THE CANADIAN SPACE AGENCY

2001-2002 Estimates

REPORT ON PLANS AND PRIORITIES

Brian Tobin
Minister of Industry

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SECTION I: MESSAGES

1.1 MINISTER'S PORTFOLIO MESSAGE

Our vision of Canada is a country that is strong and dynamic, a leader in the global knowledge-based economy, and a country where all Canadians have the opportunity to benefit from economic and social prosperity.

That is why the government is investing in knowledge and innovation-- fundamental contributors to our quality of life. Through strategic investments in skills development, knowledge creation and new technologies the government is committed to expanding Canada's knowledge base, innovation and research capacity, and accelerating Canada's leadership in the new economy.

The government's strategy of investing in knowledge and innovation is already helping to create new businesses, products, processes and jobs. The fifteen organizations within the Industry Portfolio contribute to economic growth, which leads to a higher quality of life and social well-being for all Canadians.

The Industry Portfolio is ...

Atlantic Canada Opportunities Agency
Business Development Bank of Canada*
Canadian Space Agency
Competition Tribunal
Copyright Board Canada
Canada Economic Development for Quebec Regions
Canadian Tourism Commission*
Enterprise Cape Breton Corporation*
Industry Canada
National Research Council Canada
Natural Sciences and Engineering Research Council of Canada
Social Sciences and Humanities Research Council of Canada
Standards Council of Canada*
Statistics Canada
Western Economic Diversification Canada

* Not required to submit Reports on Plans and Priorities

With over forty percent of the federal government's science and technology funding and many of the key micro-economic levers at its disposal, the Industry Portfolio is instrumental in promoting innovation through science and technology; helping small- and medium-sized enterprises grow; encouraging trade and investment; and promoting economic growth in Canadian communities.

I am pleased to present the Report on Plans and Priorities for the Canadian Space Agency (CSA) which describes for Canadians the expected achievements over the next three years. The CSA will achieve the expected results outlined in this report through the implementation of the following three key strategies: the advancement of knowledge with programs such as *Space Science* and *Canadian Space Station* to position Canada in the world-wide exploration and utilization of space; the development of satellite-based advanced multi-media and mobile communications products and services to position our industry on this expanding international market; and the development of Earth Observation technologies to maintain Canadian leadership in the emerging market for satellite-based environment monitoring and resource management products and services.

Through organizations like the Canadian Space Agency, we will work together to build on the strengths and opportunities that exist throughout Canada.

The Honourable Brian Tobin

1.2 MANAGEMENT REPRESENTATION

Report on Plans and Priorities 2001-2002

I submit, for tabling in Parliament, the 2001-2002 Report on Plans and Priorities (RPP) for the Canadian Space Agency. To the best of my knowledge the information:

- Accurately portrays the Agency's mandate, priorities, strategies, and planned results in the organization;
- Is consistent with the disclosure principles contained in the *Guidelines for Preparing a Report on Plans and Priorities*;
- Is comprehensive and accurate;
- Is based on sound underlying information and management systems.

I am satisfied as to the quality assurance processes and procedures for the RPP's production.

The Program and Reporting Accountability Structure (PRAS) on which this document is based has been approved by Treasury Board Ministers and is the basis for accountability for the results achieved with the resources and authorities provided.

Name: W.M. (Mac) Evans, President

Date: February 21st, 2001

SECTION II: AGENCY OVERVIEW

2.1 WHAT'S NEW

The resolution of RADARSAT-2 issues has been the most challenging policy endeavour since the tabling of the 2000-2001 Report on Plans and Priorities.

The RADARSAT-2 development program incurred serious delays and additional costs of $167.4 M over the originally approved estimates due to two important events. First, the National Aeronautics and Space Administration (NASA) informed the CSA that it would be withdrawing from this program. Second, difficulties arose with the satellite bus contract which required MacDonald Dettwiler & Associates (MDA) to change the bus contractor.

In order to fund the additional costs ($167.4 M) associated with resolving these issues, the CSA had to proceed with a re-allocation of its priorities, which had a significant impact on its ability to implement some of the new programs included in the Space Plan.

In this context, bilateral and multilateral international co-operation with the world's leading space agencies is increasingly more important to the delivery of the Canadian Space Program (CSP). Further, the rapid evolution of technology in many space fields (notably satellite telecommunications and remote sensing) is generating both new opportunities and greater competition for Canadian companies. As a result, the CSA is facing growing demands from industry and other government bodies to help Canadian firms seize strategic market opportunities.

2.2 MANDATE, ROLE AND RESPONSIBILITIES

2.2.1 Mandate

The CSA, established in 1989, derives its authority from an Act of the Parliament of Canada, the Canadian Space Agency Act, *S.C. 1990, c. 13*, which is "to promote the peaceful use and development of space, to advance the knowledge of space through science and to ensure that space science and technology provide social and economic benefits for Canadians."

2.2.2 Role

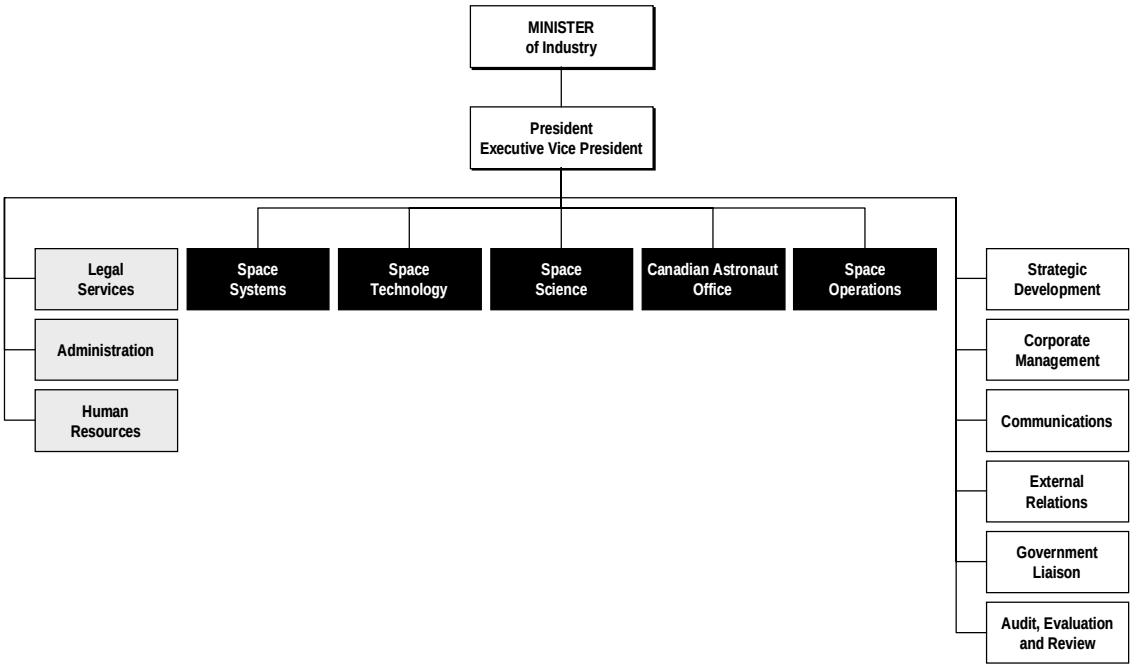
In addition to delivering its own programs, the CSA is responsible for co-ordinating all federal civil space-related policies and programs pertaining to science and technology research, industrial development and international co-operation. This role was set by the Space Policy Framework approved by the Government in 1994.

2.2.3 Responsibilities

Reporting to the Minister of Industry, the Chief Executive Officer of the CSA is the President, to whom five core functions report (black in the chart below): Space Systems, Space Technologies, Space Science, Canadian Astronaut Office, and Space Operations; six executive functions also report to the President (white in the chart): Audit, Evaluation and Review, Corporate Management, Communications, Strategic Development, External Relations, and Government Liaison; as well as three Corporate functions (grey in the chart): Legal Services, Administration, and Human Resources.

The Agency is a relatively small organization of about 400 employees, some 400 contractuals and 50 students. Most of them (770 people) work at the John H. Chapman Space Centre, the CSA headquarters in Saint-Hubert, Quebec. The others (80 people) are located in Ottawa.

CSA ORGANISATION CHART



2.3 AGENCY/PROGRAM OBJECTIVES

Canada's unique geographic and demographic character has inspired Canadians to adapt space science and technology to meet national goals. The Space Policy Framework has recognized the strategic importance of space activities in Canada's transition to a knowledge-based economy. Hence, the overriding objectives of Canada's space activities are to develop and apply space science and technology in order to meet Canadian needs and to develop an internationally competitive space industry.

The Agency achieves these two objectives by implementing the CSP in accordance with the following principles:

- Priority given to developing technologies and applications in the fields of Earth & Environment and Satellite Communications;
- Leverage of federal funding through partnerships with industry for ensuring commercial success;
- Participation of a growing number of firms, particularly small- and medium-sized enterprises (SME), in space related activities;
- Pursuit of sustainable industrial regional development through the use of regional distribution targets as guidelines;
- Promotion of greater synergies between civil and defence space activities for optimizing federal space funding;
- Implementation of national communications and space awareness programs to take advantage of the unique appeal of space for improving scientific literacy among the general public and for promoting careers in science and technology among students.

2.4 PLANNING CONTEXT

The CSP is heavily influenced by international trends and factors intrinsic to Canada, such as the need to communicate over large distances and to manage a broad range of natural resources. The following sections briefly discuss the trends, opportunities and challenges affecting Canada's space programs for each of the seven service lines: Earth and Environment, Space Science, Human Presence in Space, Satellite Communications, Generic/Enabling Space Technologies, Space Qualification Services, and Comptrollership and Awareness.

2.4.1 Earth and Environment (E&E) Service Line

In the 21st century, protecting the Earth's environment and preserving natural resources will become increasingly important to government agendas. These concerns are leading to a rising demand by governments for the capability to monitor the Earth’s environment from space (the most effective way to look at the Earth as a whole) and to further our understanding of climate change and other vital planetary issues.

In addition to the world-wide concern for the environment, the international scene is also dominated by the commercialization of Earth Observation (EO) satellite data, the ensuing need to control better the access to satellite data for national security reasons, and the growing interest in using hyper-spectral technologies for remote sensing from space. Over the upcoming years, Canada will be well positioned to take advantage of those trends due to: an innovative, technologically-advanced industry offering products and services demanded by world markets, a privatized satellite data marketing capability with Radarsat International (RSI), an industry owned, built, and operated RADARSAT-2 with MDA, and a state-of-the-art satellite data reception infrastructure.

In spite of this favourable situation, Canada will nevertheless face significant challenges in the upcoming years in order to maintain its competitive position in the world-wide Earth and Environment market. The principal foreseen challenges are:

- To maintain RADARSAT-2 development within budget and schedule for launch in April 2003. NASAs decision not to launch RADARSAT-2 in exchange for data and the U.S. government's hesitations in providing MDAs parent company (Orbital Sciences Corporation) with the required authorizations to supply the bus for the satellite have seriously delayed its construction and generated additional costs.

- To establish legislation and regulations led by the Departments of Foreign Affairs & International Trade and National Defence, to control access to commercial RADARSAT-2 data and thus, address national security concerns. One of the requirements resulting from this upcoming legislation would be the incorporation of an encryption system in the satellite. This would have to be done without incurring additional costs.

- To pursue RADARSAT-1 operations for two years longer than originally planned, because of the delays in RADARSAT-2 development.

- To select the hyper-spectral sensor mission(s) and partners that will best position Canadian industry in international markets and meet government needs.

- To strengthen the programs supporting Canadian industries by developing satellite data applications for the international markets and allowing government user departments/agencies to adopt satellite-based solutions in their operations. This is an essential element of the strategy to maintain the Canadian industry's competitiveness on the international remote sensing markets, a position threatened by competitors from the U.S. and Europe.

- To launch new initiatives in Atmospheric Environment (e.g., the development of the Canadian Stratospheric Wind Interferometer for Transport Studies (SWIFT), following the invitation of the National Space Development Agency of Japan (NASDA) for its Global Change Observing Mission), despite a situation confronted with budget pressures related to SciSat-1 and CloudSat development.

- To select a micro-satellite mission for the study of the near-Earth environment to help Canada further its expertise in the development of small satellites, which are increasingly used on international space missions.

2.4.2 Space Science Service Line

The *Space Science Program* has been a cornerstone of the CSP from the very beginning with the launch of *Alouette* in 1962. Founded in co-operation with both Canadian and international scientific communities, the Program allows our universities to contribute to the global knowledge base and our industries to enhance their technologies through the development of unique scientific instruments.

The dominant trends affecting the world-wide space science sector over the coming years are: the new era soon to be opened by the utilization of the International Space Station (ISS), the human quest for space knowledge through the New Generation Space Telescope (NGST), and the growing interest in planetary exploration as witnessed by the

numerous planned missions to Mars. Canada should continue participating in international space science activities to provide its scientific community with exciting opportunities. However, Canada faces the following significant challenges in order to maintain its position of excellence in the world-wide exploration and utilization of space:

- The development of payloads, facilities and experiments to prepare Canada for the scientific utilization of the ISS is dependent on the maintenance of an adequate level of resources within the CSAs reference levels, the achievement of cost-effective arrangements with our international partners, and the suitable sharing of ISS resources among scientific and commercial activities.

- Participation in NASAs NGST and the European Space Agency's (ESA) FIRST/Planck space astronomy missions requires that Canada have the necessary funding flexibility to bring scientific and technical excellence to these large international projects.

- Canada's future potential participation in international space exploration missions requires that we carefully study different options for a Canadian contribution (e.g., robotics) to those missions; these early activities will help forge industry-university collaborations and establish the basis for our involvement with international teams.

2.4.3 Human Presence in Space Service Line

Canada has established itself as a vital partner in international endeavours to set a human presence in space with its contribution to building a space station that will be permanently inhabited by a corps of seven experienced astronauts. Under the ISS program, Canada is responsible for the development and construction of the Mobile Servicing System (MSS), the next-generation "Canadarm," which would assemble, service and maintain the ISS. The CSA is also responsible for the operational training of all astronauts using the MSS and for providing an operational support centre in Saint-Hubert. In exchange for this contribution, Canada has gained rights to utilize up to 2.3 % of non-Russian laboratories and crew on-board the ISS.

The exploitation of the space environment and microgravity conditions offers promising potential to advance science and technologies in fields ranging from pharmaceutical to new metals research, from genetic engineering to seed growth and biotechnology research. In order to take advantage of this potential, the CSA has supported the establishment of a scientific community and the development of microgravity experiments (e.g., User Development, Microgravity and Life Science programs), since the inception of the *Canadian Space Station Program* (CSSP) in 1986.

The key challenges likely to arise from the delivery of the CSSP in the coming years are:

- The management of changes to the MSS (mostly in software and training requirements) likely to result from its integration on the ISS; those changes will be managed within the scope of MSS Operations (e.g., the sustaining engineering and training program element).

- The management of significant potential risks in MSS Operations, including the additional responsibilities for MSS repair and overhaul assumed by the CSA in exchange for offsets.

- The adoption and implementation of a policy to encourage the private sector to utilize Canada's ISS rights.

- The ability to pursue the same level of *Canadian Astronaut Program* activity as in the 1990s and thus, to benefit from the astronauts' expertise in space operations.

- The strengthening of Canada's position in niches related to space robotics operations, such as robotics training and tele-operations, which have important implications for Canadian involvement on Space Station and future space exploration programs.

2.4.4 Satellite Communications Service Line

Globalization of the economy has reached the space and defence sectors, which used to enjoy a large degree of protection for strategic reasons. Globalization has driven a restructuring of the world's space industry around a few giant firms capable of producing complete satellite systems and associated services, from design through to launch and operations. Most of those systems are designed to provide world-wide coverage. This situation has generated significant challenges for Canada, particularly in the communications sector where our industry has traditionally built satellites to meet domestic market needs.

The Canadian industry is re-deploying itself as a supplier of sub-systems and components in the growing international market for space-based multi-media and mobile personal communications. For instance, Canadian companies (e.g., EMS Technologies, Norsat and SpaceBridge) have developed leading technologies for the multi-media ground segment and have already won significant international contracts. This strategy offers tremendous market opportunities, providing that Canadian companies keep enhancing their product lines. A good example of this strategy is the multi-media sector where Canadian companies are investing considerable funds, with support from the CSA and government programs like *Technology Partnerships Canada*, to develop high frequency Ka-band technology sub-systems and components (e.g., on-board multi-plexing/ switching processing).

The challenges faced by the satellite communications sector in the upcoming years are the following:

- Important private and government Research and Development (R&D) investments are necessary to maintain the Canadian industry's competitiveness in its traditional market niches with international suppliers; the ability to join international companies or consortia early in the development of a project with R&D funding is the major condition for success.

- In the near future, Canada will be faced with significant choices as to which new space and ground niche markets to pursue over the long-term. The CSA will have strategic decisions to make in order to leverage the industry investments most suitable

to take advantage of opportunities in the international market for space-borne applications and ground facilities, to increase Canadian content in promising new initiatives and to maintain partnerships with European prime contractors through participation in ESA programs.

2.4.5 Generic/Enabling Space Technologies Service Line

Globalization is resulting in stronger competition for the Canadian space industry. The CSAs technology development programs should support industry in developing specific niche technologies, establishing links with foreign firms and accessing international markets. The principal challenges in maintaining Canadian manufacturing capabilities during the upcoming years are the following:

- The CSAs ability to strengthen its programs to help industry develop and to demonstrate innovative technologies and advanced systems in response to the significant investments being planned internationally.

- The availability of funds within the Generic/Enabling Service Line to develop current state-of-the art solutions while strongly supporting industry in seizing opportunities related to future space missions or international markets.

- The assurance of an adequate balance in the allocation of the resources between in-house, long-term R&D projects and existing (e.g., RADARSAT-2 and SciSat) and future (e.g., Space Vision System, Space Exploration, and Cloudsat) initiatives.

2.4.6 Space Qualification Services Service Line

The David Florida Laboratory (DFL) provides an environmental test facility capable of meeting the current and emerging needs of Canada's space community and the nation's space related objectives. This capability contributes to the development of a competitive domestic space industry and the recognition of Canada's leadership in space technology and research. This strength has been recently reinforced through the certification of DFL as meeting the international ISO 9002 standards for technology quality services. Issues that continue to affect this Service Line are: the International Trade in Arms Regulations (ITAR) restrictions which hinder the use of DFL services by potential clients, and the allocation of annual budgets at levels enabling DFL to cover both its daily operations and capital equipment replacement.

2.4.7 Comptrollership and Awareness Service Line

Budget 1999 provided the CSA with a stable ongoing funding base for planning and adjusting programs to the rapidly evolving environment. This new funding environment led to the CSAs enhancement of its business practices by implementing risk and project management frameworks, integrating project planning and performance reporting activities in the annual work plan process, and strengthening consultations with stakeholders through the creation of the Board of Advisors and the Service Line Advisory Boards. The principal challenges faced by the CSA in the upcoming years are the following:

- Development of bilateral and multilateral international co-operation to support the delivery of the CSP and industry marketing efforts.
- Meeting the communications requirements for the upcoming Canadian Astronauts' missions for ISS assembly and government-wide priorities such as E-Communications.
- Implementation of the government-wide Financial Information Strategy (FIS) for applying full accrual accounting practices with major impacts on accounting, financial planning and reporting systems.
- Implementation of several key government initiatives such as E-Commerce, government-on-line, modern comptrollership and financial reporting, and program evaluation and audit.
- Implementation of the Universal Classification Standard (UCS) and staff training plans for FIS.
- Management of the increasing number of persons working at CSA headquarters, which generates high pressures on office space, Information Technology services and document management.

2.5 AGENCY PLANNED SPENDING

($ in Millions)	Forecast Spending 2000-2001	**Planned Spending 2001-2002**	Planned Spending 2002-2003	Planned Spending 2003-2004
Total Main Estimates	340.7	**352.4**	301.1	301.1
Adjustments to Planned Spending	(24.1)	**9.4**	0.0	0.0
Net Planned Spending	316.5	**361.8**	301.1	301.1
Less: Non-Respendable Revenue	3.3	**4.6**	4.6	2.6
Plus: Cost of Services Received without Charge	2.4	**2.6**	2.7	2.6
Net Cost of Program	315.6	**359.8**	299.2	301.2
Full Time Equivalents	436	**429**	416	416

Nota:

1) Forecast Spending for 2000-2001 reflects best forecast of total planned spending to the end of the Fiscal Year.
2) Adjustments accommodate approvals obtained since the Annual Reference Level Update and include Budget initiatives.
3) Due to rounding, figures may not add up to totals shown.

SECTION III: AGENCY PLANS, RESULTS, ACTIVITIES AND RESOURCES

3.1 BUSINESS LINE DETAILS

The Agency is organized under a single business line called "Space Knowledge, Applications and Industry Development." Its objectives are stated in section 2.3 above and are achieved through the seven service lines mentioned in section 2.4.

The CSA works with universities and industries across Canada to contribute to and facilitate the advancement of space knowledge; the development of new processes, technologies and applications; and the use and application of space science and technology. These objectives lead to an internationally competitive, export-oriented Canadian space equipment and services sector. In collaboration with other public sector organizations, or on its own, the Agency contributes to the sustainable development of Canada by linking Canadians from coast to coast, by enhancing the management of our environment and natural resources, and by learning how phenomena in space affect life on Earth.

The business line also creates better awareness of the importance of space technology in all regions of Canada and improves co-operation and relationships with space sector organizations throughout the world. Further, the business line involves all initiatives that ensure that the Agency performs its role as the leader of the CSP.

3.2 KEY RESULTS COMMITMENTS, PLANNED RESULTS, RELATED ACTIVITIES AND RESOURCES

The government investment in space over the planning period covered by the RPP is intended to provide Canadians with significant economic, social and environmental benefits. This will be accomplished through the application of space technology, space-based research and knowledge, and core competencies in space sciences. The following table shows the overriding priorities by key results commitments:

Key Results Commitments	Overriding Priorities
Economic benefits to Canadian industry	Completion of MSS and RADARSAT-2 development
Understanding of the environment and contributions to sustainable development	Development of SciSat-1, the first Canadian-built scientific satellite since *Alouette* in 1962.

Key Results Commitments	Overriding Priorities
Contributions to the quality of life	Preparation of the Canadian scientific community to utilize the ISS research facilities
Technological development and diffusion	Development and demonstration of space technologies to enhance industry competitiveness and prepare for future space missions
World-class space research	Development of scientific instruments for participation in the Next Generation Space Telescope (NGST) and the FIRST/Planck missions
Social and educational benefits to Canadians	Training of qualified scientists, engineers, and technicians for the high technology industries
Effective promotion for greater awareness of the Canadian Space Program	Increased profile of Canadian space activities

The following seven sections present the activities with related resources that will contribute to achieving the planned results for each key result commitment over the planning period.

3.2.1 Economic Benefits

The CSA, in co-operation with its government partners, seeks to maintain Canada's world leadership in its traditional space niches (e.g., civilian EO radar technology, space robotics, advanced telecommunications services), to transfer expertise gradually to the private sector, and to support industry development through commercial applications of space technologies. The table shows the manner in which space programs, along with their associated resources, will contribute to the achievement of the planned results for economic benefits for the fiscal years 2001-02 to 2003-04. Also, it should be noted that the technological development and diffusion activities, described in section 3.2.4 below, significantly contribute to generating economic benefits. This point applies equally to the increased industrial competitiveness ensuing from university-industry collaborations on the development of space science instruments as described in sections 3.2.2 and 3.2.5.

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Satellite Communications • Positioning of the Canadian industry as a supplier of multi-media sub-systems (e.g., on-board processing, multi-beam antennas and high rate data transmission) and as a service provider for the next generation of satellite communications on the international market. • A 50% increase in sales for the Canadian satellite communications industry through participation in international consortia. • Increased employment in the satellite communication industry. • As per the Canada/ESA Co-operation Agreement, the Canadian industry accesses the most advanced European technologies and contributes to state-of-the-art expertise to European programs.	• The *Payload Flight Demonstration Program* supports the development and space-qualification of an advanced Ka-band multi-media payload for launch on the Anik F2 satellite in 2002. • The *Ground Segment Technology and Applications Development Programs* co-fund with industry the development of mobile and personal communications, as well as satellite-based multi-media applications, such as tele-education and tele-medicine. • Canada participates in the following ESA satellite communications programs: the *Advanced Research in Communications Systems* (e.g., ARTES-1 Preliminary Studies and Investigations program to support Canadian industry's participation in forward-looking studies on new telecommunications services; ARTES-3 *Global Information Infrastructure Program* to position Canadian industry in future broadband and mobile communications systems; ARTES-5 *Advanced Systems and Technology Equipment Program*; ARTES-9 to support Canadian industry participation in the preparation of the future Global Navigation Satellite System; the *Artemis Program*, a data relay communications satellite to be launched in Spring 2001; and, the Definition Phase of the *GalileoSat Program* to support Canadian industry involvement in the European satellite navigation and positioning system to	26.0 0.3 7.3	21.0 0.3 7.6	21.0 0.4 8.3

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
	be operational in 2008).			
Earth & Environment • RADARSAT-1 to operate at a high performance level until full commissioning of RADARSAT-2 in 2003. • A 10% annual increase in RADARSAT-1 data sales and associated royalty payments to the CSA. • Maintenance of Canada's position as the world leader in commercial space-borne radar technology and applications with RADARSAT-2. • Legislation and institution of a regime to ensure a secure access to RADARSAT-2 data. • Enhancement of reception and processing capabilities for accessing data from new satellites of interest to Canada. • An enlarged competitive Canadian value-added industry able to develop products and services based on EO satellite data for the international market. • Adoption of EO based systems by government user departments/ agencies in	• *RADARSAT-1 Operations* to continue with the same high performance level for satellite reliability, product quality, timely delivery and responsive follow-up to customer requests (e.g., meeting the Canadian Ice Service requirement of 4,000 images per year); update of the landmass coverage as part of the Background Mission; and the addition of foreign stations to the international station network. • *RADARSAT-2 Development* is scheduled to be completed in 2003. Key milestones are: mission critical design review scheduled for Summer 2001, satellite integration and testing at DFL to be completed in 2002, launch in April 2003, and transition of satellite operations to industry in 2003. • *Ground Satellite Station Infrastructure Programs* enhance Canada Centre for Remote Sensing 's (CCRS) data receiving and processing system capabilities for Envisat in 2001, RADARSAT-2 in 2003, and disaster management. • *Data Application Development and Technology Transfer Programs* support industry and government departments in developing and demonstrating Synthetic Aperture Radar (SAR) -based value-added products/services for natural	8.4 68.5 0.9 4.8	7.9 54.0 1.8 10.4	0.0 49.2 5.3 11.1

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
their daily operations. • Business options identified and advanced technologies available for the next generation of satellites, including RADARSAT-3. • As per the Canada/ESA Co-operation Agreement, the Canadian industry accesses the most advanced European remote sensing technologies and contributes to state-of-art expertise to European programs. • Achievement of a close link between RADARSAT and the ESA Earth Watch missions.	resources management, environment monitoring and surveillance, hyper-spectral and other satellite data for the international markets. • *Advanced Imager Programs* develop the next generation of space-based EO missions for natural resources management, environment monitoring and surveillance. Specific activities include hyper-spectral technologies to be flown on foreign or joint satellite missions, development of next generation SAR space and ground technologies for RADARSAT-3. • Canada participates in the following ESA Remote Sensing programs: the *Earth Observation Preparatory* Program to contribute to the design of future EO instruments; *Envisat* to contribute to the design and construction of the Advanced SAR antenna and the Melchelson Interferometer for Passive Atmospheric Sounding (MIPAS) instrument of this major environmental satellite scheduled for launch in July 2001; and the *Earth Observation Envelope Program* to open up strategic Canadian industrial and scientific participation in new research-targeted (Earth Explorer) and commercially-oriented (Earth Watch) missions.	4.7 8.7	3.0 10.8	7.0 7.1
Human Presence in Space • Continued contribution by Canada to international efforts for establishing a human presence in space. • Maintenance of Canada's	• The *CSSP* includes the development of the robotic MSS system, composed of the Space Station Remote Manipulator System (SSRMS) to handle large loads on-board the Station (launch in April 2001), the	33.8	1.0	0.7

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
position as a world leader in space robotics by completing the development and on-orbit commissioning of the MSS, and by exercising full responsibilities for MSS Operations. • Industry development of advanced technologies in fields such as: high reliability software, life critical software, artificial vision, expert systems, force movement sensors, simulation, and object oriented software. • Partial use by the private sector of Canada's share of ISS research facilities.	Mobile Base System (MBS launch in February 2002), the Special Purpose Dextrous Manipulator (SPDM) to take care of more delicate work (launch in October 2003), and the Artificial Vision Unit. • The *CSSP* also includes *MSS* operations and maintenance responsibilities such as: sustaining engineering (e.g., software upgrade), integrated logistics (e.g., spares for critical components) and MSS repair and overhaul. Real-time operations of the MSS are scheduled to be assumed by the CSA in October 2002. • The implementation of the *ISS Commercialization Policy* is likely to begin in 2001.	58.2	40.3	34.3

3.2.2 Understanding of the Environment and Contribution to Sustainable Development

The CSP contributes to better understanding, monitoring and prediction of the Earth's environment and global climate change, as well as enhancing the management of natural resources and disasters. This is accomplished through the application of space-based technologies and research based on unique scientific data provided by EO satellites. The following table shows how space programs and their associated resources will contribute to the achievement of planned results for the *Earth and Environment* Service Line for the fiscal years 2001-02 to 2003-04. Also, RADARSAT-1, with its unique capabilities of operating in total darkness and penetrating clouds, contributes to our understanding of the environment by supplying data for several environment-based applications such as: the monitoring of ice and sea conditions in the Canadian Arctic and coastal waters, the management of natural resources, and the operational management of natural disasters around the world (see section 3.2.1).

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Earth & Environment • Use of space-based scientific instruments and improved models to achieve an understanding of the near-Earth environment and the ability to forecast space weather. • Obtainment of the best correlative data for the validation of several space-based international missions. • Achievement of the better understanding, monitoring and prediction of global climate and atmospheric pollution problems by analyzing data produced by Canadian instruments on international satellites and improved modelling techniques. • Improvement of scientific knowledge to help develop policies for emissions control of atmospheric pollutants to meet Canada's international commitments (e.g., Montreal Protocol and Kyoto Agreement), following research on data produced by space-based (e.g. SCISAT-1) or international missions with Canadian participation. • Recognition of Canadian industry as a potential supplier of scientific	• The *Space Environment Programs* develop small payload missions for *in-situ* studies of space plasma and Earth's electromagnetic field. The principal activities include: the operations of the Canadian network of ground-based instruments for the study of upper atmosphere and ionosphere phenomena (CANOPUS); the development of a Canadian-led micro-satellite mission for the study of the near-Earth environment; collaborations with Natural Resources Canada (NRCan) and the University of Alberta on a space weather forecasting facility; and international co-operation with several partners (e.g., NASA, Russia, and Japan) on existing projects. • The *Atmospheric Environment Programs* study the dynamics of the atmosphere, the ozone layer, green-house gases and other global climate change phenomena. This is achieved mainly through the development of scientific instruments, conceived in university and government laboratories and built in industry. Specific activities include: support to the operations of WINDII, MOPITT, Osiris/ODIN in co-operation with the U.S. and Sweden; the development of SciSat-1 instrument and satellite hardware; the development of Cloudsat & SWIFT scientific instruments with international partners, the Meteorological Service of Canada and CCRS; and, the definition of a new micro-sat mission and new instrument concepts for	4.2 19.2	5.7 16.5	6.5 17.0

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
instruments or components to large international missions led by NASA, the ESA or NASDA. • Use of data and technologies derived from RADARSAT and other EO satellites by departments/ agencies to fulfil their mandate with respect to the management of natural resources and disasters.	future international missions. • The *Government Department-Related Initiatives* develop and/or use space-borne technologies in co-operation with government departments/ agencies for: developing applications for disaster management; studying the cryosphere; monitoring the sustainable development of Canadian forests; understanding the interaction between land-based eco-systems and climate change; mapping near-shore changes and studying the evolution of coastal zones with their eco-systems; and monitoring northern offshore marine environment and its interaction with global climate.	1.6	5.5	7.4

3.2.3 Contributions to the Quality of Life

The CSP contributes to a better quality of life through the contributions of space science and technologies towards improving medical procedures and the general health of Canadians, and through advanced multi-media and personal mobile communications services, like the satellite communications programs described in section 3.2.1, that make advanced communications services (e.g., tele-medicine, tele-education) accessible to all Canadians. The following table shows how space programs and their associated resources will contribute to the planned results for quality of life for the fiscal years 2001-02 to 2003-04.

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Space Science and Human Presence in Space • Improvement in the health of Canadians through the understanding of human adaptation to space environment, and	• The *Life Sciences Programs* enable the Canadian scientific community and industry to advance our knowledge of the changes in the cardiovascular, bone and nervous	8.9	9.7	9.7

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
applications of space science and technologies. • Improvement of medical knowledge, treatments and drugs by experiments using the effects of microgravity. • Improvement of material processing techniques including the understanding of fundamental physics and chemistry, proteins and biotechnologies, fluid and combustion processes. • Utilization by Canadian scientists and industry of Canada's share of ISS research facilities.	systems, as well as the adaptation of human and other life forms to weightless environment through the use of the Space Shuttle and eventually, the ISS. The main activities include: gravitational biology projects such as Canada's Insect Habitat and Aquatic Research Facility for ISS utilization, and other osteoporosis experiments on Space Shuttle flights such as OSTEO-2, H-Reflex, and extravehicular dosimetry. • The *Microgravity Sciences Programs* enable the Canadian scientific community and industry to advance our knowledge of basic physical and chemical processes in the weightless environment of the Space Shuttle and the ISS. The main activities include: the development of the Microgravity Isolation Mount, furnace and biotechnology facilities for the ISS, and experiments on Space Shuttle flights such as Protein Crystal Growth.	10.5	10.7	10.7
	• The *Canadian Astronaut Program* responds to the needs for human space flights through the testing of Canadian space material and life science experiments and supporting studies in health technologies. The main activities focus on: the training of Canadian astronauts for participation in the construction and operation of the Space Station (e.g., Chris Hadfield's mission for SSRMS assembly in April 2001), and the development of a strong space medicine program.	8.5	8.7	8.1

3.2.4 Technological Development and Diffusion

In the face of stiff world competition, Canada's penetration of emerging space markets requires that the government actively support the development of the technological capabilities of the Canadian space firms, particularly high technology SMEs. Over the next several fiscal years, the CSA will focus its efforts on the development of the niche technologies needed to support the growth and competitiveness of Canadian industry; establish partnerships with foreign firms and thereby benefit from the technology transfer, and improve access to foreign markets, particularly through the renewed Canada/ESA Co-operation Agreement. The following table shows how space programs and their associated resources will contribute to planned results for technology development and diffusion for the fiscal years 2001-02 to 2003-04.

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Generic / Enabling Space Technologies				
• Enhancement of the Canadian space industry's competitiveness and penetration of emerging international space markets through the development of innovative technologies and new products. • Enhancement of Canada's industrial capabilities and infrastructure through the development and space-qualification of technologies for future space missions. • Increased participation of SMEs from all regions of Canada in space technology development programs. • Maintenance of the CSA expertise base to support the implementation of the CSP, acquire intelligence on technology advances world-wide and explore, along with industry, the potential of	• Through a competitive process, the *CSA Technology Development Programs* contract R&D projects to industry in order to develop emerging technologies for future space missions and apply advanced technologies for the development of prototype sub-systems/ components with high commercial potential. Specific projects include: micro-miniaturization of instruments, high temperature superconductivity, space servicing systems, smart structures, attitude control sensors and actuators.	8.9	7.4	7.7
	• The *Flight Technology Demonstration Program* develops international co-operation ventures for space-qualification of new Canadian technologies. A key project is the joint development of a small satellite platform with a foreign partner such as France, Australia or the U.K.	2.0	2.0	3.2
	• The *Intellectual Property Management and Technology Commercialization Programs* support the promotion and transfer of the CSA technologies. The	1.1	1.1	1.5

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
emerging technologies. • Commercialization of Canadian space technologies and application to other industrial sectors. • Canada defrays its share of the ESA *General Budget*, which is mandatory for all Member States. Canadian companies and institutions also receive contracts to demonstrate new Earth-based applications for space technologies.	main activities are the management of 48 active patent files, 59 licences and 10 loan agreements, as well as the completion of several business opportunity studies. • The *CSA Expertise Development Program* maintains in-house technical capabilities and knowledge databases on new technologies and trends. • As part of our contribution to the ESA *General Budget*, Canadian companies participate in *the General Studies Program* to develop advanced concepts for future missions and applications. For example, Canadian industries received contracts such as the Harsh Environment Initiative (C-CORE in Nfld.), and the Real-Time Emergency Management via Satellite (REMSATled by MDA and the BC Forest Service).	10.4 5.8	10.9 6.8	10.2 6.8

3.2.5 World-Class Space Research

Canada has achieved internationally recognized excellence in a number of areas, notably space robotics (e.g., Canada's contribution to building and operating the International Space Station with the MSS), several international space sciences projects (e.g., atmospheric and solar-terrestrial relations sciences), civilian space-borne radar technologies and applications (e.g., RADARSAT family of satellites), and certain satellite communications sub-systems (e.g., radio frequency multi-plexing and antennas, space astronomy and space qualification services with the DFL). Considering that most of those areas are addressed in the preceding sections, the following table focuses only on space astronomy and DFL programs as contributing to the maintenance of world class research in Canada for the fiscal years 2001-02 to 2003-04.

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Space Science and Space-Qualification Services • Achievement of a better understanding of space, the universe, and the basic physical and chemical make-up of our solar system. • Offer of opportunities to Canada's scientific community to participate in international space science missions. • Provision of world-class environmental space-qualification services for the assembly, integration and testing of spacecraft systems and sub-systems.	• *Space Astronomy and Exploration Programs* enable our scientific community to contribute to international efforts aimed at understanding the universe and predicting its evolution. Upcoming key activities include: the development of scientific instruments for participation in the NGST (Hubble Telescope replacement led by NASA) and the FIRST/Planck mission led by the ESA; the development and launch of the Microvariability and Oscillations of Stars (MOST) micro-satellite, as well as the development of advanced science and technology concepts for future missions.	11.9	13.4	14.2
	• The *DFL* main activities are the performance of environment tests for the SPDM (a part of the MSS), RADARSAT-2, SciSat-1, as well as efforts to market its services internationally.	5.7	6.7	6.7

3.2.6 Social and Educational Benefits for Canadians

The unique appeal of space serves to improve scientific literacy among students and educators, to encourage youth to pursue careers in science and technology, and to promote awareness of the importance of science and technology to Canada’s future. The nature of space hardware development, which involves meeting exceptional technical requirements, very stringent quality controls and mastering advanced technologies, constitutes an excellent vehicle for the training of highly qualified scientists, engineers and technicians for Canada's high technology industries. Canadian astronauts (already mentioned in section 3.2.5) significantly contribute to fostering education and space awareness. Indeed, their participation in various public events instils a sense of pride among all Canadians and promotes science and technology to younger generations. The

following table shows how selected space programs and their associated resources will contribute to social and educational benefits for the fiscal years 2001-02 to 2003-04.

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Generic / Enabling Space Technologies and Comptrollership & Awareness				
• Encouragement of Canadian youth to pursue careers in Science and Technology (S & T). • Availability of qualified Canadian scientists, engineers, and technicians for high technology and space-related industries.	• The joint *CSA/NSERC Research Partnership and Scholarship Programs* support the training of skilled personnel and foster collaborations among industry, universities and the Agency. • Various student employment programs of the Public Service Commission allow undergraduate and graduate students to be trained at the CSA.	1.0	1.4	1.4
	• The *Youth Awareness Programs* support rewards and recognition activities, distribution of space-related materials, and public information campaigns across Canada.	0.8	0.8	0.8

3.2.7 Promotion of the Canadian Space Program

Considering the general public's low awareness and interest level in the CSP, the CSA is committed to raising the profile of space-related achievements and their benefits for Canada. The Agency also places great emphasis on building national pride through public awareness of Canadian achievements in space, through the understanding of the role of space programs in Canada's future by Parliament and the general public, and through the development of partnerships with international and domestic stakeholders for the delivery of the CSP. The following table shows how selected communications activities and their associated resources will contribute to the promotion of the CSP for the fiscal years 2001-02 to 2003-04.

Planned Results	Related Activities	Resources ($ in Millions)		
		01-02	02-03	03-04
Comptrollership and Awareness • Communications strategies and activities that satisfy the needs of the CSA, the government, the Minister and space stakeholders. • An increased profile of the CSP and its achievements with the general public and Parliamentarians. • Improvement of international co-operation with our traditional partners, notably the U.S., Europe, and Japan. • Maintenance of effective and open relations between the CSA and its domestic stakeholders, notably industry, OGDs, the provinces and universities.	• The *CSA Communications Directorate* is committed to implementing an ambitious communications strategy that focuses on the promotion of key space events such as the flights of Canadian astronauts. • The *External Relations Directorate* performs a wide range of activities to manage strategic and political aspects effectively, as related to Canada's international co-operation agreements, and to support international marketing strategies pursued by our industries.	3.5 1.8	3.5 1.8	3.5 1.8

SECTION IV: FINANCIAL INFORMATION

The following displays the financial information in relation to CSA budgets for the fiscal years 2000-2001 to 2003-2004.

4.1 SUMMARY OF CAPITAL SPENDING BY BUSINESS LINE

($ in Millions)	Forecast Spending 2000-2001	**Planned Spending 2001-2002**	Planned Spending 2002-2003	Planned Spending 2003-2004
Business Line Space Knowledge, Applications & Industry Development	168.5	**194.1**	145.4	151.9
Net Total	168.5	**194.1**	145.4	151.9

Nota: Due to rounding, figures may not add up to totals shown.

4.2 DETAILS OF MAJOR CAPITAL PROJECTS SPENDING

This table presents capital spending by project for the CSA Business Line "Space Knowledge, Applications and Industry Development."

($ in Millions)	Estimated Total Costs	Forecast Spending by March 31, 2001	**Planned Spending 2001-02**	Planned Spending 2002-03	Planned Spending 2003-04	Estimated Spending in Future Years
Space Science						
• MOST (Ontario)	6.5	4.0	**1.8**	0.5	0.2	0.0
• Insect Habitat (Ontario)	10.1	2.3	**3.2**	3.3	0.8	0.5
• Cloudsat (Ontario)	15.7	5.4	**7.9**	1.7	0.4	0.3
• SciSat-1 (Quebec & Manitoba)	34.5	21.0	**10.0**	2.5	1.0	0.0
Subtotal	66.8	32.7	**22.9**	8.0	2.4	0.8

($ in Millions)	Estimated Total Costs	Forecast Spending by March 31, 2001	**Planned Spending 2001-02**	Planned Spending 2002-03	Planned Spending 2003-04	Estimated Spending in Future Years
CSSP Major Crown Project (Ontario & Quebec)	1396.4	1360.1	**33.8**	1.0	0.7	0.7
• RADARSAT-1 (Quebec)	634.8	618.6	**8.4**	7.9	0.0	0.0
• RADARSAT-2 (British Columbia & Quebec)	409.6	237.8	**68.5**	54.0	49.2	0.0
Total	2507.6	2249.2	**133.6**	70.9	52.3	1.5

Nota: 1) For the Major Crown Projects, the sums include contributions to Employee Benefit Plans.
2) Due to rounding, figures may not add up to totals shown.

4.3 STATUS REPORT ON MAJOR CROWN PROJECTS

The information on the CSSP, RADARSAT-1 and RADARSAT-2 MCPs is reported on the CSA Web site at the following address: http://www.space.gc.ca/about/default.asp

4.4 SUMMARY OF TRANSFER PAYMENTS

($ in Millions)	Forecast Spending 2000-2001	**Planned Spending 2001-2002**	Planned Spending 2002-2003	Planned Spending 2003-2004
GRANTS Space Knowledge, Applications & Industry Development	1.2	**1.2**	1.6	1.6
CONTRIBUTIONS Space Knowledge, Applications & Industry Development	31.3	**48.8**	47.3	46.3
Total Grants and Contributions	32.5	**50.0**	48.9	47.9

4.5 DETAILS OF TRANSFER PAYMENTS PROGRAMS

This table details contribution programs with funding in excess of $5 M per annum.

($ in Millions)	Forecast Spending 2000-2001	**Planned Spending 2001-2002**	Planned Spending 2002-2003	Planned Spending 2003-2004
CONTRIBUTIONS to ESA Programs:				
• General Budget	5.0	**5.8**	6.8	6.8
• Earth Observation	7.6	**8.7**	10.8	7.1
• Satellite Communications	5.9	**7.3**	7.6	8.3
Total	18.5	**21.8**	25.2	22.2
CONTRIBUTIONS:				
• Payload Flight Demonstration program	12.0	**26.0**	21.0	21.0

Canada renewed the Co-operation Agreement with the ESA for another ten years (2000-2009) in order to achieve the following policy, programmatic, and industrial development objectives:

- To diversify Canada's international space partnerships by fostering close collaboration with Europe, complimenting its long-standing priority relationship with the U.S.

- To support implementation of CSP priorities in the areas of satellite communications, satellite navigation and positioning, EO and technology development.

- To develop and demonstrate advanced systems and technologies by participating on a cost-shared basis in European space programs that contribute to achieving CSP priorities and yielding important programmatic benefits, including flight opportunities for Canadian technologies.

- To sustain the competitiveness of the Canadian space industry and thereby create opportunities for Canadian industry on the European markets through the development of leading edge technologies and products, and the facilitation of strategic alliances between Canadian and European companies.

The new Co-operation Agreement maintains an emphasis on satellite communications and EO, but also intends to invest in new areas of satellite navigation and positioning. Specific optional programs in which Canada is participating are described in sections 3.2.1 and 3.2.4 of the document. The General Budget relates to all expenditure involved in the overall management of the ESA. The contribution to the General Budget is mandatory and provides certain rights and privileges, the most important being the right

to participate in optional programs. The key milestones for the planning period addressed by this document are: the launch of the Artemis and Envisat satellites in 2001, and the decision to participate in new optional programs, such as the development phase of GalileoSat, as current major programs are terminating.

The *Payload Flight Demonstration Program* is a public/private sector partnership to develop and fly a Ka-band multi-media payload on the Anik F2 satellite, scheduled for launch in 2002. The Program provides for $80 M over four years (2000-2004) in government contributions. In addition, the three participating companies (e.g., ComDev, EMS Technologies, and Telesat) are also investing at least 25 % of total project cost. In return, the Government is negotiating with Telesat Canada for the delivery of $60 M worth of Ka-band multi-media services at no cost to the Crown, over a ten-year period. The strategic objectives of the Program are to position the Canadian industry as a manufacturer of Ka-band payloads by space-qualifying advanced technologies such as high frequency and larger band-width communications, on-board processing, and multi-beam antennas. The Program also contributes to the government's "Connecting Canadians" agenda by facilitating the provision of multi-media satellite services throughout Canada. The key milestones are: critical design review of systems completed in April 2001, spacecraft integration completed in August 2002 and the launch of Anik F2 scheduled for November 2002.

4.6 SOURCE OF RESPENDABLE AND NON-RESPENDABLE REVENUE

($ in Millions)	Forecast Revenue 2000-2001	**Planned Revenue 2001-2002**	Planned Revenue 2002-2003	Planned Revenue 2003-2004
Respendable Revenue	0.0	**0.0**	0.0	0.0
Non-Respendable Revenue				
• Royalties from RSI	2.2	**4.1**	4.1	2.0
• DFL testing service fees	1.0	**0.5**	0.5	0.6
• Rental fees and miscellaneous	0.1	**0.0**	0.0	0.0
Subtotal	3.3	**4.6**	4.6	2.6
Total Revenues	3.3	**4.6**	4.6	2.6

Nota: Due to rounding, figures may not add up to totals shown.

4.7 NET COST OF PROGRAM FOR THE 2001-02 ESTIMATES YEAR

($ in Millions)	**Total CSP**
Net Planned Spending	**361.8**
Plus:	
Costs of Services Received without Charge	
• Accommodation provided by Public Works & Government Services Canada (PWGSC)	0.1
• Contributions covering employer's share of employee's insurance premiums and expenditures paid by TBS	2.3
• Workman's compensation coverage provided by Human Resources Canada	0.0
• Salary and associated expenditures of legal services provided by Justice Canada	0.1
Total – Services Received without Charge	**2.6**
Total Cost of the Program	**364.4**
Less:	
• Non-respendable revenue	4.6
Total Revenue	**4.6**
2000-2001 Net Cost of the Program	**359.8**

Nota: Due to rounding, figures may not add up to totals shown.

SECTION V: OTHER INFORMATION

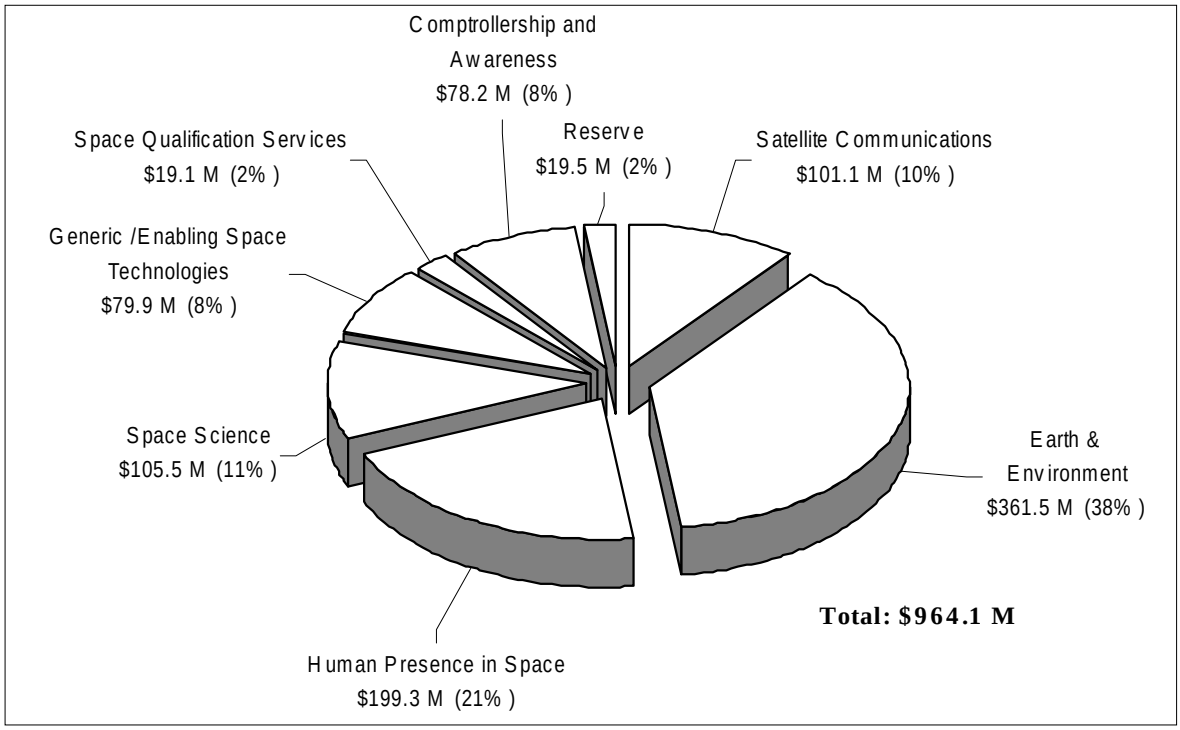
5.1 2001-2002 SPENDING AUTHORITIES

The following table illustrates the CSAs spending authorities.

Vote ($ in Millions)		**2001-2002 Main Estimates**	2000-01 Main Estimates
30	Operating expenditures	**111.7**	114.2
35	Capital expenditures	**184.7**	188.2
40	Grants and contributions	**50.0**	32.2
(S)	Contributions to employee benefit plans	**6.1**	6.0
	Total	**352.4**	340.7

5.2 FUNDING BY SERVICE LINE

The distribution of CSA funds ($964.1M) by Service Line for the fiscal years 2001-02 to 2003-04 is displayed in the pie chart below:



5.3 CONTACTS FOR FURTHER INFORMATION

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  External Relations
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- Virendra K. Jha
  Director General
  Space Technology
  450-926-4600
- Rolf Mamen
  Director General
  Space Operations
  613-998-2873 or 450-926-6530
- Hugues Gilbert
  Director
  Strategic Planning
  450-926-4304
- Jacques Bruneau
  Director
  Corporate Management
  450-926-4407

5.4 CSA WEB SITE

The CSA Web site is located at: www.space.gc.ca

5.5 LEGISLATION ADMINISTERED AND ASSOCIATED REGULATIONS

Canadian Space Agency Act (S.C. 1990, c. 13).

5.6 STATUTORY ANNUAL REPORTS AND OTHER AGENCY REPORTS

Agency Performance Report for the period ending March 31, 2000 and the Report on Plans and Priorities for 2001-02 can be found on the CSA Web Site at: www.space.gc.ca/space/publications/default.asp

5.7 ABBREVIATIONS AND ACRONYMS

ARTES	Advanced Research on Telecommunications Systems
CANOPUS	Canadian Auroral Network for the Open Program Unified Study
CCRS	Canada Centre for Remote Sensing
CDR	Critical Design Review
CRC	Communications Research Centre
CSA	Canadian Space Agency
CSP	Canadian Space Program
CSSP	Canadian Space Station Program
DFL	David Florida Laboratory

EO	Earth Observation
EOPP	Earth Observation Preparatory Program
ESA	European Space Agency
FIRST	Far Infra-Red and Submillimeter Telescope
FIS	Financial Information Strategy
FST	Fluid Science Laboratory
FTE	Full Time Equivalent
ISS	International Space Station
ITAR	International Trade in Arms Regulations
LTSP	Long-Term Space Plan
MBS	Mobile Base System
MCP	Major Crown Project
MDA	MacDonald Dettwiler & Associates
MDR	MacDonald Dettwiler Space and Advanced Robotics
MIM	Microgravity Isolation Mount
MOC	MSS Operations Complex
MOPITT	Measurement of Pollution in the Troposphere
MOTS	Mobile Operations Training Simulator
MOST	Microvariability and Oscillations of Stars
MIPAS	Melchelson Interferometer for Passive Atmospheric Sounding
MSS	Mobile Servicing System
MVIS	Microgravity Vibration Isolation System
NASA	National Aeronautics and Space Administration (United States)
NASDA	National Space Development Agency of Japan
NGST	Next Generation Space Telescope
NRCan	Natural Resources Canada
NSERC	Natural Sciences and Engineering Research Council of Canada
OGD	Other Government Department
OSIRIS	Optical Spectrograph and Infrared Imaging System
PDR	Preliminary Design Review
PRAS	Program Reporting and Accountability Structure
R&D	Research and Development
RPP	Report on Plans and Priorities
RSI	Radarsat International Inc.
S&T	Science and Technology
SAR	Synthetic Aperture Radar
SME	Small-Medium-Sized Enterprise
SOSC	Space Operations Support Centre
SPDM	Special Purpose Dextrous Manipulator
SSRMS	Space Station Remote Manipulator System
STVF	SPDM Task Verification Facility
SWIFT	Stratospheric Wind Interferometer for Transport Studies
TAA	Technical Assistance Agreement
UCS	Universal Classification Standard
U.S.	United States of America
WINDII	Wind Imaging Interferometer