Canadian Space Agency Agence spatiale canadienne

STATE OF THE CANADIAN SPACE SECTOR 2004

EXTERNAL RELATIONS DIRECTORATE
CANADIAN SPACE AGENCY

www.space.gc.ca

Canada

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Note to readers: *The Annual Survey of the Canadian space sector has been undertaken since 1996. Comparative analyses of trends across time typically examine a 5-year period. Consequently, in this edition comparison and changes are reported for the 2000 to 2004 period. Readers should consult previous editions for information regarding results prior to 2000.*

Aussi disponible en français

MISSION STATEMENT
About the Authors
About this Report

The Canadian Space Agency is committed to leading the development and application of space knowledge for the benefit of Canadians and humanity.

About the Authors

The External Relations Directorate manages the strategic relationships between the Canadian Space Agency and its domestic and international partners. Key mandates include the development and implementation of policies and strategies relating to co-operation partnerships with domestic stakeholders (Federal and Provincial governments, industry and academia), international agencies and foreign industries. External Relations plays a pivotal role in supporting the commercial initiatives of Canadian space companies in world markets - a core mandate of the CSA - and in providing stakeholders with strategic and timely information.

About this Report

The **State of the Canadian Space Sector** report provides those working in the space sector, government and industry alike, with insight into the sector in which we operate. In turn, this information supports decision-makers in their endeavor to make informed and strategic choices for the future.

For more information

Information specific to Canadian space business and industry, including an electronic version of this report, is found at the following address: www.space.gc.ca (Industry ➢ Publications).

Acknowledgments

The CSA wishes to acknowledge the contribution of the organizations, both public and private, without which this report would simply not have been possible.

MESSAGE FROM THE PRESIDENT

Marc Garneau
President

Once again, I am pleased to report that the results of the 2004 Annual Survey indicate there has been considerable growth in the space sector. Total revenues for 2004 were C$2.44B. This represents a 22% increase over levels reported in 2003. While we can attribute this growth to increases in both domestic and export revenues, the majority of this growth, 92%, is attributed to the increase in export revenues. Accordingly, the ratio of revenues streaming from the domestic and export markets has changed to 51%/49% from the 60%/40% observed for the past two years. The results reconfirm the importance of the export market for the growth of the Canadian Space Sector and the importance of strengthening our collective efforts in this regard.

Satellite Communications activities generated the majority of revenues (75%) for the space sector. Given the significant contribution of the revenues generated by the Satellite Communications sector in comparison to overall space revenues, we once again examined the data further to better discern the specific characteristics of this revenue stream.

Of the four Space Categories monitored, Space Segment activities has shown significant growth this year (86%), breaking its trend of declines observed over the past three years. The Annual Survey also demonstrated other growths during 2004; Ground Segment activities increased 21% and Applications and Services revenues increased 8%. However, the Space Research area of activity lost some ground with revenues declining 12% ($6M) over the course of the year. This marks the first year of decline in revenues for the space research category since 2000.

Overall, this year's results confirm that our collective efforts have produced an enduring and competitive Canadian space sector that continues to grow in a fiercely competitive international marketplace. I will continue to meet with leaders of the space industry and research and development sector to discuss where our best efforts would fuse to promote and further strengthen the Canadian space sector.

EXECUTIVE SUMMARY

In 2004, the Canadian space sector generated total revenues of $2.44B[1], an increase of 22.2% or $443M over those achieved during 2003. This growth is mainly attributed to the increase in export revenues, accounting for $410M (92%) of the total $443M growth. Over the last five years (since 2000) the total revenues generated by the Canadian space sector have increased 70.7%.

During 2004, revenues from domestic and export sources were $1.235B and $1.208B respectively. Export revenues increased significantly during 2004, growing 51.3% (approximately $410M) while domestic revenues showed a modest increase of 2.8% (or $34M). Over the past five-years, total domestic revenues increased 59% and total export revenues increased 84%.

Domestic revenues represented 51% ($1.235 of $2.443B) of total revenues in 2004, a decrease of 9% over 2003 figures where it represented 60%. It is also noteworthy that in 2004, Canada's space sector again derived the significant majority of its domestic revenues from non-government (or Private) sources. The finding in 2004 that non-government sources outweighed revenues from government sources, is consistent with the overall trend observed since reporting began in 1996 (save for a one-time observation in 2000). The survey results show that the overall share of non-government derived sources of revenues increased in 2004 yielding a ratio of **81%/19%** for "Private"/"Public" sources respectively compared with a ratio of **78%/22%** observed in 2003.

The proportion of overall space revenues represented by export revenues increased over the 2003 levels. Export revenues represented 49% of the overall space revenues, whereas it represented 40% in 2003. This is the largest proportional share of the total revenues by export revenues observed since tracking began in 1996 and reflects the strong export orientation of the Canadian space industry, which continues to grow sales in a highly competitive international marketplace.

During 2004, strong growth was observed throughout all sources of exports revenues. The **U.S.** continued to be the strongest market for export revenues representing 45.7% of the total export revenues and an increase of 52% since 2003. **European**-derived revenues again generated the second largest share of export revenues and accounted for 36% of the overall export revenues, growing a notable 60.5% during 2004[2]. Some growth was also found in **Asia** where revenues increased 6.6% ($6M). Revenues from non-traditional trade markets also showed growth where revenues from Oceania increased 78%, South America 62% and revenues from Africa increased $23.8M[3].

Of the four **Space Categories monitored** through the Annual Survey, considerable growth was found in Space Segment activities where revenues increased 86.2% over levels observed in 2003. This is a positive turnaround for Space Segment activities, which has been on a declining trend since 2000. Ground Segment and Applications and Services revenues also grew during 2004, Ground Segment revenues increased 21.4% ($101M) and the latter increased 7.9% ($93M). Conversely, Space Research areas of activity lost some ground showing revenues declining 11.7% ($6M).

[1] *All currency in Canadian dollars.*

[2] *Note that a major space sector company requested a revision to their export numbers as submitted for 2001, 2002 and 2003. While originally logged as 'other' the revision served to distribute these revenues into their proper place that is to European markets.*

[3] *Please consult the Export Revenues section for an explanation of this increase*

EXECUTIVE SUMMARY

Amongst the **Space Activities in Canada**, the Satellite Communications sector generated the lion's share of the Canadian space sector's revenues in 2004, representing 74.8% or $1.827B of the total reported revenues. This represents a 26% ($379M) increase over levels observed in 2003. Over the past five years, satellite communications revenues have almost doubled, growing from $920M to $1.827B.

In 2004, revenues from the Navigation sector also increased, 29% over 2003 levels. Revenues from the Earth Observation and Robotics sectors both showed increases as well during 2004, 14.9% and 5.3% respectively. On the other hand, Space science activity decreased slightly, $1M or 1.3% during 2004.

Given the significant contribution of the revenues generated by the Satellite Communications sector to overall space revenues, the data were again broken down to identify the specific sources of revenues. The results are shown in the **Chart: Breakdown of Satellite Communications Revenues (2004) (page 12).**

Of the $1.827B generated in the **Satellite communications Sector**, the majority of revenues, that is 60% or $1.105B, is from activities in Applications and Services, although this is once again short of that found last year (at 74% for 2003 and 78% for 2002). This makes two years running that the Applications and Services proportional share of this sector has declined. Of the remaining 40% the breakdown is as follows: 22% or $402M is generated from Ground Segment activities, 17% or $311M is from Space Segment, and 0.5% or $9M is from Space Research.

The 2004 **Regional Space Revenues** analysis found there to be growth in all regions as follows: British Columbia 14.9%, Prairie Region 5.2%, Ontario 15.5%, Quebec a substantial 82.9% and Atlantic Canada 1.5%. As in previous years, the majority of space revenues, 60%, are in Ontario.

During 2004, 1,323 new workers joined the Canadian space sector bringing the total workforce to 7,445 employees. Once again, Ontario continued to employ the majority of space sector employees representing 60.8% of the total workforce. Quebec, British Columbia, the Prairies and Atlantic Canada employed 19.8%, 9.7%, 5.9%, and 3.8% of the total workforce respectively.

OVERALL RESULTS: 2000-2004

Year	Total Revenues	Domestic Revenues		Export Revenues		Workforce
	$	$	%	$	%	n
2004	2,442,685,155	1,234,981,072	51	1,207,704,083	49	7,445
2003	1,999,433,240	1,201,312,758	60	798,120,482	40	6,122
2002	1,800,139,269	1,072,633,400	60	727,505,869	40	5,789
2001	1,871,511,842	1,077,212,382	58	794,299,460	42	6,275
2000	1,430,941,403	774,729,039	54	656,212,364	46	5,950

OVERVIEW OF THE REPORT

In order to measure the changes taking place in Canada's space sector, the CSA undertakes an annual survey and publishes the results in the *State of the Canadian Space Sector* report. The 2004 edition profiles the sector over the course of January 1 to December 31, 2004. Data is provided in the following areas:

- Overall space revenues;
- Domestic v. export revenues;
- Revenues of Canada's Top 30 organizations developing and/or using space to generate revenues;
- Revenues by space categories (Space Segment, Ground Segment, Applications and Services, and Space Research);
- Revenues by sectors of activity (Satellite Communications, Robotics, Earth Observation, Space Science, and Satellite Navigation);
- Regional Revenues (British Columbia, Prairies, Ontario, Quebec and Atlantic Canada);
- Workforce characteristics.

METHODOLOGY

Questionnaires were sent to over 200 private sector companies, research organizations and universities in Canada who have a defined strategic interest in the space industry. Additional data were collected through internal consultation with CSA and government officials whose dealings with stakeholders were deemed statistically relevant.

It is important to note that the company-specific information used to compile this report remains strictly confidential and cannot be released in a manner other than in an aggregate form.[4] Consequently, in certain circumstances, the authors are prevented from providing a more detailed explanation or in-depth analysis of the results.

DEFINITION OF CANADA'S SPACE SECTOR

The Canadian space sector is defined as organisations (private, public and academic) whose activities rely on the **development and use** of space assets and/or space data. Accordingly, the sector encompasses the following activities:

Space Segment: Research and Development (R&D), manufacturing, testing, integration and launch of platforms (satellites, spacecraft and robotic systems), complete systems, subsystems and components.

Ground Segment: R&D, manufacturing, testing, and integration of facilities on Earth for controlling space-based systems and satellites, for linking satellites to operational terrestrial networks and for processing satellite-derived data.

Applications and Services: Development and/or provision of services and value-added products and technologies that are derived from the use of space systems and/or data, and the provision of consulting and engineering services.

Fundamental Space Research: Primarily research related to non- or pre-commercial space activities.

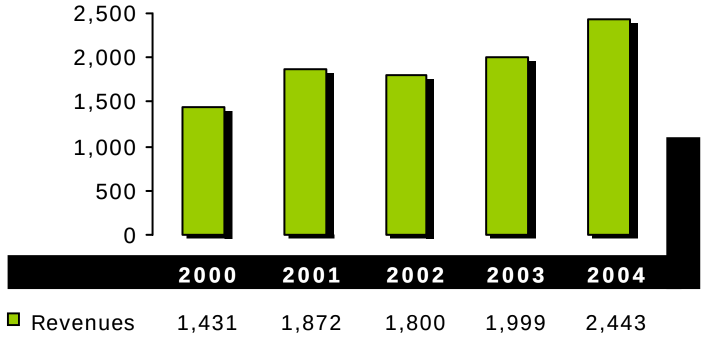
[4] *CSA acknowledges a margin of error in the final results of approximately 2.5%.*

REVENUES
Overall Revenues
Domestic v. Export Revenues

OVERALL REVENUES

Total revenues for the Canadian space sector in 2004 were reported as $2.44B, an increase of 22.2% or $443M, over those achieved during 2003. Export revenues were the major driver in 2004, accounting for $410M (92%) of the total $443M growth. Over the last five years (since 2000) the total revenues generated by the Canadian space sector have increased 70.7%.

Total Space Revenues: 2000-2004 (C$m)



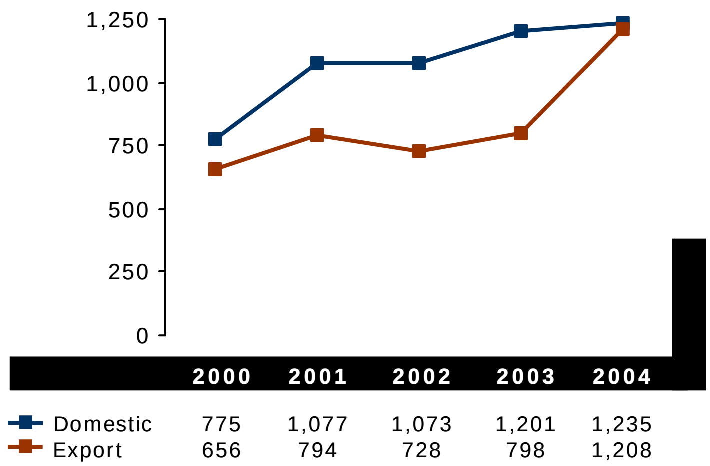
DOMESTIC v. EXPORT REVENUES

During 2004, revenues from domestic sources were $1.235B, representing an increase of 2.8% over those reported in 2003 ($1.201B).

In 2004, domestic revenues represented 51% of total revenues, ($1.235 of $2.443B) whereas they represented 60% of total revenues in 2003. Export revenues increased significantly during 2004, growing 51.3% (approximately $410M) from $798M in 2003 to $1.208B in 2004. Over the past five years, total export revenues have increased by 84%.

In 2004, the proportion (ratio) of overall space revenues represented by export revenues increased to 49%. The 49% ratio of exports to total revenues found in this year's results reflects the strong export orientation of the Canadian space industry, which continues to grow sales in a highly competitive international marketplace.

Domestic v. Export Revenues: 2000-2004 (C$m)

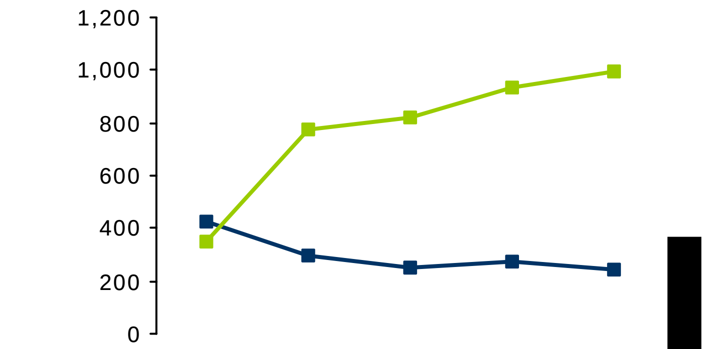


DOMESTIC REVENUES

Respondents are asked to identify the source of their domestic revenues as either being derived from government ("Public") or non-government ("Private") sources. In 2004, the space sector continued to derive the large majority of their revenues from non-government sources. (Readers should note that further analysis revealed that the satellite communications/applications sector accounts for the large majority of the private source of revenues)

In 2004, of the total $1.235B total domestic revenues, non-governmental sources yielded $995M or 81%. Domestic revenues from government sources decreased 11%, declining from $270M in 2003 to $240M in 2004. The finding in 2004 that non-government sources outweigh revenues from government sources, is consistent with the overall trend observed since reporting began in 1996 (save for a one-time observation in 2000). The survey results show that the overall share of non-government derived sources of revenues increased in 2004 yielding a ratio of **81%/19%** for "Private"/"Public" sources respectively compared with a ratio of **78%/22%** observed in 2003.

Sources of Domestic Revenues
Public v. Private: 2000-2004 (C$m)



	2000	2001	2002	2003	2004
Public	422	299	252	270	240
Private	353	778	821	932	995

REVENUES
Export Revenues

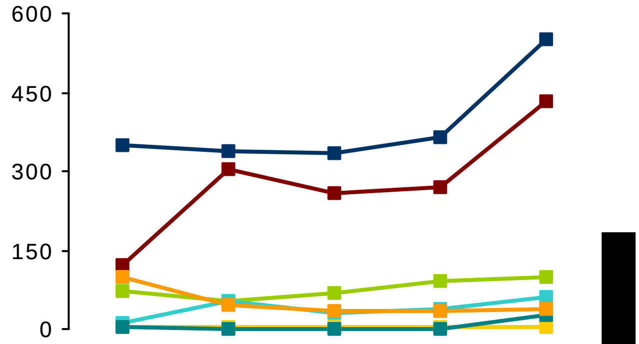
EXPORT REVENUES

The 2004 survey results confirm the **U.S.** as the strongest performing export market for Canada's space organizations, representing 45.7% (or $551.9M) of the $1.208B in total export revenues, and increased by 52% over levels observed in 2003. This is a slight increase of 0.2% to the **U.S.'s** proportional share of total export revenues observed in 2003. Revenues from **US** sources in 2004 showed growth after a long period of relatively flat growth.

Revenues from **Europe** increased 60.5% during 2004 increasing $163M from $269M in 2003 to $432M in 2004. European-derived revenues accounted for 36% of the overall $1.208B export revenues, a stronger proportional share than achieved during 2003.

Revenues from **Asia** showed positive growth in 2004, increasing $6M or 6.6% during 2004. Asian-derived revenues represented 8% ($97M) of total export revenues, a decrease when compared with the 11% reported for 2003, although still proving to be an important source of revenues for Canada's space industry.

Sources of Export Revenues: 2000-2004 (C$m)



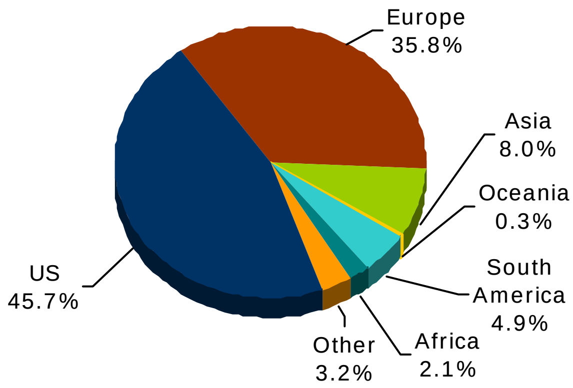
	2000	2001	2002	2003	2004
US	348	339	336	363	552
Europe	121	302	258	269	432
Asia	71	53	68	91	97
Oceania	5	2	2	2	4
S. America	13	52	31	37	60
Africa	2	0.4	0.4	1	25
Other	97	46	33	35	38

REVENUES
Export Revenues

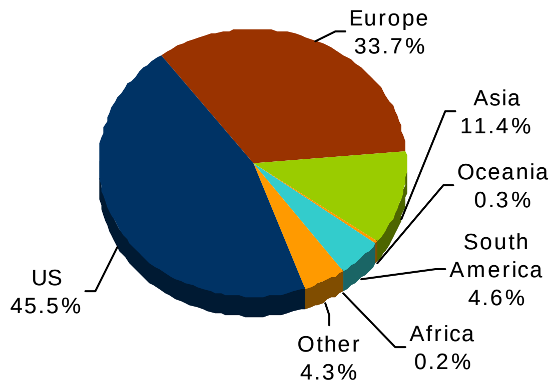
EXPORT REVENUES CONT.

In 2004, growth was observed in export revenues from sources outside of traditional trade markets. Revenues from **African** markets increased significantly, an increase which merits further explanation. In fact 87% of the increase in revenues can be attributed to a respondent that did not report export revenues during 2003. Consequently, if one compares the results for respondents with records for 2003 and 2004, then the actual increase from African markets is $5M for this continent, still a major increase for this non-traditional market. Revenues from **South America** showed comparable increases of 62% between 2003 and 2004 and export revenues from **Oceania** increased a significant 78% in 2004.

Proportion of Export Revenues: 2004



Proportion of Export Revenues: 2003



REVENUES OF CANADA'S TOP 30 SPACE ORGANISATIONS

In 2004, 97% of the total space revenues are accounted for by the Top 30 Canadian organizations developing and/or using space assets. This finding mirrors the results of previous survey results.

In 2004, **55** organizations reported revenues equal to or in excess of $1M compared with 40 organizations so reporting in 2003. There were 25 organizations reporting over $10M in revenues during 2004.

REVENUES
Revenues by Space Categories

REVENUES BY SPACE CATEGORIES

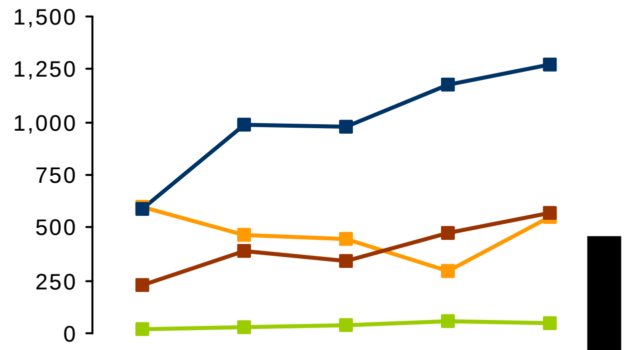
Space Segment: Revenues **increased** during 2004 a significant 86.2% ($256M) over levels achieved in 2003. This breaks the trend of declines observed over the past three years although levels have not returned to those found in 2000. Since 2000, revenues in this category have in fact declined $49M or 8%. Space segment revenues represented 22.6% of total space sector revenues in 2004, up from the percentage (14.9%) found in 2003.

Ground Segment: Revenues **grew** during 2004, increasing 21.4% ($101M) over levels achieved in 2003. Ground Segment revenues represented 23.4% of total revenues in 2004 compared with the 23.6% it represented in 2004.

Applications and Services: Revenues showed **modest growth** during 2004, up 7.9% ($93M) from levels achieved in 2003. Applications and Services revenues represented 52% of total space sector revenues in 2004, down from the 59% observed in 2003. Over the 2000-2004 timeframe, revenues from Applications and Services have grown by $687M and continue to represent the leading source of total revenues for the space sector industry.

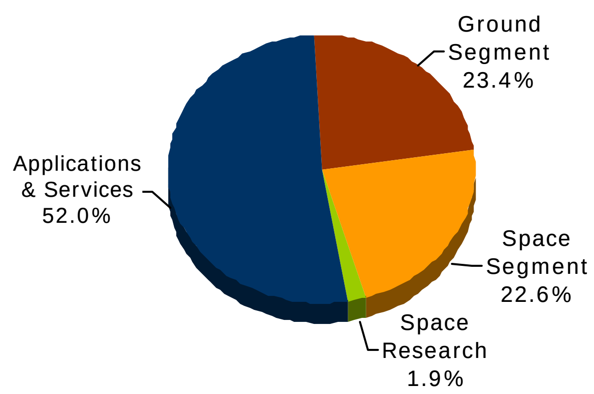
Space Research: Revenues **decreased** 11.7% ($6M) during 2004, declining from $53M to $46M between 2003 and 2004. Space Research revenues accounted for 2% of total space revenues, compared with the 3% reported in 2003.

Total Revenues by Space Category: 2000-2004 (C$m)



	2000	2001	2002	2003	2004
Space Segment	602	467	445	297	553
Ground Segment	229	386	338	471	572
Apps & Services	584	989	981	1,179	1,271
Space Research	16	30	37	53	46

Proportion of Revenues by Space Category: 2004



REVENUES
Revenues by Sectors of Activity

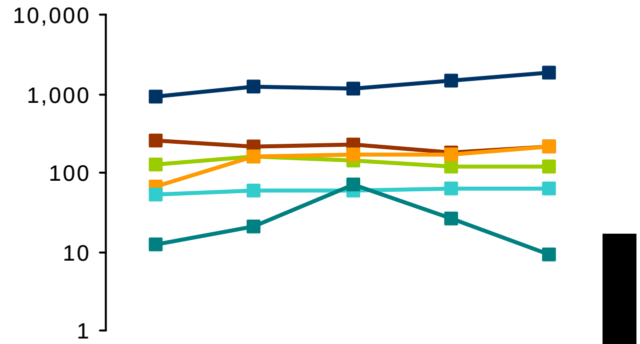
REVENUES BY SECTOR OF ACTIVITY

Satellite Communications: As has been the case since tracking began, the Satellite communications sector generated the lion's share of the Canadian space sector's revenues in 2004, representing 74.8% or $1.827B of the total reported revenues. This represents a 26% ($379M) increase over levels observed in 2003. Over the past five years, satellite communications revenues have grown from $920M to $1.827B.

Given the significant contribution of the revenues generated by the Satellite communications sector to overall space revenues, the data were again broken down to identify the specific sources of revenues. The results are shown in the **Chart: Breakdown of Satellite Communications Revenues (2004).**

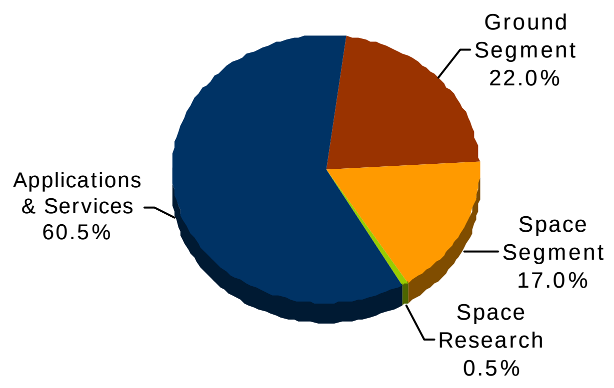
Of the $1.827B generated in the **Satellite communications Sector**, the majority of revenues, that is 60% or $1.105B, is from activities in Applications and Services, although this is once again short of that found last year (at 74% for 2003 and 78% for 2002). (This makes two years running that the Applications and Services proportional share of this sector has declined). Of the remaining 40% the breakdown is as follows: 22% or $402M is generated from **Ground Segment** activities, 17% or $311M is from **Space Segment**, and 0.5% or $9M is from **Space Research**.

Total Revenues by Sectors of Activity: 2000-2004 (C$m) (Logarithmic)



	2000	2001	2002	2003	2004
SatCom	920	1,261	1,128	1,447	1,827
Earth Obs.	254	219	232	184	211
Robotics	126	156	146	116	122
Navigation	67	155	165	165	212
Space Sci.	52	59	58	62	61
Other	12	21	71	26	9

Breakdown of Satellite Communication Revenues: 2004



REVENUES
Revenues by Sectors of Activity

REVENUES BY SECTOR OF ACTIVITY CONT.

Earth Observation: Revenues for the Earth Observation (EO) sector increased 14.9% in 2004, increasing from \$184M to \$211M (or \$27M). EO revenues represented 8.6% of the total revenues, showing a decrease from the 9.2% observed in the previous year. Overall, revenues have declined 16.8% (\$43M) between 2000 and 2004.

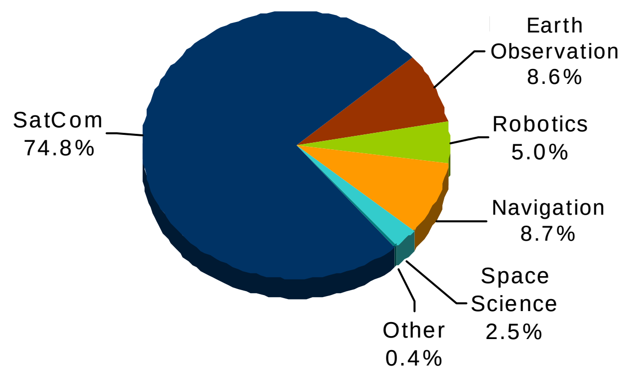
Robotics: Revenues in this sector **grew by a modest** 5.3% during 2004 (\$6M) and generated 5% of the total space revenues, in contrast to its stronger proportional position in 2003 at 6% and in 2002 at 8%.

Navigation: Revenues from the navigation sector **increased** 29% (\$47M) during 2004. Navigation revenues represented nearly 9% (8.7%) of the total space revenues, a slight increase over the 8.2% observed in 2003. Since 2000 revenues from this sector have grown by \$145M.

Space Science: During 2004, revenues within the Space Science sector of activity decreased a modest 1.3% or \$1M. Revenues generated from Space Science activities represented 2.5% of total revenues, down from levels reported for 2003 at 3.1%. Since 2000, revenues have grown from \$52M to \$61M.

Other: Space-related activities in areas other than those classified above, reported a very significant 65% **decrease** over numbers reported in 2003, dropping from \$26M to \$9M. This most likely reflects respondents improving their classification of activities into the appropriate sectors.

Proportion of Revenues by Sectors of Activity: 2004



REVENUES BY REGION

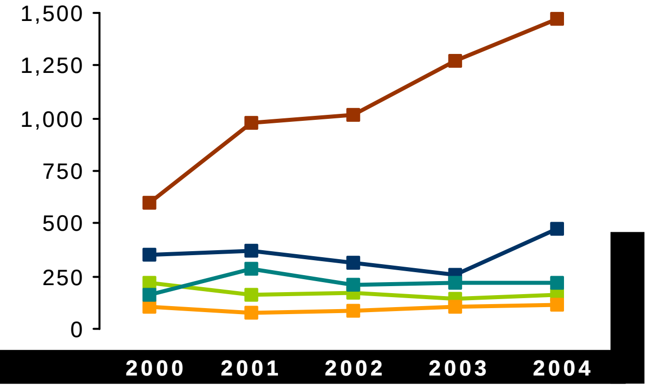
British Columbia: Revenues from British Columbia increased by 14.9% during 2004, increasing 21M over 2003 levels (growing from $144M to $165M). British Columbia revenues represented 7% of total revenues for the space sector, a slight 0.5% decrease over 2003. Since 2000, revenues from British Columbia have decreased 24% (or $52M).

Sources of B.C. space revenues reversed trend in 2004 with the majority being derived from export markets ($114M) and $51M derived from domestic markets. In 2004 exports represented 69% of its total revenues compared with 46.9% in 2003. This equates with a 22% increase in its share of export market revenues. Regarding domestic revenue trends, in 2004 B.C. domestic revenues decreased 33.4% (or $25M). It is worth noting that domestic revenues in B.C. have declined every year for the past 5 years, decreasing from $132M in 2000 to $51M in 2004 (61%). The trend for export revenues is notable – inclining to growth since 2001.

Prairies: Total revenues for Canada's Prairie region (Alberta, Saskatchewan and Manitoba) increased 5.2% between 2003 and 2004 (growing from $106M to $112M). In 2004, the Prairies generated 5% of the total space sector revenues, a share similar to the 2003 results. Over the five-year period 2000 to 2004, total revenues have risen 10% ($11M).

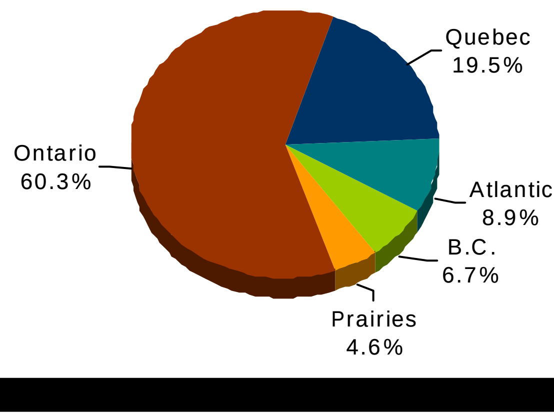
Canada's Prairie region continued to derive the majority (79.4%) of its total revenues from exports in 2004, reporting a total of $88M in exports. This represented an increase of 30.8% over exports for 2003. On the other hand, domestic revenues decreased by 40%, from $38M to $23M. Since 2000, the Prairie's export revenues have increased 67.5% and its domestic revenues have dropped 52.1%.

Revenues by Region: 2000-2004 (C$m)



	2000	2001	2002	2003	2004
B.C.	217	166	169	144	165
Prairies	101	75	88	106	112
Ontario	600	978	1,018	1,275	1,473
Quebec	353	366	313	261	477
Atlantic	160	286	213	214	217

Regional Proportion of Total Revenues: 2004



REVENUES BY REGION CONT.

Ontario: Given that a major proportion of overall revenues are typically generated within Ontario and revenues in Ontario in 2004 grew 15% and now stand at 1.473B. In 2004, Ontario contributed to overall space revenues, generating 60% of the total, although down somewhat from a 63.8% contribution in 2003, it is still clear that the importance economic benefits for Ontario from the Canadian space industry are significant. Overall, between 2000 and 2004, space revenues have more than doubled, growing from $600M in 2000 to $1.473B in 2004.

As in previous years, most of Ontario revenues in 2004 were derived from domestic sources. Domestic revenues represented 68.4% ($1.007B) of Ontario's space revenues and export revenues represented 31.6% ($466M). Both domestic revenues and export revenues increased in 2004; domestic revenues increased slightly, 3.2%, while exports increased 55.4%. Since 2000, domestic revenues have more than doubled growing from $446M in 2000 to $1.007B in 2004. Moreover, export revenues have tripled since 2000, rising from $154M to $466M in 2004.

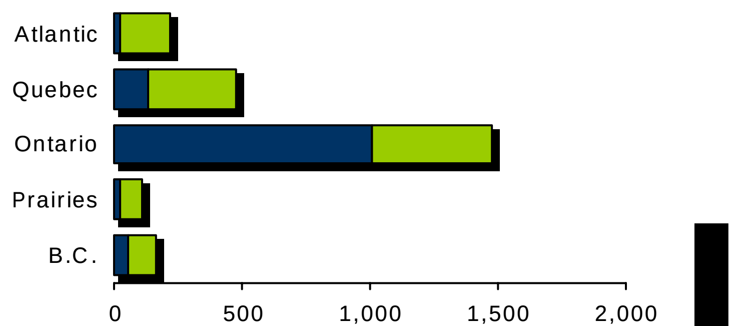
Quebec: Revenues from Quebec increased 82.9% or $216M during 2004 and represented 20% of the total space revenues in Canada. This is an increase from the 13% observed in 2003. Over the five-year period 2000 – 2004 revenues have increased 35%.

Quebec continued to derive the majority of its revenues from exports in 2004 (72.1% or $344M). Between 2003 and 2004, export revenues grew a significant 80.9%, from $190M to $344M. Domestic revenues also increased substantially, growing 88.3% from $71M to $133M. Altogether, export revenues have increased 47.1% ($110M) and domestic revenues have increased 11.2% ($13M) since 2000.

Atlantic: Revenues increased in Atlantic Canada during 2003 by 1.5%, up from $214M to $217M in 2004. Atlantic Canada represented 9% of the total space revenues whereas it represented 10.7% of the total in 2003.

Once again, the majority of Atlantic Canada's revenues were derived from export sources; 90% (or $195M) of its revenues were exports. In 2004, export revenues increased 12.7% ($22M) and domestic revenues decreased 46.4% ($19M). In the period from 2000 to 2004, Atlantic Canada's export revenues have increased 49.2%. On the other hand, domestic revenues have decreased, dropping 25% since 2000.

Domestic v. Export Revenues by Region: 2004 (C$m)



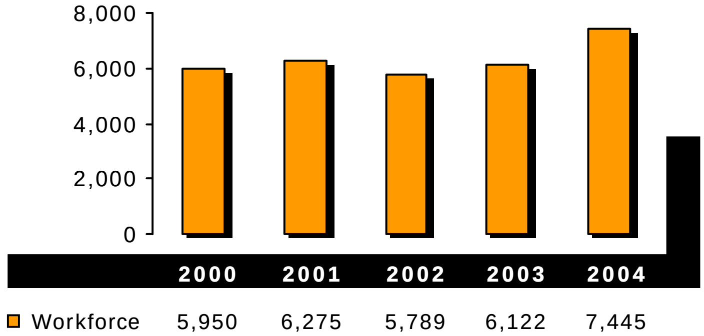
	B.C.	Prairies	Ontario	Quebec	Atlantic
Domestic	51	23	1,007	133	22
Export	114	88	466	344	195

SPACE SECTOR WORKFORCE
Workforce Groups

SPACE SECTOR WORKFORCE

During 2004, the Canadian space sector workforce increased by 21.6% over 2003, growing from 6,122 to 7,445 workers. It is noteworthy that the 2004 workforce is at its highest level ever achieved since tracking began in 1996.

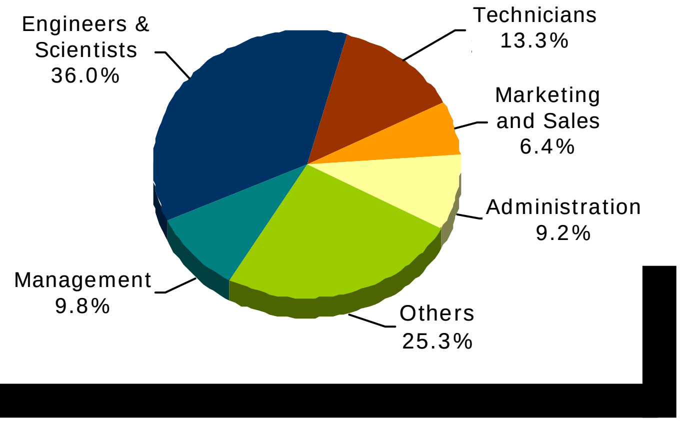
Space Sector Workforce: 2000-2004



WORKFORCE GROUPS

Once again, the **"Engineers and Scientists"** group continued to be the main category of employment in 2004, comprising the largest number of employees, namely 2,679 workers or 36% of the space sector workforce. The chart below provides a breakdown of the distribution of employment groups working in the Canadian space sector in 2004.

Workforce by Space Employment Categories: 2004



Workforce Groups by Region: 2004

	BC	Prairies	Ont.	Que.	Atlantic	Total
Mngmt	73	35	474	121	28	731
Eng/Sci.	226	265	1,187	946	56	2,679
Tech.	40	61	683	189	14	987
Mktg/Sls	51	19	352	36	21	478
Admin.	63	23	362	76	162	686
Other	272	35	1,469	109	0	1,885
Total	724	438	4,527	1,477	280	7,445

WORKFORCE BY REGION

British Columbia represented 9.7% (724) of the nation's space workforce in 2004. From 2003, B.C. increased its workforce by a notable 78.6% (319).

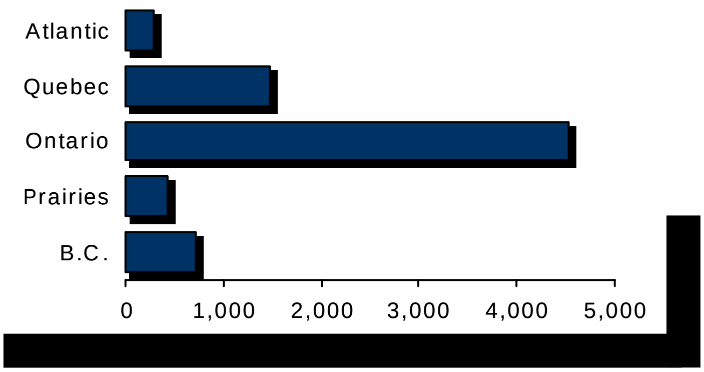
The **Prairies** employed 5.9% (438) of the space sector workforce. This corresponds to a 10.3% increase over the 2003 levels.

Ontario continued to employ the majority of the space sector workforce in 2004, representing 60.8% of the total space sector workforce. This is a slight increase from its share in 2003, previously 60.0% of the total workforce. Since 2003, Ontario added 852 workers to its roster, employing 4,527 people. The space sector workforce in Ontario has grown by 62.1% from 2,793 to 4,527 since 2000.

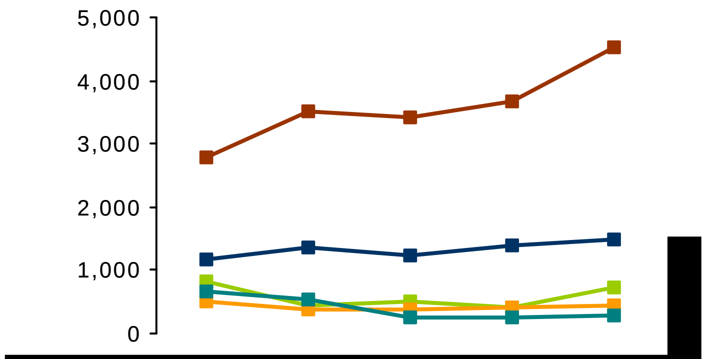
Quebec based space sector employment figures increased by 5.3% (74) during 2004, representing 19.8% (1,477) of the total space sector workforce. Since 2000, Quebec has shown a positive growth in employment of 25.6%.

Atlantic Canada employed more or less the same proportion it shared in 2003, namely 3.8% of the country's space sector workforce in 2004. Since 2000, space sector employment in Atlantic Canada has decreased by 57.9% or 385 workers.

Space Sector Workforce by Region: 2004



Space Sector Workforce by Region: 2000-2004



	2000	2001	2002	2003	2004
B.C.	817	457	509	405	724
Prairies	499	374	379	397	438
Ontario	2,793	3,525	3,425	3,675	4,527
Quebec	1,176	1,366	1,229	1,403	1,477
Atlantic	665	553	248	243	280