similar periods, unless a Party informs the other Party in writing of its intention one (1) year in advance that it wishes not to extend the MOU.
- 12.2 If one of the Parties considers it necessary to terminate the MOU, or an Annex to the MOU, the following provisions will apply:
- a) it will inform the other Party in writing of its intention one (1) year in advance. Meanwhile, the work will continue and the Parties will consult thoroughly to consider the consequences of such termination;
 - b) the provisions of the MOU or Annex shall continue to apply for the period and the extent necessary to complete the implementation of any specific cooperative activities that may already have been agreed upon pursuant to Section 6 of the MOU or to complete any contracts in progress; and
 - c) the Parties will reach a mutual agreed determination for disposing of any obligations binding on The Crown or rights, or licensing fees accruing from any licence agreement then existing, before termination under Paragraph 12.1 or 12.2 is effective.

12.3 The respective responsibilities of the Parties regarding the security of all classified information and material exchanged or generated under the MOU and, the protection from communication or disclosure of Technical Information will continue irrespective of the termination or expiration of the MOU or any of its Annexes.

SECTION 13 - AMENDMENT

The MOU may be amended at any time by the written agreement of the Parties. Annexes may be added, amended, supplemented or terminated at any time, through the mutual written consent of the authorities described in Section 7 of the MOU.

SECTION 14 - EFFECTIVE DATE

14.1 The MOU will enter into effect on the date of the last signature.

14.2 The MOU is executed in two original copies both of which are equally authentic.

For the Canadian Space Agency

For Natural Resources Canada

W.M. (Mac) Evans
President

Irwin Itzkovich
Acting Assistant Deputy Minister
Earth Sciences Sector

Date: June 28, 2001

Date: June 28/01

Attachment A – List of Annexes

ATTACHMENT A - LIST OF ANNEXES

| Annex Number | Annex Title | Date |
|---------------------|---|-------------------|
| 2000-1 | RADARSAT-1 Data Reception, Archive and Dissemination Services | 11 September 2000 |
| 2000-2 | The RADARSAT-2 Project Ground Infrastructure Upgrade (Schedule F-3 – MOU between CSA and NRCan for RADARSAT-2 Master Agreement between MDA and the CSA) | 7 July 2000 |
| 2000-3 | Satellite Station Infrastructure (ERS-1/2 and ENVISAT) | 11 September 2000 |
| 2000-4 | Earth Observation Applications Development and Technology Transfer | 11 September 2000 |
| 2000-5 | Earth Observation Applications in Climate Change and Ecosystem Impact | 11 September 2000 |
| 2000-6 | Canadian Participation in Foreign or International Earth Observation Programs (excluding the Programs of the European Space Agency) | 11 September 2000 |
| 2000-7 | Canadian Participation in the European Space Agency Earth Observation Programs | 11 September 2000 |
| | | |
| | | |