GENERAL GEOPHYSICS CO
Form 20-F/A
September 19, 2005

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SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F/A
AMENDMENT NO. 1

o REGISTRATION STATEMENT PURSUANT TO SECTION 12(B) OR (G)
OF THE SECURITIES EXCHANGE ACT OF 1934
OR
x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the Fiscal Year Ended December 31, 2004
OR
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the Transition Period from to

Commission File Number 001-14622

**Compagnie Générale de Géophysique**
*(Exact name of registrant as specified in its charter)*

**General Company of Geophysics**
*(Translation of registrant s name into English)*
**Republic of France**
*(Jurisdiction of incorporation or organization)*
**1, rue Léon Migaux**
**91300 Massy**
**France**
**(33) 1 64 47 3000**
*(Address of principal executive offices)*

Securities registered or to be registered pursuant to Section 12(b) of the Act.

| Title of each class | Name of each exchange on which registered |
|---|---|
| **American Depositary Receipts representing Ordinary Shares, nominal value 2 per share** | **New York Stock Exchange** |

Securities registered or to be registered pursuant to Section 12(g) of the Act.
**None**
**(Title of class)**
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.
**10 5/8% Senior Notes due 2007**
**(Title of class)**

Indicate the number of outstanding shares of each of the issuer s classes of capital or common stock as of the close of the period covered by the annual report.

**11,682,218 Ordinary Shares, nominal value 2 per share**

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes x No o

Indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 o Item 18 x

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## EXPLANATORY NOTE

This Amendment No. 1 to Compagnie Générale de Géophysique s ( CGG ) Annual Report on Form 20-F for the fiscal year ended December 31, 2004 (this Amendment ) is being filed solely to amend Items 3, 5 and 18. CGG s Annual Report on Form 20-F for the fiscal year ended December 31, 2004 (the Original Filing ) was originally filed with the U.S. Securities and Exchange Commission (the SEC ) on April 18, 2005. This Amendment:

- Provides revised and expanded disclosure with respect to Operating Results Before Depreciation and Amortization ( ORBDA ), including a reconciliation to net cash provided by operating activities, in Item 5 and refers to this disclosure in footnote 5 of the selected financial data in Item 3; and

- Provides additional disclosure with respect to revenue recognition for both multi-client survey accounting and exclusive survey accounting in Note 1 of Item 18.

For the convenience of the reader, this Amendment includes the complete text of all Items of the Form 20-F, including the complete text of Items 3, 5 and 18, as amended. However, other than the amendments described above, no changes have been made to these or any other Items to the Form 20-F as originally filed. This Amendment continues to speak as of the date of the original filing of the Form 20-F and, except as described above, does not purport to amend or update the information contained in the Form 20-F filed on April 18, 2005, or reflect any events that have occurred after the Form 20-F was filed.

## PRESENTATION OF INFORMATION

In this annual report, references to United States or U.S. are to the United States of America, references to U.S. dollars , $ or U.S.$ are to United States dollars, references to France are to the Republic of France, references t FF are to French francs and references to Euro or are to the single currency introduced at the start of the third stage European Economic and Monetary Union pursuant to the Treaty Establishing the European Union.

As our shares are listed on the New-York Stock Exchange (in the form of American Depositary Shares), we are required to file an annual report on Form 20-F with the SEC including our annual financial statements reconciled to accounting principles generally accepted in the United States ( U.S. GAAP ).

For the year ended December 31, 2000, there were no material differences between French generally accepted accounting principles ( French GAAP ) and U.S. GAAP. Beginning with the financial statements for fiscal year 2001, French GAAP differs in certain significant respects from U.S. GAAP.

The differences between French GAAP and U.S. GAAP as they relate to the CGG group, and the reconciliation of net income and shareholders equity to U.S. GAAP, are described in note 28 to our consolidated financial statements.

We adopted International Financial Reporting Standards ( IFRS ) as our primary accounting principles from January 1, 2005, and our first consolidated financial statements under IFRS will be those as of and for the three months ended March 31, 2005. We will present restated financial statements under IFRS as of and for the three months ended March 31, 2004.

Unless otherwise indicated, statements in this annual report relating to market share, ranking and data are derived from management estimates based, in part, on independent industry publications, reports by market research firms or other published independent sources. Any discrepancies in any table between totals and the sums of the amounts listed in such table are due to rounding.

As used in this annual report CGG , we , us and our means Compagnie Générale de Géophysique and its subsidiaries, except as otherwise indicated.

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## FORWARD-LOOKING STATEMENTS

This annual report includes forward-looking statements, including, without limitation, certain statements made in the sections entitled Business and Operating and Financial Review and Prospects. We have based these forward-looking statements on our current views and assumptions about future events.

These forward-looking statements are subject to risks, uncertainties and assumptions we have made, including, among other things:

- changes in international economic and political conditions, and in particular in oil and gas prices;
- our ability to reduce costs;
- our ability to finance our operations on acceptable terms;
- the timely development and acceptance of our new products and services;
- the effects of competition;
- political, legal and other developments in foreign countries;
- the timing and extent of changes in exchange rates for non-U.S. currencies and interest rates;
- the accuracy of our assessment of risks related to acquisitions, projects and contracts, and whether these risks materialize;
- our ability to integrate successfully the businesses or assets we acquire;
- our ability to sell our seismic data library;
- our ability to access the debt and equity markets during the periods covered by the forward-looking statements, which will depend on general market conditions and on our credit ratings for our debt obligations; and
- our success at managing the risks of the foregoing.

We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this annual report might not occur.



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## PART I

### Item 1: IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

### Item 2: OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

### Item 3: KEY INFORMATION

**Selected Financial Data**

The table below sets forth selected consolidated financial and operating data as of and for each of the five years in the period ended December 31, 2004, and the table should be read in conjunction with, and is qualified in its entirety by reference to, our consolidated financial statements and Operating and Financial Review and Prospects included elsewhere in this annual report. The selected financial data for each of the years in the five-year period ended December 31, 2004 have been derived from our audited consolidated financial statements prepared in accordance with French GAAP, which differs in certain respects from U.S. GAAP.

For the year ended December 31, 2000 there were no material differences between French GAAP and U.S. GAAP. Beginning with the financial statements for the year ended December 31, 2001, French GAAP differs in certain significant respects from U.S. GAAP.

We adopted IFRS as our primary accounting principles from January 1, 2005, and our first consolidated financial statements under IFRS will be those as of and for the three months ended March 31, 2005. We will present restated financial statements under IFRS as of and for the three months ended March 31, 2004. Please read Operating and Financial Review and Prospects Trend Information Transition to IFRS Accounting .

The differences between French GAAP and U.S. GAAP as they relate to us, and the reconciliation of net income and shareholders equity to U.S. GAAP are described in Note 28 to our consolidated financial statements.

The information in the following table and in our consolidated financial statements is presented in euro. We prepared our consolidated financial statements in French francs for periods through December 31, 2000; however, we have adopted the euro as our reporting currency for the periods after January 1, 2001. We have restated our 2000 annual consolidated financial statements in euro at the fixed exchange rate of 1.00 = FF 6.55957. Although our 2000 annual consolidated financial statements depict the same trends as would have been shown had they been presented in French francs, they may not be directly comparable to the financial statements of other companies originally reported in a currency other than the French franc and subsequently restated in euro. A comparison of our financial statements and those of another company that had historically used a reporting currency other than the French franc that takes into account actual fluctuations in exchange rates could be materially different from a comparison of our financial statements and those of another company as translated into euro.

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| | As of and for the year ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2004 | 2003 | 2002 | 2001 | 2000 |
| | (in millions, except per share and operating data) | | | | |
| ***Statement of Operations Data:*** | | | | | |
| *Amounts in accordance with French GAAP:* | | | | | |
| Operating revenues | 692.7 | 612.4 | 700.7 | 802.9 | 695.3 |
| Cost of operations | (556.0) | (491.0) | (531.4) | (641.7) | (579.9) |
| Gross profit | 136.7 | 121.4 | 169.3 | 161.2 | 115.4 |
| Research and development expenses, net | (33.5) | (26.9) | (27.1) | (35.3) | (26.9) |
| Selling, general and administrative expenses | (79.5) | (78.8) | (86.7) | (84.8) | (83.2) |
| Other revenues (expenses) | 12.0 | (5.1) | 6.1 | 13.7 | 13.5 |
| Operating income | 35.7 | 10.6 | 61.6 | 54.8 | 18.8 |
| Interest and other financial income and expense, net | (22.4) | (21.0) | (32.6) | (23.0) | (15.9) |
| Exchange gains (losses), net | 4.4 | 4.6 | 7.9 | (1.4) | (5.8) |
| Equity in income of affiliates | 10.3 | 6.5 | 6.4 | 8.8 | 2.6 |
| Income (loss) before income taxes and minority interest | 28.0 | 0.7 | 43.3 | 39.2 | (0.3) |
| Income tax expense | (9.7) | (3.1) | (17.4) | (16.8) | (10.6) |
| Goodwill amortization | (6.2) | (7.7) | (6.3) | (6.5) | (4.7) |
| Minority interest | (1.0) | (0.3) | (2.2) | (0.2) | 3.6 |
| Net income (loss) | 11.1 | (10.4) | 17.4 | 15.7 | (12.0) |
| Per share amounts: Basic[1] | 0.95 | (0.89) | 1.49 | 1.35 | (1.28) |
| Diluted[2] | 0.94 | (0.89) | 1.49 | 1.35 | (1.28) |
| | | | | | |
| *Amounts in accordance with U.S. GAAP:* | | | | | |
| Operating revenues | 709.5 | 645.6 | 719.0 | 795.0 | 695.3 |
| Operating income | 55.0 | 42.7 | 81.9 | 48.6 | 14.1 |
| Net income (loss) | 3.3 | 3.1 | 15.1 | 9.3 | (12.0) |
| Per share amounts: | | | | | |
| Basic common stock holder[1] | 0.28 | 0.27 | 1.29 | 0.80 | (1.28) |
| Diluted common stock holder[2] | 0.28 | 0.26 | 1.29 | 0.80 | (1.28) |
| | | | | | |
| ***Balance Sheet Data:*** | | | | | |
| *Amounts in accordance with French GAAP:* | | | | | |
| Cash and cash equivalents | 130.8 | 96.4 | 116.6 | 56.7 | 60.1 |
| Working capital[3] | 106.7 | 81.1 | 170.9 | 191.8 | 180.3 |
| Property, plant and equipment, net | 204.5 | 216.0 | 265.0 | 280.7 | 140.7 |
| Multi-client data library | 124.5 | 145.0 | 127.1 | 91.9 | 77.5 |
| Total assets | 939.6 | 879.4 | 1,024.7 | 1,014.4 | 839.3 |
| Gross debt[4] | 267.2 | 232.4 | 307.8 | 279.5 | 251.8 |
| Shareholders equity | 395.7 | 396.6 | 437.5 | 462.8 | 320.7 |

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| | As of and for the year ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2004 | 2003 | 2002 | 2001 | 2000 |
| | (in millions, except per share and operating data) | | | | |
| *Amounts in accordance with U.S. GAAP:* | | | | | |
| Total assets | 975.8 | 924.2 | 1,036.8 | 1,008.0 | 839.3 |
| Gross debt[4] | 266.5 | 232.4 | 307.8 | 279.5 | 251.8 |
| Shareholders equity | 396.4 | 413.4 | 431.0 | 456.4 | 320.7 |
| ***Other Historical Financial Data and Ratios:*** | | | | | |
| *Amounts derived from French GAAP data:* | | | | | |
| ORBDA[5] | 165.4 | 162.3 | 210.1 | 200.5 | 150.5 |
| Capital expenditures[6] | 51.7 | 44.4 | 130.6 | 55.0 | 39.5 |
| Investments in multi-client data library | 51.1 | 109.7 | 130.1 | 78.8 | 92.5 |
| Total Debt | 270.0 | 235.6 | 318.3 | 285.7 | 264.5 |
| Net Debt[7] | 139.2 | 139.2 | 201.7 | 229.0 | 204.4 |
| Total Debt/ORBDA[5] | 1.63x | 1.45x | 1.51x | 1.42x | 1.76x |
| Net Debt[7]/ORBDA[5] | 0.84x | 0.86x | 0.96x | 1.14x | 1.36x |
| ORBDA[5]/net interest expense[8] | 7.38x | 7.73x | 6.44x | 8.72x | 9.47x |
| *Amounts derived from U.S. GAAP data:* | | | | | |
| EBITDA[9] | 172.4 | 190.1 | 277.1 | 195.2 | 158.1 |
| ***Operating Data (at end of period):*** | | | | | |
| Land crews in operation | 8 | 12 | 14 | 12 | 20 |
| Streamers in operation | 39 | 42 | 42 | 48 | 30 |
| Data processing centers in operation | 26 | 26 | 26 | 26 | 25 |

(1) Basic per share amounts have been calculated on the basis of 11,681,406 issued and outstanding shares in 2004, 11,680,718 issued and outstanding shares in 2003 and 2002, 11,609,393 issued and outstanding shares in 2001 and 9,389,214 issued and outstanding shares in 2000.

(2) Diluted per share amounts have been calculated on the basis of 11,818,603 issued and outstanding shares in 2004, 11,760,630 issued and outstanding shares in 2003, 11,680,718 issued and outstanding shares in 2002, 11,609,393 issued and outstanding shares in 2001 and 9,485,053 issued and outstanding shares in 2000. In 2002 and 2001, the effects of stock options were not dilutive (as a result of applying the treasury stock method).

(3) Consists of trade accounts and notes receivable, inventories and work-in-progress and other current assets less trade accounts and notes payable, accrued payroll costs, income tax payable, advance billings to customers and other current liabilities.

(4) Gross debt means total long-term debt, including current maturities, capital leases and accrued interest but excluding bank overdrafts.

(5) A discussion of ORBDA (Operating Result Before Depreciation and Amortization, previously denominated Adjusted EBITDA ), including a reconciliation to net cash provided by operating activities, is found in Item 5: Operating and Financial Review and Prospects Liquidity and Capital Resources .

(6) Capital expenditures is defined as purchases of property, plant and equipment plus equipment acquired under capital lease.

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The following table presents a reconciliation of capital expenditures to purchases of property, plant and equipment and equipment acquired under capital lease for the periods indicated:

| | For the year ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2004 | 2003 | 2002 | 2001 | 2000 |
| | | | (in millions) | | |
| Purchase of property, plant and equipment | 43.0 | 36.3 | 122.0 | 41.8 | 33.1 |
| Equipment acquired under capital lease | 8.7 | 8.1 | 8.6 | 13.2 | 6.4 |
| **Capital expenditures** | 51.7 | 44.4 | 130.6 | 55.0 | 39.5 |

(7) Net Debt is the amount of bank overdrafts plus current portion of long-term debt, plus long-term debt less cash and cash equivalents.

(8) Net interest expense is another term for Interest and other financial income and expense, net as stated in our statements of operations.

(9) EBITDA is defined as net income (loss) plus income tax, plus interest and other financial income and expense, plus depreciation and amortization. EBITDA is presented as additional information because we understand that it is one measure used by certain investors to determine our operating cash flow and historical ability to meet debt service and capital expenditure requirements. However, other companies may present EBITDA differently than we do. EBITDA is not a measure of financial performance under French GAAP, U.S. GAAP or IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with French GAAP, U.S. GAAP or IFRS.

The following table presents a reconciliation of EBITDA to net income under U.S. GAAP for the periods indicated as follows:

| | For the year ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2004 | 2003 | 2002 | 2001 | 2000 |
| | | | (in millions) | | |
| Net Income (loss) | 3.3 | 3.1 | 15.1 | 9.3 | (12.0) |
| Interest | 22.4 | 25.1 | 33.1 | 23.0 | 15.9 |
| Taxes | 15.0 | 16.7 | 13.3 | 16.8 | 10.6 |
| Depreciation and amortization | 131.7 | 145.2 | 215.6 | 146.1 | 143.6 |
| **EBITDA** | 172.4 | 190.1 | 277.1 | 195.2 | 158.1 |

**The European Monetary System**

Under the Treaty on European Union negotiated at Maastricht, The Netherlands, in 1991 (the Maastricht Treaty ) and signed by the then 12 EU Member States in early 1992, the European Monetary Union (the EMU ), with a single European currency under the monetary control of the European Central Bank, was introduced. On January 1, 1999, the last stage of the EMU came into effect with the adoption of fixed exchange rates between national currencies and the

euro. On January 1, 2002, the euro became the official currency of the following 12 EU Member States: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal and Spain. As a result, national currencies (including the French franc) ceased to exist during the first quarter of 2002, after transition periods during which national currencies of such Member States and the euro co-existed.

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**Exchange Rates**

The following table sets forth, for the periods and dates indicated, certain information concerning the exchange rates for the euro expressed in U.S. dollars per euro. Information concerning the U.S. dollar exchange rate is based on the noon buying rate in New York City for cable transfers in foreign currencies as certified for customs purposes by the Federal Reserve Bank of New York (the Noon Buying Rate ). Such rates are provided solely for convenience and no representation is made that French francs or euro were, could have been, or could be, converted into U.S. dollars at these rates or at any other rate. Such rates were not used by us in the preparation of our audited consolidated financial statements included elsewhere in this annual report. The Noon Buying Rate on April 15, 2005 was U.S.$1.2928 per euro.

| | Dollars per Euro Exchange Rate | | | |
|---|---|---|---|---|
| **Year ended December 31,** | **Period-end** | **High** | **Low** | **Average[1]** |
| 2000 | 0.94 | 1.03 | 0.83 | 0.92 |
| 2001 | 0.89 | 0.95 | 0.84 | 0.90 |
| 2002 | 1.05 | 1.05 | 0.86 | 0.95 |
| 2003 | 1.26 | 1.26 | 1.04 | 1.14 |
| 2004 | 1.35 | 1.36 | 1.18 | 1.24 |

| **Month** | | |
|---|---|---|
| October 2004 | 1.27 | 1.24 |
| November 2004 | 1.33 | 1.27 |
| December 2004 | 1.36 | 1.33 |
| January 2005 | 1.35 | 1.30 |
| February 2005 | 1.33 | 1.28 |
| March 2005 | 1.35 | 1.29 |
| April 2005 (through April 15) | 1.30 | 1.28 |

(1) The annual average rate is the average of the Noon Buying Rates on the last business day of each month.

U.S. dollar translations included for convenience throughout this annual report for dates other than the last day of the periods presented above have been made at the Noon Buying Rates on such dates.

**Capitalization and Indebtedness**

Not applicable.

**Reasons for the Offer and Use of Proceeds**

Not applicable.

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## Risk Factors

### Risks Related to Our Business

***Our results of operations can be significantly affected by currency fluctuations.***

As a company that derives a substantial amount of its revenue from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates. In each of the years ended December 31, 2004, 2003 and 2002, over 90% of our operating revenues and approximately two-thirds of our operating expenses were denominated in currencies other than the euro. These included the U.S. dollar and, to a significantly lesser extent, other non-euro Western European currencies, principally the British pound and the Norwegian kroner. In addition, a significant portion of our revenues that were invoiced in euros related to contracts that were effectively priced in U.S. dollars, as the U.S. dollar often serves as the reference currency when bidding for contracts to provide geophysical services. Our exposure to fluctuations in the euro/ U.S. dollar exchange rate has increased considerably over the last few years due to increased sales outside of Europe.

Fluctuations in the exchange rate of the euro against such other currencies, particularly the U.S. dollar, have had in the past and can be expected in future periods to have a significant effect upon our results of operations. Since we participate in competitive bids for data acquisition contracts that are denominated in U.S. dollars, a depreciation of the U.S. dollar against the euro (such as has occurred since the second half of 2003) harms our competitive position against that of other companies whose costs and expenses are denominated in U.S. dollars. For financial reporting purposes, such depreciation negatively affects our reported results of operations since U.S. dollar-denominated earnings that are converted to euros are stated at a decreased value. While we attempt to reduce the risks associated with such exchange rate fluctuations through our hedging policy, we cannot assure you that we will be effective or that fluctuations in the value of the currencies in which we operate will not materially affect our results in the future.

***We have had operating losses in the past and we cannot assure you that we will be profitable in the future.***

We recorded net losses each year from 1998 to 2000. In 2001 and 2002, we recorded net income of 15.7 million and 17.4 million, respectively, marking a return to profitability. After recording a net loss of 10.4 million in 2003, primarily due to a charge for the restructuring of our land seismic acquisition business unit, we recorded net income of 11.1 million in 2004. We have taken measures designed to respond to the circumstances existing in the industry underlying prior year losses; however, we cannot assure you that the implementation of these actions will lead to profitability in future years.

***We are subject to risks related to our international operations that could harm our business and results of operations.***

With operations worldwide, and with a majority of our revenues derived outside of the United States and Western Europe, including emerging markets, our business and results of operations are subject to various risks inherent in international operations. These risks include:

- instability of foreign economies and governments;
- risks of war, seizure, renegotiation or nullification of existing contracts; and
- foreign exchange restrictions, laws and other policies affecting trade and investment.

While we carry insurance against political risks associated with such operations, in amounts we consider appropriate in accordance with industry practices, we cannot assure you that we will not be subject to material adverse developments with respect to our international operations. In addition the tax treatment of certain of our complex transactions is difficult to predict with certainty, and, although we believe that we have made appropriate provisions for taxation, the imposition of tax on such transactions could require cash payments by us.

We and our subsidiaries and our affiliated entities also conduct business in countries known to experience government corruption. We are committed to doing business in accordance with our code of ethics but there is a risk that we, our subsidiaries or affiliated entities or their respective officers, directors, employees and agents may take action in violation of applicable laws, including the Foreign Corrupt Practices Act of 1977. Any such violations could result in substantial civil and/ or criminal penalties and might adversely affect our business and

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results of operations or financial condition. See Directors, Senior Management and Employees Board Practices Audit Committee .

***Future businesses and technologies that we may acquire may be difficult to integrate, disrupt our business, dilute stockholder value or divert management attention.***

An aspect of our current business strategy is to seek new businesses, technologies and products to broaden the scope of our existing and planned product lines and technologies. For example, we acquired several manufacturers of seismic products in 2003 and 2004 in order to expand Sercel s product line. We also believe that the seismic industry should continue to consolidate with the goal of exploiting synergies and to promoting the emergence of seismic operators possessing larger financial and technological bases. Although we regularly explore opportunities with respect to possible acquisitions of businesses, technologies or products, we do not currently have any understandings, commitments or agreements relating to any such material transactions. Future transactions of this type could result in the incurrence of debt and contingent liabilities and an increase in amortization expenses related to goodwill and other intangible assets, which could have a material adverse effect upon us.

Risks we could face with respect to recent and future acquisitions include:

- difficulties in the integration of the operations, technologies, products and personnel of the acquired company;
- diversion of management s attention away from other business concerns; and
- expenses of any undisclosed or potential legal liabilities of the acquired company.

The risks associated with acquisitions could have a material adverse effect upon our business, financial condition and results of operations. We cannot assure that we will be successful in consummating future acquisitions on favorable terms, if at all.

***We invest significant amounts of money in acquiring and processing seismic data for multi-client surveys and for our data library without knowing precisely how much of the data we will be able to sell or when and at what price we will be able to sell the data.***

We invest significant amounts in acquiring and processing seismic data that we own. By making such investments, we assume the risk that:

- we may not fully recover the costs of the data through future sales. The amounts of these data sales are uncertain and depend on a variety of factors. Many of these factors are beyond our control. In addition, the timing of these sales can vary greatly from period to period. Technological or regulatory changes or other developments could also adversely affect the value of the data;
- the value of our multi-client data could be significantly adversely affected if any material adverse change occurred in the general prospects for oil and gas exploration, development and production activities in the areas where we acquire multi-client data; and
- any reduction in the market value of such data will require us to write down its recorded value, which could have a significant adverse effect on our results of operations.

***Our working capital needs are difficult to forecast and may be subject to significant and rapid increases which could result in additional financing requirements that we may not be able to obtain at all or on satisfactory terms.***

It is difficult for us to predict with certainty our working capital needs. This is due primarily to working capital requirements related to our marine seismic acquisition business and related to the development and introduction of new lines of geophysical equipment products. For example, under specific circumstances, we may extend the length of payment terms we grant to our customers. We may therefore be subject to significant and rapid increases in our working capital needs that we may have difficulty financing on satisfactory terms or at all due to limitations in our existing debt agreements.

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***Technological changes and new products and services are frequently introduced in our market, and our technology could be rendered obsolete by these introductions or we may not be able to develop and produce new and enhanced products on a cost-effective and timely basis.***

Technology changes rapidly in our industry, and new and enhanced products are frequently introduced in the market for our products and services, particularly in our equipment manufacturing and data processing and geosciences sectors. Our success depends to a significant extent upon our ability to develop and produce new and enhanced products and services on a cost-effective and timely basis in accordance with industry demands. While we commit substantial resources to research and development, we cannot assure you that we will not encounter resource constraints or technical or other difficulties that could delay our introduction of new and enhanced products and services in the future. In addition, our continuing development of new products inherently carries the risk of obsolescence with respect to our older products. We cannot assure you that new and enhanced products and services, if introduced, will gain market acceptance or will not be adversely affected by technological changes or product or service introductions.

***We depend on proprietary technology.***

Our results of operations depend in part upon our proprietary technology. We rely on a combination of patents, trademarks and trade secret laws to establish and protect our proprietary technology. We hold or have applied for approximately 140 patents, in various countries, for products and processes. These patents last for between four and 20 years, depending on the date of filing and the protection accorded by each country. In addition, we enter into confidentiality and license agreements with our employees, customers and potential customers and limit access to and distribution of our technology. However, we cannot assure you that actions we take to protect our proprietary rights will be adequate to deter the misappropriation or independent third party development of our technology. Although we have not been involved in any material litigation regarding our intellectual property rights or the possible infringement of intellectual property rights of others, we cannot assure you that such litigation will not be brought in the future. In addition, the laws of certain foreign countries do not protect proprietary rights to the same extent as either the laws of France or the laws of the United States.

***We depend on attracting and retaining qualified employees to develop our business know-how.***

Our results of operations depend in part upon our business know-how. We believe that development of our know-how depends in large part on our ability to attract and retain highly skilled and qualified personnel. Any inability of ours in the future to hire, train and retain a sufficient number of qualified employees could impair our ability to manage and maintain our business and to develop and protect our know-how.

***We rely on significant customers, so the loss of a single or a few customers could have a material adverse impact on our business.***

A relatively small number of clients account for a significant percentage of our revenues. During 2003, our three largest clients accounted for 14.7%, 8.5% and 5.5% of our operating revenues, respectively. During 2004, our two largest clients accounted for 6.7% and 6.1% of our operating revenues, respectively. The loss of a substantial amount of the business of any of these clients could have a material adverse effect on our operating revenues and our business.

***The nature of our business is subject to significant ongoing operating risks for which we may not have adequate insurance or for which we may not be able to procure adequate insurance on economical terms, if at all.***

Our seismic data acquisition activities, particularly in deepwater marine areas, are often conducted under harsh weather and other hazardous conditions and are subject to risks of loss from business interruption, delay or equipment destruction. We carry insurance against the destruction of or damage to our seismic equipment and against business interruption for our data processing activities in amounts we consider appropriate in accordance with industry practice. However, we cannot assure you that our insurance coverage will be adequate in all circumstances or against all hazards, or that we will be able to maintain adequate insurance coverage in the future at commercially reasonable rates or on acceptable terms.

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***We will be required to adopt new accounting standards as of and for the three months ended March 31, 2005 and subsequent fiscal periods that may materially change our financial statements and financial reporting.***

European Union regulations currently require that all companies whose securities are listed in the European Union must apply IFRS in preparing their financial statements for financial years beginning on or after January 1, 2005. As a result, we will use IFRS in preparing our financial statements for the three months ended March 31, 2005 and subsequent financial periods. When prepared in accordance with the new IFRS standards in fiscal year 2005, our financial statements may differ materially from our financial statements prepared in accordance with French GAAP, particularly with respect to our accounting treatment of development costs and goodwill amortization. Consequently, the methods used by the financial community to assess our financial performance and value our ordinary shares could be affected. See Management s Discussion and Analysis of Financial Condition and Result of Operations Adoption of IFRS Accounting .

**Risks Related to our Industry**

***We depend on capital expenditures by the oil and gas industry, and reductions in such expenditures have had, and may in the future have, a material adverse impact on our business.***

Demand for our products and services has historically been dependent upon the level of capital expenditures by oil and gas companies for exploration, production and development activities. These expenditures are significantly influenced by oil and gas prices and by expectations regarding future oil and gas prices. Oil and gas prices may fluctuate based on relatively minor changes in the supply and demand for oil and gas, expectations regarding future supply and demand for oil and gas and certain other factors beyond our control. Lower or volatile oil and gas prices tend to limit the demand for our services and products.

Factors affecting the prices of oil and gas include:

- level of demand for oil and gas;
- worldwide political, military and economic conditions, including political developments in the Middle East, economic growth levels and the ability of OPEC to set and maintain production levels and prices for oil;
- level of oil and gas production;
- policies of governments regarding the exploration for and production and development of oil and gas reserves in their territories; and
- global weather conditions.

The markets for oil and gas historically have been volatile and are likely to continue to be so in the future.

Historically, there has been an average lag of six months between recovery in the market for petroleum products and implementation by oil companies of projects requiring seismic services. However, despite oil prices above $30 per barrel since mid-2003, oil companies only began to significantly increase their demand for seismic services in mid-2004, due to uncertainty about future price levels for oil and gas. We believe that global geopolitical uncertainty, particularly following the events of September 11, 2001 and the conflict in Iraq in 2003, harmed the confidence and visibility that are essential in our clients long term decision-making processes. As a consequence, they have delayed or cancelled many projects. Continued geopolitical uncertainty in the Middle Eastern producing region (where we are particularly active) could lead oil companies to delay or cancel additional geophysical projects. Any events that affect worldwide oil and gas supply, demand or prices or that generate uncertainty in the market could reduce exploration and development activities and negatively affect our operations. We cannot assure you as to future oil and gas prices or the resulting level of industry spending for exploration, production and development activities.

***We are subject to intense competition, which could limit our ability to maintain or increase our market share and to maintain our prices at profitable levels.***

Most of our contracts are obtained through a competitive bidding process, which is standard for the industry in which we operate. While no single company competes with us in all of our segments, we are subject to intense

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competition with respect to each of our segments. We compete with large, international companies as well as smaller, local companies. In addition, we compete with major service providers and government-sponsored enterprises and affiliates. We are subject to particularly intense competition in the land seismic acquisition market, notably from Chinese companies that have entered the market and have expanded their international market share. Some of our competitors operate more data acquisition crews than we do and have substantially greater financial and other resources. These and other competitors may be better positioned to withstand and adjust more quickly to volatile market conditions, such as fluctuations in oil and gas prices and production levels, as well as changes in government regulations. In addition, if geophysical service competitors increase their capacity in the future (or fail to reduce capacity if demand decreases), the excess supply in the seismic services market could apply downward pressure on prices.

***We have high levels of fixed costs that will be incurred regardless of our level of business activity.***

Our business has high fixed costs, and downtime or low productivity due to reduced demand, weather interruptions, equipment failures or other causes could result in significant operating losses.

***Our land and marine seismic acquisition activities are seasonal in nature.***

Our land and marine seismic acquisition activities are seasonal in nature. We generally experience decreased revenues in the first quarter of each year due to the effects of weather conditions in the Northern Hemisphere and to the fact that our principal clients are generally not prepared to fully commit their annual exploration budget to specific projects during that period.

We have historically experienced higher levels of activity in our equipment manufacturing operations in the fourth quarter as our clients seek to fully deploy annual budgeted capital.

**Risks Related to our Indebtedness**

***Our substantial debt could adversely affect our financial health and prevent us from fulfilling our obligations.***

We have a significant amount of debt. As of December 31, 2004, our total consolidated long-term debt, consolidated total assets and shareholders equity were 267.2 million, 939.6 million and 395.7 million, respectively.

Our substantial debt could have important consequences to you. For example, it could

- increase our vulnerability to general adverse economic and industry conditions;
- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures and other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our businesses and the industries in which we operate;
- place us at a competitive disadvantage compared to our competitors that have less debt; and
- limit, along with the financial and other restrictive covenants of our indebtedness, among other things, our ability to borrow additional funds.

Failing to comply with restrictive covenants in our loan agreements or the indenture relating to our senior notes could result in an event of default that, if not cured or waived, could have a material adverse effect on us.

***Despite current debt levels, we and our subsidiaries may still be able to incur substantially more debt.***

We and our subsidiaries may be able to incur substantial additional debt (including secured debt) in the future. As of December 31, 2004, we had no outstanding borrowings under our syndicated credit facility, leaving us with U.S.$60 million of availability thereunder. We have availability of 10.2 million under all other credit facilities. If new debt is added to our and our subsidiaries current debt levels, the related risks that we, and they, now face could intensify.

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***To service our indebtedness, we will require a significant amount of cash. Our ability to generate cash depends on many factors beyond our control.***

Our ability to make payments on and refinance our indebtedness and to fund planned capital expenditures will partly depend on our ability to generate cash in the future. This, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

We cannot assure you that our business will generate sufficient cash flow from operations, that we will realize operating improvements on schedule, that we will find purchasers for the assets we intend to sell or that future borrowings will be available to us in an amount sufficient to enable us to pay our indebtedness or to fund our other liquidity needs. If we are unable to satisfy our debt obligations, we may have to undertake alternative financing plans, such as refinancing or restructuring our indebtedness, selling assets, reducing or delaying capital investments or seeking to raise additional capital. We cannot assure you that any refinancing or debt restructuring would be possible, that any assets could be sold or, if sold, the timing of the sales and the amount of proceeds realized from those sales, or that additional financing could be obtained on acceptable terms.

***Our debt agreements may limit our ability to respond to changes in market conditions or to pursue business opportunities.***

As of December 31, 2004, we had total long-term debt of 267.2 million and total shareholders equity of 395.7 million. We may need to borrow additional amounts in the future to meet our anticipated working capital and capital expenditure needs. In addition, our $10^5/8\%$ senior notes and our new U.S.$60 million syndicated credit facility, which was signed on March 12, 2004 and replaces our previous syndicated credit facility, contain restrictive covenants. These covenants include restrictions on payments and investments, the incurrence of indebtedness, the creation of liens, the entry into sale and leaseback transactions, the issuance and sale of subsidiary stock and the payment of dividends and other payments by certain of our subsidiaries. Complying with the restrictions contained in some of these covenants requires us to meet certain ratios and tests, notably with respect to consolidated interest coverage, total assets, net debt, equity and net income. The requirement that we comply with these provisions may negatively affect our ability to react to changes in market conditions, take advantage of business opportunities we believe to be desirable, obtain future financing, fund needed capital expenditures, significantly increase research and development expenditures, or withstand a continuing or future downturn in our business.

***If we are unable to comply with the restrictions and covenants in our debt agreements, there could be a default under the terms of these agreements, which could result in an acceleration of payment of funds that we have borrowed.***

If we are unable to comply with the restrictions and covenants in our current or future debt agreements, there would be a default under the terms of these agreements. Our ability to meet our financial ratios and tests may be affected by events beyond our control. As a result, we cannot assure you that we will be able to meet these tests. In the event of a default under these agreements, our lenders could terminate their commitments to lend to us or accelerate the loans and declare all amounts borrowed due and payable. Borrowings under other debt instruments that contain cross-acceleration or cross-default provisions may also be accelerated and become due and payable. If any of these events occur, we cannot assure you that our assets would be sufficient to repay in full all of our indebtedness or that we would be able to find alternative financing. Even if we could obtain alternative financing, we cannot assure you that it would be on terms that are favorable or acceptable to us.

***Our results could be affected by changes in interest rates.***

Our sources of liquidity include credit facilities with financial institutions charging variable interest rates over the course of drawdown periods of from one to twelve months. As a result, our interest expenses could increase if short-term interest rates increase. However, our exposure to interest rate fluctuations is reduced to the extent that the main part of our financial debt at December 31, 2004 consisted of a bond issue maturing in November 2007 and bearing a fixed interest rate and subordinated bonds convertible into new ordinary shares or redeemable into new shares and/or existing shares and/or in cash maturing in November 2012 and also bearing a fixed interest rate. A large part of our sources of liquidity also consists of long-term credit facilities and capital leases of various durations with fixed interest rates.

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## Item 4: INFORMATION ON THE COMPANY

### History and Development of the Company

We were established in 1931 to market geophysical techniques for appraising underground geological resources. Since that time, we have gradually come to specialize in seismic techniques adapted to exploration for and production of oil and gas, while continuing to carry on other geophysical activities. Compagnie Générale de Géophysique is the parent company of the CGG group. We are a *société anonyme* incorporated under the laws of the Republic of France and operating under the French *Code de commerce*. Our registered office is 1, rue Léon Migaux, 91300 Massy, France. Our telephone number is (33) 1 64 47 3000.

Over the course of the last three years, we completed numerous acquisitions and dispositions which are described under Operating and Financial Review and Prospects Acquisitions and Dispositions in Item 5, and elsewhere in this annual report.

### Business Overview

We believe we are a leading international provider of geophysical services and a leading manufacturer of geophysical equipment. We provide geophysical services principally to oil and gas companies that use seismic imaging to help explore for, develop and manage oil and gas reserves by:

- identifying new areas where subsurface conditions are favorable for the accumulation of oil and gas;
- determining the size and structure of previously identified oil and gas fields; and
- optimizing development and production of oil and gas reserves (reservoir management).

We sell our geophysical equipment primarily to other geophysical service companies.

Our operations are organized into two main segments: Services and Products. Services accounted for 57% and Products accounted for 43% of our consolidated revenues for the year ended December 31, 2004. We generate revenues (by location of customers) on a worldwide basis. For the year ended December 31, 2004, 30% of our consolidated revenues were from the Americas, 40% from the Middle East and the Asia-Pacific region, 20% from Europe and CIS, and 10% from Africa.

### Industry Conditions

Overall demand for geophysical services and equipment is dependent upon spending by oil and gas companies for exploration, production development and field management activities. This spending depends in part on present and expected future oil and gas prices.

We believe that the medium-term outlook for the geophysical services sector, particularly the offshore segment, and the demand for geophysical products is fundamentally positive for a number of reasons:

- Renewed geopolitical stability in the aftermath of the Iraq conflict, while uncertain, may gradually restore confidence and visibility in the oil and gas industry, improving the prospects for new projects by our clients.
- Economic growth, particularly in more active regions such as Asia (notably China and India), is generating increased energy demand and leading to higher energy prices and increased exploration efforts.
- The need to replace depleting reserves and maximize the recovery of oil in existing reservoirs should encourage capital expenditures by our clients in exploration and production, which we expect will benefit the seismic industry.
- The scope of application of geophysical services has considerably increased over the last several years as a result of significant research and development efforts. Geophysical services can now potentially be applied to the entire sequence of exploration, development and production as opposed to exploration only. This is particularly true with technologies such as 4D (time lapse seismic data). The broader scope for services could increase the accessible markets for the geophysical industry.

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Finally, the depth and duration of the contraction in the geophysical sector between 1999 and 2003 may have increased awareness among geophysical service providers of the risks related to market overcapacity.

**Business Strategy**

We intend to continue to strengthen our competitive position in the global geophysical services and products markets by capitalizing on growth opportunities resulting from both the application of new technologies in every sector of our business from exploration to production and reservoir management and from our diversified geographic presence.

To achieve our objective, we have adopted the following strategies:

***Focus on Growth Areas for Geophysical Services***

We believe that the continued enhancement of our proprietary seismic data recording equipment and software will help us to remain among the leading providers of 3D land seismic surveys. We believe that our proprietary equipment and software provide us with a competitive advantage in specific growth markets, such as data acquisition in transition zones and difficult terrain, where recent technological advances have made seismic acquisition more feasible. We intend to focus on developing our technological capabilities in emerging markets for geophysical services, such as reservoir appraisal and production monitoring. We believe that, due to our extensive international experience, we also have a competitive advantage in certain geographic markets such as Europe, Africa, the Middle East and Latin America, where we have been operating longer than many of our competitors where we have developed partnerships with local seismic acquisition companies in several countries. We also believe that we have unique experience and expertise in complex land acquisition projects.

We intend to maintain our position in the marine seismic market for non-exclusive data by developing our non-exclusive data library. We believe that a strong position in this market segment enhances our global competitive position and may provide opportunities for significant future sales. In developing our non-exclusive data library, we carefully select survey opportunities in order to maximize our return on investment. Our policy is also to apply the latest advances in depth imaging technology to a selected part of our library.

Given the growing importance of geophysics in reservoir characterization, we intend to further develop the synergies between our data processing and reservoir services. This approach places us in a better position to meet the requirements of our clients with an extensive range of integrated services. We also intend to increase our processing capability in developing disciplines, such as lithology prediction (identification of the rock layers covering and surrounding the oil trap), as well as applications relating to reservoir description and monitoring, including 3D pre-stack depth imaging, multi-component and 4D studies. We also plan to continue promoting and developing our dedicated processing center services within our clients offices.

We also intend to develop an innovative suite of solutions for reservoir development and reservoir monitoring. In 2004, for example, we carried out several pilot sub sea projects using ocean-bottom seismic sensors in the Gulf of Mexico.

***Develop Technological Synergies for Products and Capitalize on New Generation Equipment***

We believe Sercel is the leading producer of land, marine and sub sea geophysical equipment. We plan to continue developing synergies among the technologies available within Sercel and to capitalize fully on our position as a market leader. Through internal expenditures on research and development, we seek to improve existing products and maintain an active new product development program in all segments of the geophysical equipment market (land, marine and ocean-bottom).

***Develop and Utilize Innovative Technology***

We believe that growth in demand for geophysical services will continue to be driven by the development of new technologies. We expect multi-component (3C/4C) surveys and time-lapse (4D) surveys to become increasingly important for new production-related applications, particularly in the marine sector, and expect specialized recording equipment for difficult terrain to become more important in land seismic data acquisition, particularly in transition zones and shallow water. We believe that to remain competitive, geophysical services

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companies will need to combine advanced data acquisition technology with consistently improving processing capacity in order to reduce further delivery times for seismic services. Our strategy is to take advantage of our leading technology and our ability to integrate our full range of services to enhance our position as a market leader in:

land and transition zone seismic data acquisition systems and know how;

innovative marine or subsea acquisition systems and services;

seismic data processing and reservoir services; and

manufacturing of land, marine and subsea data acquisition equipment.

In this respect, we intend to continue our high level of research and development investment to reinforce our technological leadership.

***Emphasize Client Service***

We believe it is important to operate in close proximity to our clients to develop a better understanding of their individual needs and to add measurable value to their business processes. We respond to these needs by creating new products or product enhancements that improve the quality of data and reduce the data delivery time to clients. We believe that our regional multi-client and dedicated data processing centers in our clients offices provide us with an advantage in identifying contract opportunities, optimizing service to clients and developing products responsive to new market demands, such as seismic techniques applied to reservoir management. We believe that we are well positioned to benefit from the industry trend towards increased outsourcing that is leading oil and gas companies to place greater emphasis on relationships and service quality, including health, safety and protection of the environment, in their selection of third party service providers, including geophysical services providers. We plan to continue implementing our strategy towards service to clients through:

tailoring our data acquisition operations to meet specific client demands;

expanding regional multi-client and dedicated on-site processing centers;

recruiting and training customer-oriented service staff;

organizing client training seminars focused on our products and services;

developing easy access to our multi-client data library through the increasing application of e-business technologies;

developing corporate contracts with our main clients; and

gaining access to new data acquisition markets, such as subsea and newly opening territories.

***Provide Integrated Services***

We are committed to providing clients with a full array of seismic data services, from acquisition and processing to data interpretation and management. We believe that integration of compatible technology and equipment increases the accuracy of data acquisition and processing, enhances the quality of our client service and thereby improves productivity in oil and gas exploration and production. Our clients increasingly seek integrated solutions to better evaluate known reserves and improve the ratio of recoverable hydrocarbons from producing fields. We are continuing to develop our ability to provide geosciences solutions through a combination of various exploration and production services, including technical data management, reservoir characterization and interpretation of well information.

***Monitor Industry Consolidation Opportunities***

We will continue to monitor developments in the industry and remain committed to pursuing attractive opportunities for consolidation, if they appear. We believe that the goal of any such consolidation would be to exploit

synergies and to promote the emergence of seismic operators possessing larger financial and technological bases.

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**Operating Revenues Data**

***Revenues by Activity***

The following table sets forth our consolidated operating revenues by activity, and the percentage of total consolidated operating revenues represented thereby, for the periods indicated:

| | Year ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2004 | | 2003 | | 2002 | |
| | (in millions, except percentages) | | | | | |
| Land SBU | 77.3 | 11% | 144.5 | 24% | 184.6 | 26% |
| Offshore SBU | 211.0 | 31% | 157.1 | 26% | 199.8 | 28% |
| Processing & Reservoir SBU | 105.0 | 15% | 111.6 | 18% | 123.2 | 18% |
| Services | 393.3 | 57% | 413.2 | 68% | 507.6 | 72% |
| Products | 299.4 | 43% | 199.2 | 32% | 193.1 | 28% |
| **Total** | 692.7 | 100% | 612.4 | 100% | 700.7 | 100% |

***Revenues by Region (by location of customers)***

The following table sets forth our consolidated operating revenues by region, and the percentage of total consolidated operating revenues represented thereby, for the periods indicated:

| | Year ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2004 | | 2003 | | 2002 | |
| | (in millions, except percentages) | | | | | |
| Americas | 207.7 | 30% | 233.6 | 38% | 289.0 | 41% |
| Asia-Pacific/ Middle East | 279.8 | 40% | 187.5 | 31% | 181.3 | 26% |
| Europe and CIS | 138.2 | 20% | 86.3 | 14% | 116.5 | 17% |
| Africa | 67.0 | 10% | 105.0 | 17% | 113.9 | 16% |
| **Total** | 692.7 | 100% | 612.4 | 100% | 700.7 | 100% |

**Services**

Our services are organized into the following three Strategic Business Units ( SBUs ) for increased efficiency: Land SBU, Offshore SBU and Processing & Reservoir SBU. We have also established a network of country managers responsible for promoting our entire spectrum of products and services in our main markets, focusing on providing comprehensive solutions to client problems. We believe that our capacity to provide integrated geophysical services is a significant competitive advantage that will help us to implement all components of our strategy.

***Land SBU***

We believe we are a leading land seismic contractor outside of North America, particularly in difficult terrain. At December 31, 2004, we had eight land crews performing specialized 3D and 2D seismic surveys, all of which were recording data. Revenues from our Land SBU accounted for 24% and 11% of our revenues in 2003 and 2004, respectively.

*Land Seismic Acquisition.* Land seismic acquisition includes all seismic surveying techniques where the recording sensor is either in direct contact with, or in close proximity to, the ground. Our Land SBU offers integrated services, including the acquisition and processing of seismic data on land, in transition zones and on the ocean floor (seabed surveys).

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*Description of Activity.* Seismic surveying on land is carried out by installing geophones linked to digital recorders that are used to receive the signals from reflected acoustical waves. Vibroseismic vehicles are the preferred method of generating acoustical waves since the frequency of the waves they emit can be precisely modulated by a computerized system and is less susceptible to noise or error. In difficult terrain or transition zones, however, other methods of generating acoustical waves must be utilized, such as explosives or air guns.

Seismic surveying in transition zones and on the sea bed is carried out by laying cables or other stationary measuring devices on the ocean floor. Ocean bottom cables allow seismic surveys to be conducted in areas not accessible to marine vessels, such as shallow water or the area around drilling platforms. Ocean bottom cables also provide high quality seismic data because they are in direct contact with the ocean floor.

Our land seismic crews are equipped with advanced proprietary equipment and software used in each stage of the land seismic acquisition process, including:

the Sercel 408UL seismic data recorders (Sercel s latest generation equipment), which feature 24-bit digital recording technology;

Geoland quality control software, which is used to verify that the location of field data points during a survey corresponds to their theoretical position;

the Sercel VE 432 vibrator electronic control system, used to synchronize and verify the emission of acoustical waves by vibrators; and

Geocluster software, used for on-site processing and quality control of acquired data.

We believe that our proprietary equipment and software enable us to offer high quality, fully integrated land seismic services. We have pioneered real-time positioning of geophones and seismic sources, quality control of positioning during land surveys, and onsite processing, which together increase the accuracy and efficiency of such surveys.

One of the challenges inherent in land acquisition surveys is gathering data without disrupting the sensitive ecosystems in which such surveys are frequently located. We have developed a strong position in environmentally sensitive zones, such as mountainous regions, tropical forests and swamps, by following a strict policy of preserving the natural environment to the extent possible. We have designed shallow draft boats and ultra-light drilling equipment to facilitate operations in such sensitive zones. This equipment can be transferred safely and rapidly from one area to another. We also work in conjunction with the local community at site locations, hiring local employees and obtaining necessary local authorizations to alleviate potential opposition to our operations.

The difficulty of access to survey sites is a major factor in determining the number of personnel required to carry out a survey and the cost of a survey. Fully staffed land or transition zone areas range in size from 40 to 3,000 members (principally composed of local employees in the latter case), and the cost of a survey can range from several hundred thousand to several million dollars per month, depending on the size of the team and the type and difficulty of the study.

We work closely with our clients to plan surveys in accordance with their specifications. This provides us with a competitive advantage in being selected to carry out surveys, whether such surveys are awarded based on competitive bids or directly negotiated agreements with clients. We regularly conduct land acquisition surveys for national and international oil companies.

We have developed partnerships with local seismic acquisition companies in several countries (Kazakhstan, Indonesia and Libya). We bring to these partnerships our international expertise, technical know-how, equipment and experienced key personnel as needed, while local partners provide their logistical resources, equipment and knowledge of the environment and local market.

In Saudi Arabia, our land seismic acquisition activities are conducted through Arabian Geophysical & Surveying Co. ( Argas ), a joint venture owned 49% by us and 51% by IESC (Industrialization and Energy Services Company), our local partner.

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*Restructuring.* In 2003, our land acquisition business unit went through a period of intense competition, as described above. This situation led us to reassess our presence in certain geographical land acquisition markets. In September 2003, we launched a restructuring program to substantially lower fixed costs in our land acquisition unit. This program was substantially completed by December 2003. The plan included the redundancy of 250 personnel in total, as well as the closure of a number of international representative offices, corresponding to expected annual fixed cost savings of approximately 30 million, with full effect in the second half of 2004. In the second half of 2004, land acquisition experienced historically low activity, especially in Africa and the Middle East, where numerous projects were delayed into 2005.

*Business Development Strategy.* Our strategy for the Land SBU is to:

- continue to upgrade the equipment used by our land acquisition crews with state-of-the-art land recording systems in the 3D segment, which in 2004 represented 75% of our Land SBU operations; and

- promote our expertise in harsh environments, sensitive areas (in terms of environmental or communities concerns) and transition zones, where we believe we have a competitive advantage in our principal markets: Europe, Africa, the Middle East, Asia and Latin America. These areas present barriers to entry and are less sensitive to pricing competition due to difficult working environments and the complexity of the projects.

***Offshore SBU***

We provide a full range of 3D marine seismic services, principally in the Gulf of Mexico, the North Sea and off the coasts of West Africa and Brazil as well as in the Asia-Pacific region. The capacity to both acquire and process marine seismic data is an important element of our overall strategy to maintain and develop our leading position in marine seismic data acquisition and processing. Revenues from our Offshore SBU accounted for 26% and 31% of our revenues in 2003 and 2004, respectively.

*Marine Seismic Acquisition.* We currently operate a fleet of five vessels, two of which we own, two of which we operate under renewable time charters with Louis Dreyfus Armateurs ( LDA ), one of the largest shipowners in France, and one of which we operate under time charter indirectly in partnership with LDA. Time charters allow us to change vessels in order to keep pace with market developments and provide us with the security of continued access to vessels without the significant investment required for ownership. LDA also supplies crews for the three vessels not wholly owned by us (other than persons directly involved in seismic data acquisition).

*Description of Activity.* Marine seismic surveys are conducted through the deployment of submersible cables (streamers) and acoustic sources (airguns) from marine vessels. Such streamers are each up to ten kilometers long and carry hydrophone groups normally spaced 12.5 meters apart along the length of the streamer. The recording capacity of a vessel is dependent upon the number of streamers it tows and the number of acoustic sources it carries, as well as the configuration of its data recording system. By increasing the number of streamers and acoustic sources used, a marine seismic operator can perform large surveys more rapidly and efficiently.

Each of our five seismic acquisition vessels is equipped with modern integrated equipment and software and has the capacity to conduct 3D surveys. Our vessels can deploy between six and ten streamers up to ten kilometers long and are equipped with on-board processing capability. We intend to expand our capacity with a technological upgrade of one of a source vessel, the Laurentian, which we have been operating since 2003 under a medium-term charter agreement, into a 3D seismic vessel.

Marine seismic acquisition requires advanced navigation equipment for positioning vessels, acoustic sources and streamers and specialized techniques for safe and rapid deployment and retrieval of acoustic sources and streamers. Each vessel operated by CGG Marine is fitted with a full complement of modern integrated equipment and software, including onboard computer equipment running our GeovecteurPlus software, used to process seismic data.

After returning to service in July 2002 following a technological upgrade, our seismic vessel the *CGG Mistral* sank on December 21, 2002 after an accidental fire broke out onboard off the coast of Trinidad. All

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personnel on board were safely evacuated. We are aware of no impact on the environment, and the ship and its streamers were fully insured.

On December 27, 2002, we sold our borehole seismic activity business to Baker Atlas, a division of Baker Hughes for U.S.$12 million cash and agreed to form a joint venture (called VS Fusion) with Baker Atlas for the processing and interpretation of borehole seismic data. The joint venture, in which we own a 49% stake, was launched on June 4, 2003.

*Multi-client Library.* Exclusive contract surveys generally provide for us to be paid a fixed fee per square kilometer of data acquired. When we acquire marine seismic data on an exclusive basis, the customer directs the scope and extent of the survey and retains ownership of the data obtained. In regions where there is extensive petroleum exploration, such as Brazil, the Gulf of Mexico, West Africa, the Mediterranean Sea and the North Sea, we also undertake multi-client (or non-exclusive) surveys whereby we retain ownership of the seismic data. This enables us to provide multiple companies access to the data by way of license. As a result, we have the potential to obtain multiple and higher revenues, while our customers who license the data have the opportunity to pay lower prices.

Our policy is generally to require a minimum share of the estimated cost of each multi-client survey to be covered by pre-commitments from clients prior to commencement. We treat these multi-client projects as investments. In determining whether to undertake multi-client surveys, we consider factors that include the availability of initial participants to underwrite a share of the costs to acquire such data, the location to be surveyed, the probability and timing of any future lease concessions and development activity in the area and the availability, quality and price of competing data. Once the surveys are completed, our customers may license the resulting data through after-sales .

Non-exclusive survey production accounted for approximately 15% of our fleet utilization in 2004 down from 58% in 2003, a result of sharply increased demand for exclusive surveys in 2004. Within the multi-client survey market, pre-commitment sales have decreased in 2004 while after-sales have benefited from increased customer demand. For each of 2004, 2003 and 2002, the value of our multi-client sales (both pre-commitments and after-sales) have exceeded our investments in our multi-client library for that year.

*Business Development Strategy.* Our strategy for the Offshore SBU is to:

- continue to deliver advanced services using techniques such as the use of fluid and, in the future, solid streamers with new electronics, as well as on-board processing and data transmission from vessel to onshore processing centers or client facilities, which reduces data delivery time to clients;

- pursue high-margin exclusive surveys, where demand permits; and

- continue our offshore multi-client surveys with carefully selected survey opportunities in order to build a sound data library in promising exploration areas. We believe that a strong position in this market segment enhances our global competitive position and may provide opportunities for future sales.

***Processing & Reservoir SBU***

We provide seismic data processing and reservoir services through our network of 26 data processing centers (including two dedicated 4D processing centers) and reservoir teams located around the world. Revenues from our Processing & Reservoir SBU accounted for 18% of our revenues in 2003 and for 15% in 2004.

*Description of Activity.* Our seismic data processing operations transform seismic data acquired in the field into 2D cross-sections or 3D images of the earth s subsurface using Geocluster, our proprietary seismic software. These images are then interpreted by geophysicists and geologists for use by oil and gas companies in evaluating prospective areas, selecting drilling sites and managing producing reservoirs. We process seismic data acquired by our own land and marine acquisition crews as well as seismic data acquired by non-affiliated third parties. Marine seismic data has been a significant source of the growth in demand for our data processing services and represents over two-thirds of the operating revenues generated in our processing centers. In addition, we reprocess previously processed data using new techniques to improve the quality of seismic images.

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Beyond conventional processing and reprocessing, we are also increasingly involved in reservoir-applied geophysics, an activity that encompasses large integrated reservoir studies from reprocessing to full reservoir simulation. It also includes advanced technology studies such as reservoir characterization, stratigraphic inversion and stochastic reservoir modeling. In 2001, we were awarded contracts to operate dedicated 4D processing centers for BP and Shell. These contracts have been regularly extended since then.

While our reservoir teams mainly operate from Houston (covering South American projects), London and Massy, France, we also provide seismic data processing (conventional and reservoir-oriented) services through a large network of international and regional data processing centers located around the world. We operate six international processing centers located in Massy, London, Oslo, Houston, Kuala Lumpur and Calgary, Canada.
Five of these centers are linked by high-speed fiber optic connections, and all of our centers have access to powerful high-performance computers. We complement our network of international centers with regional multi-client centers and dedicated centers that bring processing facilities within our clients premises. Fourteen of our data processing centers are dedicated centers that are located in our clients offices. We believe that these dedicated centers are responsive to the trend among oil and gas companies to outsource processing work while providing our clients with a high level of service. These centers enable our geoscientists to work directly with clients and tailor our services to meet individual clients needs.

The deployment of new technologies developed by our research and development teams and improved project management methods have increased our efficiency in time and depth migrations. The expertise in 4D that we acquired in the North Sea, in particular through our 4D dedicated centers in Aberdeen, has now been exported to the Gulf of Mexico, where this activity is growing.

Our geographical presence was strengthened in Southeast Asia with the opening of the Kuala Lumpur hub in 2004, equipped with new computer facilities, which is becoming one of our major regional hubs, and is enabling us to increase our reach throughout the Asia-Pacific region.

Each of the principal computers used at our centers is leased for a period of approximately two years, permitting us to upgrade to more advanced equipment at the time of renewal. In 2004, we had more than 20,000 PC clusters worldwide, an average real-time computer capacity representing 40 teraflops, compared to approximately 30 in 2003 and approximately 10 in 2002. Our delivery time has decreased in recent years, enabling delivery of data to clients within the same timeframe as work performed directly onboard marine vessels. We believe that, with the combined capacity of our centers located in Massy, France and London, we have one of the largest computing capacities of any privately-owned facility in Europe.

*IT and Data Management.* We compete in the data management market through sales of PetroVision, a software designed to manage and permit instant retrieval of large quantities of geological, geophysical, well and production data.

*Processing Software Development and Sales.* We sell Geocluster, our proprietary processing software, to the oil and gas industry as well as to scientific and university research centers. This software is currently available on most modern platforms in the market, including Linux platforms. Our other proprietary software products include:

Geovista, a set of software products used to produce accurate images of geological structures and showing depth;

Stratavista, advanced software used to determine specific rock properties from stratigraphic inversion of seismic data;

WaveVista, a depth migration service based on wave equations;

VectorVista, designed to provide greater understanding of seismic data acquired with multi-component techniques; and

ChronoVista, a set of software products used to produce accurate images of geological structures over time.

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*Business Development Strategy.* Our strategy for the Processing and Reservoir SBU is to:

use our expertise in fractured reservoirs to develop our processing activity in the Middle East, especially in Abu Dhabi;

develop and promote our high technology expertise, regional experience and flexibility with the ultimate goal of providing our clients with solutions that are innovative, adapted and geared towards reservoir solutions; and

consolidate our presence in our markets and further expand our activities through our network of processing centers, the quality of our personnel, and our innovative technology.

**Products**

We conduct our equipment development and production operations through Sercel Holding S.A. and its subsidiaries ( Sercel ). Sercel is the market leader in the development and production of seismic acquisition systems and specialized equipment in the land and offshore seismic markets. Sercel is operated as an independent division and makes most of its sales to purchasers other than CGG. Sercel currently operates eight main seismic equipment manufacturing facilities, located in Nantes, Saint Gaudens and Toulon in France, Houston, Sydney, Singapore, Alfreton in England and Calgary. In China, Sercel operates its activities through Sercel- JunFeng Geophysical Equipment Co Ltd, based in Hebei (China), in which Sercel acquired a 51% stake in the capital in 2004 and through Xian-Sercel a manufacturing joint venture with XPEIC (Xian Petroleum Equipment Industrial Corporation), in which Sercel holds a 40% interest. In addition, two sites in Massy and Brest (France) are dedicated to borehole tools and submarine acoustic instrumentation, respectively.

Revenues from our Products segment accounted for 32% and 43% of our consolidated operating revenues in 2003 and 2004, respectively.

*Description of Activity.* Sercel offers and supports worldwide a complete range of geophysical equipment for seismic data acquisition, including seismic recording equipment and seismic sources, and provides its clients with integrated solutions. Sercel s principal product line is seismic recording equipment, particularly the 408UL 24-bit recording systems.

In November 1999, Sercel launched its latest generation seismic data recording system, the 408UL. The 408UL offers greater operating flexibility than any other previous generation system due to:

clusters of ultra-light acquisition modules allowing total flexibility of configuration,

the option of mixing different communication media (cable, radio, micro-wave, laser, fiber-optic) to form a true network allowing the user to define data routing and hence avoid obstacles in the field; and

an architecture fully supported by a new generation of object-oriented software.

The 408UL is one of the industry s most advanced systems, and at the end of the year 2004, the installed base reached more than 560,000 channels. Sercel, seeking to provide users with systems well-adapted to various environments, developed the 408UL system on the basis of an upgradeable architecture. In 2002, Sercel expanded its family of 408 UL products with the ULS version for transition zone environment and in 2003 with the digital sensor unit (DSU) featuring three component digital sensors based on the MicroElectroMechanicalSystem (MEMS).

Sercel is also a market leader for vibroseismic vehicles. Sercel s latest vibrators, called NOMAD, offer high reliability and unique ergonomic features. Nomad is available with either normal tires or a tracked drive system. The track drive system allows Nomad vibrators to operate in terrain not accessible to vehicles with tires. In sand dunes or arctic conditions this can improve crew productivity. During the geophysical European congress held in Paris, France on June 2004, Sercel launched the NOMAD 90, which is capable of exerting a peak force 90,000 pounds.

In addition to recording systems, Sercel develops and produces a complete range of geophysical equipment for seismic data acquisition and other ancillary geophysical products as a result of the acquisition of Mark

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Products in September 2000, which specialized in the manufacture of geophones, cables and connectors. The acquisition of a 51% stake in Sercel-JunFeng Geophysical Equipment Co Ltd, based in Hebei, China, in January 2004 reinforced our manufacturing capabilities for geophone, cables and connectors, as well as our presence on the Chinese seismic market.

The SEAL, our marine seismic data recording system, capitalizes on the 408 architecture and on our many years of experience in streamer manufacturing. The SEAL is the currently sole system with integrated electronics. Sercel has recently developed, among other products, an innovative solid streamer cable for marine seismic data acquisition that is designed to reduce downtime due to adverse weather conditions and thereby increase data acquisition productivity. Sercel has also expanded its marine product range with ocean bottom cable.

Sercel significantly expanded its product range and increased its market share in the seismic equipment industry with the acquisitions of GeoScience Corporation in December 1999, Mark Product in 2000 and has continued its expansion in 2003 and 2004. In October 2003, Sercel acquired Sodera S.A., a leading provider of air gun sources used mainly in marine seismic data acquisition. In January 2004, Sercel acquired a division of Thales Underwater Systems Pty Ltd that develops and manufactures surface marine seismic acquisition systems, particularly solid streamers, and seabed marine seismic acquisition systems. Both Thales seismic equipment business and Sercel-JunFeng have been consolidated within the CGG group from January 2004. In addition, through the recent acquisitions of Createch and Orca, Sercel is continuing its expansion while strengthening its position in two areas with perceived growth potential: sea-floor seismic systems and borehole seismic tools. Also in 2004, Sercel acquired a 51% stake in the capital of Sercel-JunFeng Geophysical Equipment Co Ltd, a Chinese company based in Hebei, China, to reinforce Sercel s manufacturing capabilities for geophones, cables and connectors.

As a result of these acquisitions, Sercel is a market leader in the development and production of both marine and land geophysical equipment. It is a global provider for the seismic acquisition industry with a balanced industrial position in terms of both product range and geographical presence.

*Business Development Strategy.* Our strategy for the Products segment is to:

- use the business acquisitions made in 2003 and 2004 to expand Sercel s range of products or improve existing technology and strengthen its leading position in the geophysical equipment market; and

- maintain Sercel s leading position in the seismic data equipment market by capitalizing on growth opportunities resulting from the strength of its current product base, the application of new technologies in all of its products as well as from its diversified geographical presence.

**Backlog**

Backlog for our Services segment represents the revenues we expect to receive from commitments for contract services we have with our customers and, in connection with the acquisition of multi-client data, represents the amount of pre-sale commitments for such data. Backlog for our Products segment represents the total value of orders we have received but not yet fulfilled.

Backlog estimates are based on a number of assumptions and estimates, including assumptions as to exchange rates between the euro and the U.S. dollar and estimates of the percentage of completion contracts. Contracts for services are occasionally modified by mutual consent and in certain instances are cancelable by the customers on short notice without penalty. Consequently, our backlog as of any particular date may not be indicative of our actual operating results for any succeeding period.

We estimate that our total backlog as of March 1, 2005, stood at $475 million ($350 million for Services and $125 million for Products, excluding intra-group sales), up 41% from $337 million as of March 1, 2004 ($207 million for Services and $130 million for Products, excluding intra-group sales).

**Seasonality**

Our land and marine seismic acquisition activities are seasonal in nature. We generally experience decreased revenues in the first quarter of each year due to the effects of weather conditions in the Northern Hemisphere and

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to the fact that our principal clients are generally not prepared to fully commit their annual exploration budget to specific projects during that period.

We have historically experienced higher levels of activity in our equipment manufacturing operations in the fourth quarter as our clients seek to fully deploy annual budgeted capital.

**Intellectual Property**

We continually seek the most effective and appropriate protection for our products, processes and software and, as a general rule, will file for patent, copyright or other statutory protection whenever possible. Our patents, trademarks, service marks, copyrights, licenses and technical information collectively represent a material asset to our business. However, no single patent trademark, copyright, license or piece of technical information is of material importance to our business when taken as a whole. As of December 31, 2004, we held 144 patents in respect of different products and processes worldwide. The duration of these patents varies from four to 20 years, depending upon the date filed and the duration of protection granted by each country.

**Competition**

*General.* Most contracts are obtained through a competitive bidding process, which is standard for the industry in which we operate. Important factors in awarding contracts include service quality, technological capacity, performance, reputation, experience of personnel, customer relations and long-standing relationships, as well as price. While no single company competes with us in all of our segments, we are subject to intense competition with respect to each of our segments. We compete with large, international companies as well as smaller, local companies. In addition, we compete with major service providers and government-sponsored enterprises and affiliates. Some of our competitors operate more data acquisition crews than we do and have substantially greater financial and other resources.

*Land.* The land seismic market is extremely fragmented and characterized by intense price competition. The entrance of a significant number of Chinese competitors seeking to expand their international market share beginning in 2000 has driven down prices in this sector and decreased the market share of established participants. In addition, certain very active services markets, such as China and Russia, are not practically accessible to international services providers like us. The most significant service providers in land are Western Geco and BGP. We believe that price is the principal basis of competition in this market, although relationships with local service providers are important, as is experience in unusual terrain.

*Offshore.* The offshore sector has four leading participants: Western Geco, PGS, CGG and Veritas. From 1999 to mid-2004, the offshore market experienced excess supply, which put downward pressure on prices. Because of the high fixed costs in this sector, excess supply has not been reduced by operators but rather channeled into multi-client libraries. With supply flat in 2003 and 2004, however, and demand gradually increasing, prices have recovered significantly in this market, though they remain below pre-1999 levels.

*Processing.* The processing sector is led by Western Geco, CGG and Veritas. This market is characterized by greater client loyalty than the acquisition sector, as evidenced by the presence of processing centers on client premises. Processing capacity has multiplied in recent years as a result of improvements in computing technology. This increase in computing power has allowed improved processing and the use of more complex and accurate algorithms.

*Products.* Our principal competitor for the manufacture of seismic survey equipment is Input/ Output Inc. The market for seismic survey equipment is highly competitive and is characterized by continual and rapid technological change. We believe that technology is the principal basis for competition in this market, as oil and gas companies have increasingly demanded new equipment for activities such as reservoir management and data acquisition in difficult terrain. Oil and gas companies have also become more demanding with regard to the quality of data acquired. Other competitive factors include price and customer support services.

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**Organizational Structure**

We are the parent company of the CGG group. Our principal subsidiaries are as follows:

| Subsidiary | Jurisdiction of Organization | Head office | % of interest |
|---|---|---|---|
| Sercel SA | France | Carquefou, France | 100.0 |
| CGG Marine SAS | France | Massy, France | 100.0 |
| CGG Americas, Inc. | United States | Houston, Texas, United States | 100.0 |
| CGG Marine Resources Norge A/S | Norway | Hovik, Norway | 100.0 |
| Compañía Mexicana de Geofisica | Mexico | Mexico City, Mexico | 100.0 |
| CGG do Brazil Participaçoes Ltda | Brazil | Rio de Janeiro, Brazil | 100.0 |
| Sercel Inc. | United States | Tulsa, Oklahoma, United States | 100.0 |

**Property, Plant and Equipment**

The following table sets forth certain information as of December 31, 2004 relating to our principal properties.

| Location | Type of facilities | Size | Owned/ Leased | Lease Expiration Date |
|---|---|---|---|---|
| Paris, France | Executive offices for the CGG group | 725 $m^2$ | Leased | 2009 |
| Massy, France | Principal administrative offices for the CGG group | 9,174 $m^2$ | Leased | 2005 |
| Massy, France | Data processing center | 7,371 $m^2$ | Owned | |
| Massy, France | Activities include research and development and manufacture of seismic borehole tools | 1,108 $m^2$ | Leased | 2010 |
| London, England | Data processing center | 2,320 $m^2$ | Leased | 2011 |
| Surrey, England | Administrative offices | 2,095 $m^2$ | Leased | 2010 |
| Houston, U.S.A. | Offices of CGG Americas, Inc. | 6,905 $m^2$ | Leased | 2007 |
| Houston, U.S.A. | Offices and manufacturing premises of Sercel | 24,154 $m^2$ | Leased/ Owned | 2007 |
| Brest, France | Activities include research and development and manufacture of underwater acoustic devices | 322 $m^2$ | Leased | 2008 |
| Carquefou, France | Factory of Sercel. Activities include research and development relating to, and manufacture of, seismic data recording equipment | 23,318 $m^2$ | Owned | |
| Saint Gaudens, France | Factory of Sercel. Activities include research and development relating to, and manufacture of, geophysical cables, mechanical equipment and borehole seismic tools. | 16,000 $m^2$ | Owned | |

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| Location | Type of facilities | Size | Owned/ Leased | Lease Expiration Date |
|---|---|---|---|---|
| Toulon, France | Factory of Sercel. Activities include research and development relating to, and marketing of, air guns. | 6,695 $m^2$ | Owned | |
| Sydney, Australia | Activities include research and development relating to, and manufacture and marketing of, marine streamers. | 7,096 $m^2$ | Leased | 2006 |
| Xu Shui, China | Activities include research and development relating to, and manufacture of. geophones | 59,247$m^2$ | Leased | 2053 |
| Calgary, Canada | Manufacture of geophysical cables. | 8,357 $m^2$ | Owned | |
| Alfreton, England | Manufacture of geophysical cables. | 5,665 $m^2$ | Owned | |
| Singapore | Manufacture of geophysical cables. | 5,595 $m^2$ | Owned | |

We also lease other offices worldwide to support our operations. We believe that our existing facilities are adequate to meet our current requirements.

The following table provides certain information concerning the 3D seismic vessels operated by the Offshore SBU during 2004:

| Vessel Name | Year Built | Year Added to Fleet | Year Reconfigured | Charter Expires | Number of Streamers | Vessel Length (in meters) |
|---|---|---|---|---|---|---|
| CGG Föhn | 1985 | 1985 | 1997 | 2006 | 8(1) | 84.5 |
| CGG Harmattan | 1993 | 1993 | 1996 | 2006 | 8(1) | 96.5 |
| CGG Alizé | 1999 | 1999 | | 2007 | 10 | 100.0 |
| Laurentian(2) | 1983 | 2003 | | 2006 | N/A | 84.4 |
| CGG Amadeus | 1999 | 2001 | | Owned | 8 | 87.0 |
| CGG Symphony | 1999 | 2001 | | Owned | 10 | 120.7 |

(1) In high-resolution mode.

(2) Source vessel (to be upgraded to an acquisition vessel).

**Environmental Matters and Safety**

Our operations are subject to a variety of laws and regulations relating to environmental protection. We invest financial and managerial resources to comply with such laws and regulations. Although such expenditures historically

have not been material to us, and we believe that we are in compliance in all material respects with applicable environmental laws and regulations, the fact that such laws and regulations are changed frequently prevents us from predicting the cost of impact of such laws and regulations on our future operations. We are not involved in any legal proceedings concerning environmental matters and are not aware of any claims or potential liability concerning environmental matters that could have a material adverse impact on our business or consolidated financial condition.

Efforts to improve safety and environmental performance over the last few years continued as some procedures were strengthened and others implemented to increase awareness among personnel and subcontractors, including obligatory regular meetings in the field and onboard. A comprehensive Health, Safety and Environment management system, placing particular emphasis on risk management, has been established to cover all activities and is being continuously adapted for each segment.

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**Legal Proceedings**

From time to time we are involved in legal proceedings arising in the normal course of our business. We do not expect that any of these proceedings, either individually or in the aggregate, will result in a material adverse effect on our consolidated financial condition or results of operations. See also Directors, Senior Management and Employees Board Practices Audit Committee.

**Item 5: OPERATING AND FINANCIAL REVIEW AND PROSPECTS**

**Operating Results**

The following operating and financial review and prospects should be read in connection with our consolidated financial statements and the notes thereto included elsewhere in this annual report, which have been prepared in accordance with French GAAP.

Beginning with our financial statements for fiscal year 2001, French GAAP as they relate to us differed in certain significant respects from U.S. GAAP, and we adopted French GAAP for reporting of our primary financial statements for fiscal year 2001 and future years. The differences between French GAAP and U.S. GAAP as they relate to us, and a reconciliation of net income and shareholders equity to U.S. GAAP are described in Note 28 to our consolidated financial statements.

We adopted IFRS as our primary accounting principles from January 1, 2005, and our first consolidated financial statements under IFRS will be those as of and for the three months ended March 31, 2005. We will present restated financial statements under IFRS as of and for the three months ended March 31, 2004. See Transition to IFRS Accounting below.

**Factors Affecting Results of Operations**

***General***

We divide our businesses into two segments, geophysical services and geophysical products. Operationally, our Services segment is conducted through both CGG and our subsidiaries organized into three strategic business units, or SBUs:

- the Land SBU for land and shallow water seismic acquisition activities;
- the Offshore SBU for marine seismic acquisition and multi-client library sales; and
- the Processing & Reservoir SBU for seismic data processing, data management and reservoir studies.

Our Products segment is made up of our equipment development and manufacturing activities, which we conduct through Sercel and its subsidiaries.

Overall demand for geophysical services is dependent upon spending by oil and gas companies for exploration, production development and field management activities. We believe the level of spending depends on the perception of oil and gas companies of the relationship between proven future reserves and their expectations regarding future energy consumption.

After many years of strong growth, the geophysical market in 1999, following a sharp drop in the price of oil, experienced a deep recession, which we believe resulted in a reduction of more than 40% in industry revenues compared to 1998. The geophysical market (particularly the offshore segment) has gradually improved since 1999 in terms of both volumes of sales and prices (with an acceleration since mid-2004). However, despite this improvement and significantly increased oil and gas prices, the seismic services market has not yet returned to pre-1999 activity or price levels.

We believe that two factors have contributed to the unusual situation in recent years of increasing oil and gas prices but a weak seismic services market. First, global geopolitical uncertainty, particularly following the events of September 11, 2001 and the conflict in Iraq in 2003, has harmed the confidence and visibility that are essential to our clients long term decision-making processes. As a consequence, they have delayed or cancelled many projects. Second, geophysical service providers have generally not reacted efficiently to the difficult industry

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environment and have, in particular, failed to adjust their capacity in response to reduced demand. As a result, excess supply in the seismic services market has applied downward pricing pressure through the first half of 2004.

We believe that during 2004, oil and gas companies (including both the major multinational oil companies and the national oil companies) and the large oil and gas consuming nations became aware of a growing and potentially lasting imbalance between the supply and demand for hydrocarbons. A rapid rise in world consumption requirements, particularly in China and India, resulted in demand growing more rapidly than anticipated. At the same time, the excess production capacity of OPEC appears to have reached historical lows, focusing attention on existing production capacities and available reserves. These market pressures from the both the supply and demand sides produced a sharp rise in oil and gas prices.

This recognition of a possible structural imbalance between hydrocarbon supply and demand may lead the oil and gas industry to increase capital expenditures in exploration and production, which we expect would be beneficial for the seismic services market. We believe that seismic services are an important element of efforts to find new reserves and to extract more oil from existing reservoirs.

While this new market situation may lead to improve sales volumes and prices for geophysical products and services, our belief that the seismic industry should consolidate remains unchanged. We believe that the goal of any such consolidation would be to exploit synergies and to promote the emergence of seismic operators possessing larger financial and technological bases.

***Land SBU restructuring plan***

Our results of operations in recent years have been affected by increasingly intense competition in the land acquisition markets, particularly as Chinese seismic services entrants have expanded their international market share. This situation led us to reassess our strategy and geographical presence in certain land acquisition markets.

In response, we launched a restructuring program in September 2003 to substantially lower our fixed costs, which included a workforce reduction affecting 250 employees and the disposal of seismic acquisition inventories and assets for a total cost of 19 million.

In 2004, we spent 11.0 million on the restructuring plan out of a 12.1 million provision in our books at December 31, 2003. Both in terms of cost savings and operational reorganization, the restructuring plan is progressing in conformity with its initial objectives.

***Acquisitions and Disposals***

On May 21, 2002, Talamantes B.V., a Dutch company, and Paradigm Geophysical Ltd ( PGEO ), a company in which we owned ordinary shares, entered into a merger agreement providing for the merger of PGEO into Talamentes or one of its subsidiaries. Pursuant to the merger agreement, each of PGEO s outstanding ordinary shares was converted into the right to receive U.S.$5.15 in cash when the merger was completed, which took place on August 13, 2002. We received a total of U.S.$7.7 million in merger consideration. A 2 million loss was recorded under the item Other Revenues and Expenses .

On December 27, 2002, we agreed to sell our borehole seismic data acquisition business to Baker Atlas, a division of Baker Hughes Incorporated, for a purchase price of U.S.$12 million ( 11.4 million) and agreed to form a joint venture with Baker Atlas for the processing and interpretation of borehole seismic data. Baker Hughes paid 90% of the consideration for the transaction on December 27, 2002, and simultaneously acquired certain assets and intellectual property of our borehole seismic data acquisition business. The remaining 10% was transferred on February 2003, at which time the employees and contracts of the ongoing business were also transferred to Baker Hughes. On June 4, 2003, we and Baker Atlas launched our joint venture, VS Fusion, in which we hold a 49% equity interest.

On October 15, 2003, Sercel acquired for cash Sodera S.A, a French company specializing in the production of air guns for marine seismic acquisition activities, for a purchase price of U.S.$4.7 million ( 4.2 million).

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On January 2, 2004, Sercel acquired the seismic equipment business of Thales Underwater Systems Pty Ltd (TUS). This business includes the development and manufacturing of surface marine seismic acquisition systems, particularly solid streamers, and seabed marine seismic acquisition systems. The purchase price was 21.7 million, subject to a price adjustment that may entail an additional payment in 2005 and/ or 2006 based on revenues.

On January 8, 2004, Sercel acquired a 51% majority equity stake in Hebei JunFeng Geophysical Co. Ltd., a provider of geophones and seismic cables for the Chinese seismic market, for a purchase price of 9.8 million. Hebei JunFeng Geophysical Co. Ltd., located in the Hebei province, was originally created by BGP, the largest Chinese geophysical services contractor. BGP will remain a shareholder of the company along with the management, the employees, and XPEIC, a Chinese geophysical equipment company.

On February 19, 2004, Sercel acquired Orca Instrumentation, a French company that develops and markets marine acquisition systems and underwater data transmission systems, for a purchase price of 1.3 million.

On March 3, 2004, Sercel acquired of Createch Industrie, a French company specializing in borehole measurement tools, borehole seismic tools and permanent borehole sensors, for a purchase price of 1.9 million.

On September 23, 2004, Kantwell Overseas Shipping Co, in which we owned a 50% interest, was liquidated. Kantwell had owned the seismic vessel the *CGG Mistral*, which sank in December 2002. We recorded a foreign exchange loss of 3.8 million under the item Exchange gains (losses) net in connection with this liquidation (realization of currency translation adjustment).

In September 2002, we took a 7.5% equity stake in the share capital of one of our competitors, the Norwegian company Petroleum Geo Services ASA ( PGS ), for a total price of U.S.$7.0 million. After a U.S. bankruptcy court approved a restructuring plan between PGS and its creditors on October 21, 2003 and the plan was implemented, we held 867,753 shares of PGS (4.3% of the share capital) for a total investment of approximately U.S.$18 million. In December 2003, we sold 400,000 shares of PGS on the market, reducing our total holdings to 467,753 shares (2.3% of PGS s share capital). The sales price was U.S.$13 million and produced a gain of 2.5 million before tax.

On September 2, 2004, we made an offer to acquire the PGS seismic business for a total consideration of U.S.$900 million, comprising U.S.$800 million in cash and U.S.$100 million in our shares. Given the negotiating gap existing between the parties, in particular concerning the valuation of the transaction and further exacerbated by the perception of a recently improving seismic market, we withdrew our offer on October 5, 2004. In October and November 2004, we sold our remaining 467,753 shares of PGS for 17.2 million; the gain to us was 7.9 million before and after tax and was recorded as Other Revenues and Expenses .

On February 14, 2005, we ended our cooperation agreements with PT Alico. On that date, PT Alico, which was fully consolidated in our accounts until 2004 as a consequence of our contractual relationship with them, was excluded from our scope of consolidation. Under our agreements with PT Alico, we indemnified them against certain specific risks. This liability is limited and has been accrued in the financial statements as of December 31, 2004. The liability will expire on June 30, 2006, at which date we will have no further commitment to PT Alico or its shareholders.

***Foreign Exchange Fluctuations***

As a company that derives a substantial amount of its revenue from sales internationally, our results of operations are affected by fluctuations in currency exchange rates. In each of the years ended December 31, 2004, 2003 and 2002, over 90% of our operating revenues and approximately two-thirds of our operating expenses were denominated in currencies other than the euro. These included the U.S. dollar and, to a significantly lesser extent, other non-euro Western European currencies, principally the British pound and the Norwegian kroner. In addition, a significant portion of our revenues that were invoiced in euros related to contracts that were effectively priced in U.S. dollars, as the U.S. dollar often serves as the reference currency when bidding for contracts to provide geophysical services.

Fluctuations in the exchange rate of the euro against such other currencies, particularly the U.S. dollar, have had in the past and can be expected in future periods to have a significant effect upon our results of operations.

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Since we participate in competitive bids for data acquisition contracts that are denominated in U.S. dollars, an appreciation of the U.S. dollar against the euro improves our competitive position against that of other companies whose costs and expenses are denominated in U.S. dollars. For financial reporting purposes, such appreciation positively affects our reported results of operations since U.S. dollar-denominated earnings that are converted to euros are stated at an increased value. A depreciation of the U.S. dollar against the euro, such as has occurred since the second half of 2003, has the opposite effect.

In order to present trends in our business that may be obscured by currency fluctuations, we have translated certain euro amounts in this Operating and Financial Review and Prospects into U.S. dollars.

***Critical Accounting Policies***

Our significant accounting policies, which we have applied consistently in all material respects for all periods presented, are more fully described in Note 1 to our consolidated annual financial statements contained in this annual report. However, certain of our accounting policies are particularly important to the presentation of our financial position and results of operations. As we must exercise significant judgment when we apply these policies, their application is subject to an inherent degree of uncertainty. We believe the following critical accounting policies require our more significant judgments and affect estimates used in the preparation of our consolidated financial statements.

*Multi-client survey accounting*

Multi-client surveys consist of seismic surveys to be licensed to customers on a non-exclusive basis. All costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized into the multi-client library. The value of our multi-client library is stated on our balance sheet at the aggregate of those costs less accumulated amortization or at fair value, if lower. We review the library for potential impairment of our independent surveys on an ongoing basis.

*Revenue recognition:*

Revenues related to multi-client surveys result from pre-commitments and licenses after completion of the surveys ( after-sales ).

*Pre-commitments* Generally, we obtain pre-commitments from a limited number of customers before a seismic project is completed. These pre-commitments cover part or all of the survey area blocks. In return for the pre-commitment, the customer typically gains the ability to direct or influence the project specifications, advance access to data as it is being acquired, and favorable pricing.

We recognize pre-commitments as revenue in each period based on the ratio of project cost incurred during that period to total estimated project cost. We believe this ratio to be generally consistent with the physical progress of the project.

*After-sales* Generally, we grant a license entitling non-exclusive access to a complete and ready for use, specifically defined portion of our multi-client data library in exchange for a fixed and determinable payment. We recognize after sales revenue upon the client executing a valid license agreement and having been granted access to the data. Within thirty days of execution and access, the client may exercise our warranty that all the data conforms to technical specifications.

*After-sales volume agreements* We enter into a customer arrangement in which we agree to grant licenses to the customer for access to a specified number of blocks of the multi-client library. These arrangements typically enable the customer to select and access the specified blocks for a limited period of time. We recognize revenue when the blocks are selected and the client has been granted access to the data.

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*Amortization:*

We amortize the multi-client surveys over the period during which the data is expected to be marketed using a pro-rata method based on recognized revenues as a percentage of total estimated sales (such estimation relies on the historical sales track record).

In this respect, we use three different sets of parameters depending on the area or type of surveys considered:

Gulf of Mexico surveys are amortized on the basis of 66.6% of revenues. Starting at the time of data delivery, a minimum straight-line depreciation scheme is applied on a three years period, should total accumulated depreciation from the 66.6% of revenues amortization method be below this minimum level;

*Rest of the world surveys:* same as above, except depreciation is 83.3% of revenues and straight-line depreciation is over a five year period from data delivery; and

Long term strategic 2D surveys are amortized on the basis of revenues according to the above area split and straight-line depreciation over a seven years period from data delivery.

*Exclusive survey accounting (Proprietary/ Contract services)*

In exclusive surveys, we perform seismic services for a specific customer. We recognize proprietary/ contract revenue as the services are rendered. We recognize exclusive survey revenue in each period based on the ratio of project cost incurred during that period to total estimated project cost. We believe this ratio to be generally consistent with the physical progress of the project.

*Other geophysical services*

Revenue from our other geophysical services is recognized as the services are performed.

*Goodwill amortization and impairment of long-lived assets*

We amortize goodwill on a straight-line basis over future periods of benefit, as estimated by management, which may range from five to twenty years. We select the period of benefit based on the strategic significance of the asset acquired.

We assess the impairment of identifiable intangibles, long-lived assets and goodwill whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important that could trigger an impairment review include the following:

significant underperformance relative to expected operating results based upon historical and/or projected data;

significant changes in the manner of our use of the acquired assets or the strategy for our overall business; and

significant negative industry or economic trends.

When we determine that the carrying value of intangibles, long-lived assets and goodwill may not be recoverable based upon the existence of one or more of the above indicators of impairment, we compare the carrying value of each group of autonomous assets (independent operating units or subsidiaries) with the undiscounted cash flows that they are expected to generate based upon our expectations of future economic and operating conditions. Should this comparison indicate that an asset is impaired, the write-down recognized is equivalent to the difference between carrying value and either value or the sum of discounted future cash flows.

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**Year ended December 31, 2004 compared to year ended December 31, 2003**

***Operating Revenues***

Our consolidated operating revenues for 2004 increased 13% to 692.7 million from 612.4 million for 2003. Because approximately 80% of our operating revenues for 2004 and 81% for 2003 were denominated in U.S. dollars, the decrease in the value of the U.S. dollar had a negative impact on our operating revenues as expressed in euros in our financial statements. Expressed in U.S. dollars, our consolidated operating revenues for 2004 increased 25% to U.S.$861.7 million from U.S.$689.2 million for 2003. This increase was primarily attributable to an increase in operating revenues in our Products segment, as well as to recent business acquisitions and the performance of our Offshore SBU.

*Services*

Operating revenues for our Services segment (excluding internal sales) for 2004 decreased 5% to 393.3 million from 413.2 million for 2003. Expressed in U.S. dollars, however, operating revenues for 2004 increased 6% to U.S.$489.4 million from U.S.$463.6 million for 2003. This increase is due to our Offshore SBU and, to a lesser extent, to our Processing & Reservoir SBU.

*Land SBU.* Operating revenues for our Land SBU for 2004 decreased 47% to 77.3 million compared to 144.5 million for 2003. In U.S. dollars, operating revenues for 2004 decreased 41% to U.S.$95.8 million from U.S.$161.5 million for 2003. Beyond the downsizing of our Land SBU in 2003, this decrease was the consequence of intense competition, which affected both prices and volumes of sales, resulting in a very weak mid-year backlog. These factors affected operating revenues for the second half of 2004, although we experienced a recovery in backlog at the end of the year as our clients increasingly engaged our services to assist them in finding reserves and extract more oil from existing reservoirs. On average, 12 crews were in operation in 2004 compared to 17 in 2003.

*Offshore SBU.* Operating revenues for our Offshore SBU for 2004 increased 34% to 211.0 million from 157.1 million for 2003. In U.S. dollars, operating revenues for 2004 increased 49% to U.S.$263.1 million from U.S.$176.5 million for 2003. This increase is due to increased volumes of sales, principally exclusive surveys, as well as, toward the end of 2004, increased prices.

Revenues from exclusive surveys for 2004 increased 111% to 103.1 million from 48.8 million for 2003. Exclusive surveys accounted for 49% of our Offshore SBU sales for 2004 compared to 31% for 2003 as we allocated more seismic vessels to exclusive contracts in response to demand. Multi-client data sales in the aggregate remained largely stable at 107.9 million for 2004 and 108.3 million for 2003. Reflecting changes in market demand, pre-commitment sales decreased 45% for 2004 to 39.0 million from 71.6 million for 2003. However, within an overall stable revenue environment for multi-client surveys, multi-client data after-sales for 2004 increased 88% to 68.9 million from 36.7 million for 2003, mainly in the Gulf of Mexico and in Brazil. The net book value of our marine multi-client data library was 124.6 million as of December 31, 2004 compared to 145.0 million as of December 31, 2003.

*Processing & Reservoir SBU.* Operating revenues for our Processing & Reservoir SBU for 2004 decreased 6% to 105.0 million from 111.6 million for 2003. In U.S. dollars, operating revenues for 2004 increased 4% to U.S.$130.4 million from U.S.$125.6 million for 2003 in spite of price decreases, due in part to the introduction of the depth imaging services market in the Gulf of Mexico.

*Products*

Operating revenues for our Products segment (including intra-group sales) for 2004 increased 45% to 313.6 million from 216.9 million for 2003. Expressed in U.S. dollars, such revenues for 2004 increased 59% to U.S.$389.9 million from U.S.$245.4 million for 2003. Approximately one-third of this increase is attributable to the business acquisitions in 2004 described under the heading Acquisitions and Disposals above. Excluding intra-group sales, revenues for 2004 increased 50% to 299.4 million compared to 199.2 million for 2003. Sales of land products expressed in dollars experienced solid growth, reflecting the continuing success of our 408UL system in an active land products market, which includes certain geographical markets, such as China and

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Russia, not practically accessible to international service providers such as us. Sales of marine products more than doubled in dollar terms from a difficult 2003 as a combined result of improved acceptance of the Seal system (which features flexible architecture) and our business acquisitions in 2004.

***Operating Expenses***

Cost of operations, including depreciation and amortization, for 2004 increased 13% to 556.0 million from 491.0 million for 2003, in line with our operating revenues. As a percentage of operating revenues, cost of operations was 80% for both 2004 and 2003. Gross profit for 2004 increased 13% to 136.7 million from 121.4 million for 2003.

Depreciation and amortization for 2004 decreased 2.1% to 71.4 million from 72.9 million in 2003. Depreciation of our multi-client library accounted for an additional 66.5 million of depreciation for 2004 and 80.0 million for 2003.

Selling, general and administrative expenses for 2004 increased 1% to 79.5 million from 78.8 million for 2003. As a percentage of operating revenues, selling, general and administrative costs for 2004 decreased to 11% compared to 13% for 2003.

Research and development expenditures for 2004, net of government grants, increased 25% to 33.5 million from 26.9 million for 2003 due to development efforts in the Products segment and expenses of our business acquisitions in 2004.

Other income net of expenses for 2004 increased to 12.0 million from negative 5.1 million for 2003. Other income net of expenses for 2004 consisted essentially of:

- Gain of 7.9 million on the disposal of our PGS shares (which we did not allocate specifically to either of our business segments),
- Gain of 2.2 million on the disposal of a building (allocated to the Services segment),
- Gain of 1.8 million from indemnities paid by our insurance companies in respect of the seismic vessel the *CGG Mistral* (allocated to the Services segment),
- Gain of 1.4 million resulting from the sale of CGG shares (which we did not allocate specifically to either of our business segments),
- Expenses of 4.3 million from the early redemption of $75 million of our 10.8% Senior Notes due 2007 (which we did not allocate specifically to either of our business segments).

***Operating Income (Loss)***

Our operating income for 2004 increased to 35.7 million from 10.6 million for 2003. 17.1 million of the increase was attributable to variation in other income net of expenses as identified immediately above. 8.0 million of the increase was due to improved operational results in 2004, partly offset by a 10% negative exchange rate impact due to the increase in value of the euro against the U.S. dollar in 2004.

Operating loss from our Services segment for 2004 decreased to 18.8 million from 29.8 million for 2003. The increase of Offshore services prices, the high utilization rate of our vessels and the high level of multi-clients data sales explain the decreased loss in spite of a negative exchange rate impact of the increase in value of the euro against the U.S. dollar in 2004.

Operating income from our Products segment for 2004 increased to 57.3 million from 42.9 million in 2003. The increase in operating income was primarily due to a strong increase in operating revenues (including from newly acquired businesses) despite the negative exchange rate impact of the increase in value of the euro against the U.S. dollar in 2004 and a higher proportion of Offshore equipment sales (which generally bear lower margins).

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***Financial Income and Expenses, Net***

Net financial expenses for 2004 increased 7% to 22.4 million from 21.0 million for 2003. Expressed in U.S. dollars, net financial expenses were stable before taking into account a provision of 4.1 million in 2003 for unrealized losses on our PGS shares.

Net debt was 139.2 million as of December 31, 2004 and December 31, 2003. This stability is principally due to the combined effect of the net cash provided by operating activities for 2004 of 91.9 million compared to 180.5 million in 2003, the net cash used for investing activities for 2004 of 100.1 million compared to 163.8 million in 2003 and an exchange rate effect that lowered the euro value of our U.S. dollar denominated debt. The variations in net cash provided by operating activities and used in investing activities are explained under the heading Liquidity and Capital Resources .

Gross interest expenses for 2004 decreased 7.7% to 24.6 million from 28.2 million for 2003. Financial income, resulting largely from interest on overnight deposits, was 3.0 million for both 2004 and 2003.

Foreign exchange gain for 2004 decreased 4.3% to 4.4 million from 4.6 million for 2003. Foreign exchange gain for 2004 included an exchange loss of 3.8 million from the liquidation of Kantwell Overseas Shipping Co. on September 23, 2004, offset by the favorable impact of our hedging policy. In connection with hedging our currency exposure risks, we hedge the U.S. dollar by forward sales, which can have either a favorable or adverse impact on financial result depending on the actual variation in the exchange rate for the euro and the U.S. dollar. See Item 11: Quantitative and Qualitative Disclosures on Market Risk .

***Equity in Income of Affiliates***

Income from investments accounted for under the equity method for 2004 increased to 10.3 million from 6.5 million for 2003, which corresponds largely to our share in the income of Argas, our Saudi Arabian joint venture, which was 10.4 million for 2004 and 7.0 million for 2003.

***Income Tax Expenses***

Income tax expenses for 2004 increased to 9.7 million from 3.1 million in 2003 and included a deferred tax credit of 10.4 million, which corresponded to the value of Sercel Inc. s net operating loss carryforwards (U.S.$24.7 million) and temporary differences assets (U.S.$10.1 million) at the current United States corporate tax rate of 35%. This increase is primarily due to the increase of taxable income in the United States that, beginning in 2004, can no longer be offset by net operating loss carryforwards in 2004 and to the high level of U.S. multi-client survey sales.

Because we earn a majority of our taxable income outside of France, foreign taxation significantly affects our overall income tax expense. We are not subject to a worldwide taxation system, and the income tax paid in foreign countries, mainly based on revenues, does not generate comparable tax credits in France.

***Net Income (Loss)***

Net income for 2004 was 11.1 million compared to a net loss of 10.4 million for 2003. Net income for 2004 reflects minority interest of 1.0 million, primarily from our 51% interest in Sercel JunFeng.

**Year ended December 31, 2003 compared to year ended December 31, 2002**

***Operating Revenues***

Our consolidated operating revenues for 2003 decreased 13% to 612.4 million from 700.7 million for 2002. Because 81% of our operating revenues in 2003 and 87% in 2002 were denominated in U.S. dollars, the decrease in the value of the U.S. dollar had a negative impact on our operating revenues as expressed in euros in our financial statements. Expressed in U.S. dollars, our consolidated operating revenues increased 4% to U.S.$689.2 million from U.S.$665.1 million in 2002. This increase was primarily attributable to increases in operating revenues in our Products segment and, to a lesser extent, in our Processing & Reservoir SBU.

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*Services*

Operating revenues for our Services segment (excluding internal sales) for 2003 decreased 19% to 413.2 million from 507.6 million for 2002. Expressed in U.S. dollars, operating revenues decreased 4% to U.S.$463.6 million for 2003 from U.S.$482.9 million for 2002 due primarily to decreased revenues from our Land and Offshore SBUs.

*Land SBU.* Operating revenues for our Land SBU for 2003 decreased 22% to 144.5 million compared to 184.6 million for 2002. In U.S. dollars, operating revenues decreased 8% to U.S.$161.5 million for 2003 from U.S.$176.1 million for 2002. This decrease resulted from increased competition, which caused mid-year backlog to be weak and affected operating revenues for the third quarter of 2003. On average, 17 crews were in operation in 2003 compared to 15 in 2002.

*Offshore SBU.* Operating revenues for our Offshore SBU for 2003 decreased 21.4% to 157.1 million from 199.8 million for 2002. In U.S. dollars, operating revenues decreased 7% to U.S.$176.5 million for 2002 from U.S.$190.1 million for 2002. This decrease was attributable to our lower capacity following the loss of the *CGG Mistral*, one of our seismic vessels, in December 2002, the sale of our borehole seismic activity in December 2002 and weak demand in multi-client surveys.

Exclusive sales for 2003 decreased 26% to 48.8 million from 66.0 million in 2002. Exclusive surveys accounted for 31% of our Offshore SBU sales in 2003 compared to 33% in 2002. In the aggregate, multi-client data sales (both pre-commitments and after-sales) decreased 19% to 108.3 million for 2003 from 133.8 million for 2002, primarily due to lower after-sales in the Gulf of Mexico. Multi-client pre-commitments for 2003 decreased 18% to 71.6 million from 87.3 million in 2002. Multi-client data after-sales for 2003 also decreased 21% to 36.7 million from 46.5 million in 2002. The net book value of our marine multi-client data library was 145.0 million as of December 31, 2003 compared to 125.8 million as of December 31, 2002.

*Processing & Reservoir SBU.* Operating revenues for our Processing & Reservoir SBU for 2003 decreased 9% to 111.6 million compared to 123.2 million for 2002. In U.S. dollars, operating revenues increased 8% to U.S.$126.0 million for 2003 from U.S.$116.7 million for 2002 due to our increased market share in Southeast Asia, the wider use of high end imaging technology and new dedicated centers working exclusively with certain clients.

*Products*

Operating revenues for our Products segment (including intra-group sales) for 2003 decreased 17% to 216.9 million from 262.4 million for 2002. Expressed in U.S. dollars, operating revenues decreased 1% to U.S.$245.4 million for 2003 from U.S.$247.4 million for 2002. Excluding intra-group sales, operating revenues increased 3% to 199.2 million for 2003 compared to 193.1 million for 2002. Sales of land products expressed in dollars increased 29% for 2003 compared 2002 due to the wide acceptance of our 408 UL recording system in a recovering land products market, which includes certain geophysical markets, such as China and Russia, not practically accessible to international services providers. Due to the scarcity of new vessels or significant vessel upgrades, demand for marine products remained low in 2003 compared to 2002 when several Seal systems had been sold to various customers, including to our services segment.

***Operating Expenses***

Cost of operations, including depreciation and amortization, decreased 8% to 491.0 million for 2003 from 531.4 million for 2002. As a percentage of operating revenues, cost of operations increased to 80% for 2003 compared to 76% for 2002. Because our revenues are more dollar-denominated than our costs of operations, a decrease in the value of the U.S. dollar against the euro decreases our revenues to a larger extent than our expenses. Gross profit decreased to 121.4 million for 2003 compared to 169.3 million for 2002 primarily as a result of our land restructuring program.

Depreciation and amortization for 2003 decreased 46% to 72.9 million from 134.9 million in 2002. Depreciation of our multi-client library accounted for an additional 80.0 million of depreciation for 2003 and 87.0 million for 2003.

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Selling, general and administrative expenses decreased 9% to 78.8 million for 2003 from 86.7 million for 2002. As a percentage of operating revenues, selling, general and administrative costs increased to 13% in 2003 compared to 12% in 2002 due to the fact that more of our general and administrative costs than our revenues are euro-denominated.

Research and development expenditures, net of government grants, were stable at 27 million for 2003 and 2002.

Other expenses amounted to 5.1 million for 2003 compared to other income of 6.1 million for 2002. Other expenses for 2003 consisted essentially of (i) costs of implementing our Land SBU restructuring plan of 17.7 million, (ii) costs of implementing a Marine SBU redundancy plan of 1.5 million, (iii) a recognized gain of 4.5 million from indemnities paid by the insurance companies in respect of the *CGG Mistral and* (iv) gains of 5.2 million and 2.5 million resulting from the sale of certain Land non-exclusive surveys and the sale of 400,000 PGS shares, respectively.

***Operating Income (Loss)***

We had operating income for 2003 of 10.6 million compared to operating income of 61.6 million for 2002.

Operating loss from our Services segment for 2003 was 29.8 million for 2003 compared to operating income of 27.4 million for 2002 due to the costs of our Land SBU restructuring plan, reduced multi-client data after-sales and the negative impact of the U.S. dollar/euro exchange rate.

Operating income from our Products segment was 42.9 million for 2003 compared to 51.2 million for 2002, primarily due to the negative impact of the U.S. dollar/euro exchange rate.

***Financial Income and Expenses, Net***

Net financial expenses decreased 36% for 2003 to 21.0 million from 32.6 million for 2002. The decrease resulted primarily from the positive impact of the U.S. dollar/euro exchange rate on our U.S. dollar denominated bond interest and the reversal of the allowance on our PGS shares recorded in 2002 for an amount of 4.1 million.

Net debt was 139.2 million as of December 31, 2003 compared to 201.7 million as of December 31, 2002. This decrease was principally due to a positive free cash flow and the impact of the weaker dollar on our debt, which is mostly denominated in dollars. Gross interest expenses were 27.3 million for 2003 compared to 31.6 million for 2002. Financial income, resulting largely from interest on overnight deposits, was 3.0 million for 2003 compared to 3.4 million for 2002.

Foreign exchange gain was 4.6 million for 2003 compared to 7.9 million for 2002 due primarily to (i) the weakening of the U.S. dollar against the euro and (ii) the impact of our hedging policy. In connection with hedging our currency exposure risks, we hedge the U.S. dollar by forward sales, which can have either a favorable or adverse impact on financial result due to the actual variation in the exchange rate for the euro and the U.S. dollar.

***Equity in Income of Affiliates***

Income from investments accounted for under the equity method, which is primarily from Argas increased slightly to 6.5 million for 2003 from 6.4 million for 2002.

***Income Tax Expenses***

Income tax expenses decreased significantly to 3.1 million for 2003 from 17.4 million for 2002 due to a reduction in deferred tax liabilities resulting from the positive impact of the U.S. dollar/euro exchange rate in the calculation of temporary differences between consolidated and tax basis on our Norwegian fixed assets.

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Since we earn a majority of our taxable income outside of France, foreign taxation significantly affects our overall income tax expense. We are not subject to a worldwide taxation system, and the income tax paid in foreign countries, mainly based on revenues, does not generate comparable tax credits in France

***Net Income (Loss)***

Net loss for 2003 was 10.4 million, after deducting minority interest of 0.3 million resulting from our 50% interest in the entity that was formed for the purpose of directly owning the *CGG Mistral,* compared to a net income of 17.4 million for 2002.

Net loss for 2003 included a goodwill write-down of 1.6 million related to our Land SBU restructuring plan.

**Liquidity and Capital Resources**

Our principal needs for capital are the funding of ongoing operations, capital expenditures, investments in our multi-client data library and acquisitions. We have financed our capital needs with cash flow from operations, borrowings under bank facilities and offerings of notes. We believe that net cash provided by operating activities, the additional financial resources generated by our offerings of notes and available borrowing under bank facilities will be sufficient to meet our liquidity needs for the foreseeable future.

***Operating Activities***

Net cash provided by operating activities for 2004 was 91.9 million compared to 180.5 million for 2003. Before changes in working capital, our net cash provided by operating activities for 2004 was 117.2 million compared to 98.4 million for 2003. Changes in working capital in 2004 had a negative impact on cash from operating activities of 36.6 million (excluding 11.3 million of insurance indemnities received related to the *CGG Mistral*) compared to a positive impact of 31.6 million in 2003 (excluding 50.5 million of insurance indemnities received related to the *CGG Mistral*). This was primarily due to an increase of our accounts receivable resulting from a high level of activity at the end of 2004 and to changes in other liabilities, including payments related to our Land SBU restructuring program of 11.0 million.

Net cash provided by operating activities for 2003 was 180.5 million compared to 219.0 million for 2002. Before changes in working capital, our net cash provided by operating activities for 2003 was 98.4 million compared to 223.2 million for 2002. Changes in working capital in 2003 had a positive impact on cash from operating activities of 31.6 million (excluding 50.5 million of insurance indemnities received related to the *CGG Mistral* vessel) compared to a negative impact of 4.2 million in 2002. This was primarily due to improved management of our accounts receivable, notably in our Offshore and Product segments.

***Investing Activities***

Net cash used in investing activities for 2004 was 100.1 million compared to 163.8 million for 2003. During 2004, we incurred industrial capital expenditures of 43.0 million compared to 36.3 million in 2003, related mainly to maintenance of seismic vessels.

During 2004, we also invested 51.1 million in our multi-client library, primarily in deep offshore areas in the Gulf of Mexico and near Brazil, a decrease from our investment of 109.7 million in 2003. This decrease is a result of our decision to allocate more vessels to exclusive surveys in 2004 in response to market demand. As of December 31, 2004, the net book value of our land and marine multi-client data library was 124.5 million compared to 145.0 million as of December 31, 2003.

Acquisition capital expenditures in 2004 of 27.9 million consisted primarily of the acquisition of Thales Underwater Systems for 21.7 million, Hebei JunFeng Geophysical Co. Ltd for 9.8 million, Orca Instrumentation for 1.3 million and Createch Industrie for 1.9 million.

Proceeds from sales of assets was 23.0 million in 2004 (primarily from the sale of our PGS shares for 17.2 million) and variance in other financial assets was negative 1.1 million in 2004.

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Net cash used in investing activities for 2003 was 163.8 million compared to 241.3 million for 2002. During 2003, we incurred capital expenditures of 36.3 million, related to the acquisition of a 408UL seismic data recording system, vehicles for land surveys and maintenance of seismic vessels compared to 122.0 in 2002.

During 2003, we invested 109.7 million in our multi-client library, primarily in areas offshore in the Gulf of Mexico and Brazil, a decrease from our investment of 130.1 million in 2002. As of December 31, 2003, the net book value of our land and marine multi-client data library was 145.0 million compared to 127.1 million as of December 31, 2002.

During 2003, we also acquired Sodera for U.S.$4.7 million and acquired PGS shares for approximately U.S.$11.5 million as part of that company s financial restructuring plan. During 2002, we disposed of our borehole data seismic acquisition business for U.S.$12.0 million.

As of December 31, 2004 and December 31, 2003, we had no material commitment for any capital expenditures.

***Financing Activities***

Net cash provided by financing activities for 2004 was 44.2 million, resulting primarily from the issuance of U.S.$84,980,000 of subordinated convertible bonds in November 2004, partly offset by the repayment during the six months ended June 30, 2004 of an U.S.$8.7 million bank facility we used to finance the streamers on the seismic vessel the *CGG Mistral*, which sank in December 2002.

Net cash used in financing activities for 2003 was 46.0 million, resulting in part from the repayment, with the insurance proceeds related to the *CGG Mistral*, of a U.S.$20 million bank facility used to finance the hull of that vessel.

Net cash provided by financing activities for 2002 was 68.9 million, resulting primarily from the issuance of U.S.$55 million of $10^5/8\%$ senior notes in February 2002. We also borrowed a total of U.S.$36.9 million from a new bank facility in order to finance streamers and equipment related to the upgrade of the *CGG Mistral*.

Net debt was 139.2 million as of December 31, 2004 and 139.2 million as of December 31, 2003. The ratio of net debt to equity remained stable at 35.2% as of December 31, 2004 compared to 35.1% as of December 31, 2003.

Net debt is the amount of bank overdrafts ( 2.8 million as of December 31, 2004), plus current portion of long-term debt ( 73.1 million as of December 31, 2004), plus long-term debt ( 194.1 million as of December 31, 2004), less cash and cash equivalents ( 130.8 million as of December 31, 2004).

The following table presents a reconciliation of net debt to financing items of the balance sheet for the periods indicated:

| | December 31, | | |
|---|---|---|---|
| | **2004** | **2003** | **2002** |
| | | **(in millions)** | |
| Bank overdrafts | 2.8 | 3.2 | 10.5 |
| Current portion of long-term debt | 73.1 | 24.6 | 58.6 |
| Long-term debt | 194.1 | 207.8 | 249.2 |
| Less cash and cash equivalents | (130.8) | (96.4) | (116.6) |
| **Net debt** | 139.2 | 139.2 | 201.7 |

ORBDA for 2004 increased to 165.4 million from 162.3 million for 2003.

ORBDA (Operating Result Before Depreciation and Amortization, previously denominated Adjusted EBITDA ) is defined as operating income (loss) excluding non-recurring revenues (expenses) plus depreciation, amortization and additions (deductions) to valuation allowances of assets and add-back of dividends received from equity companies. ORBDA is presented as additional information because our syndicated credit facility dated March 12, 2004 requires us to respect a maximum ratio of consolidated net debt to ORBDA. The maximum

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ratio of consolidated net debt to ORBDA was 2.00 to 1 for periods ending on or before December 31, 2004, compared to our actual ratio of 0.86 to 1 and 0.84 to 1 for the years ended December 31, 2003 and 2004, respectively. The maximum permitted ratio is 1.75 to 1 for subsequent periods ending on or before December 31, 2005 (revised to 2.50 to 1 in a waiver dated August 31, 2005) and 1.50 to 1 thereafter. If we fail to meet this ratio and do not obtain a waiver, we may be unable to borrow under the syndicated credit facility and may be compelled to repay amounts outstanding under the facility. Either the inability to borrow or the requirement to repay borrowed sums may have a negative effect on our liquidity and, consequently, may increase our vulnerability to general adverse economic and industry trends or limit our flexibility in adapting to such trends. ORBDA is not a measure of financial performance under French GAAP, U.S. GAAP or IFRS and should not be considered as an alternative to cash flow from operating activities or as a measure of liquidity or an alternative to net income as indicators of our operating performance or any other measures of performance derived in accordance with French GAAP, U.S. GAAP or IFRS.

The following table presents a reconciliation of Operating Results Before Depreciation and Amortization ( ORBDA ) to *Net cash provided by operating activities* for the periods indicated as follows:

| | December 31, | | |
|---|---|---|---|
| | **2004** | **2003** | **2002** |
| | **(in million of euros)** | | |
| **ORBDA** | 165.4 | 162.3 | 210.1 |
| Interests and other financial income and expense net | (22.4) | (21.0) | (32.6) |
| Exchange gains net | 4.4 | 4.6 | 7.9 |
| Income tax expense | (9.7) | (3.1) | (17.4) |
| Deferred income tax | (12.7) | (11.6) | 2.0 |
| Other non-cash items | (7.7) | (20.1) | (19.0) |
| Non-recurring gains (losses) | 0.1 | (7.8) | 69.1 |
| Less net gain on sale of asset | (10.5) | (6.0) | (4.3) |
| Dividends received from equity companies | | (0.7) | |
| Increase (decrease) in other long-term liabilities | 3.6 | (5.4) | 5.9 |
| (Increase) decrease in trade accounts and notes receivables | (28.5) | 16.0 | 60.5 |
| (Increase) decrease in inventories and work in progress | (11.0) | (0.2) | 16.7 |
| (Increase) decrease in other current assets | 11.7 | 70.3 | (77.1) |
| Increase (decrease) in trade accounts and notes payables | 16.0 | (10.6) | 0.6 |
| Increase (decrease) in other current liabilities | (13.5) | 6.6 | (4.9) |
| Less variation of current assets allowance included above | 6.7 | 7.2 | 1.5 |
| **Net cash provided by operating activities** | 91.9 | 180.5 | 219.0 |

On January 26, 2005, we redeemed U.S.$75 million principal amount of our outstanding $10^5/8$% senior notes due 2007. We paid an early redemption premium of 5.3125% of the principal amount of notes redeemed (U.S.$4.0 million) plus accrued and unpaid interest.

On November 4, 2004, we issued U.S.$84,980,000 principal amount of 7.75% subordinated bonds convertible into new ordinary shares or redeemable into new shares and/or existing shares and/or in cash, maturing in 2012, to Onex Partners LP, Onex American Holdings II LLC, Onex US Principals LP and CGG Executive Invesco, LLC. We used the net proceeds of U.S.$79.0 million to redeem the notes described in the previous paragraph.

On March 12, 2004, CGG, CGG Marine and Sercel signed a revolving credit facility agreement of U.S.$60 million with certain banks and financial institutions acting as lenders. The purpose of this agreement was to replace the previous multi-currency facility agreement dated September 15, 1999, as amended on August 31, 2000,

which was cancelled. The lenders were granted a lien on the accounts receivable of CGG, CGG Marine and Sercel S.A. The facility has a term of three years and will begin amortizing after March 11, 2006, one year from its final maturity. It is currently undrawn.

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On February 5, 2002, we issued an additional U.S.$55 million aggregate principal amount of 10$^{5}$/8% senior notes due 2007 at par value in the international capital markets, following our original issuance of senior notes in November 2000. With the net proceeds of approximately U.S.$52.5 million, we repaid approximately U.S.$22 million of outstanding indebtedness under our existing syndicated credit facility and approximately U.S.$10 million in other long-term revolving debt and used the balance for general corporate purposes.

On November 22, 2000, we issued U.S.$170 million aggregate principal amount of 10$^{5}$/8% senior notes due 2007 in the international capital markets. We used the approximately $164.9 million of net proceeds to repay a portion of outstanding indebtedness under our existing syndicated credit facility and to fund the U.S.$25 million cash portion of the purchase price of two marine seismic vessels and certain seismic data from an affiliate of Aker.

***Contractual Obligations***

The following table sets forth our future cash obligations as of December 31, 2004.

| | Payments Due by Period | | | | |
|---|---|---|---|---|---|
| | **Less than 1 year** | **1-3 years** | **4-5 years** | **More than 5 years** | **Total** |
| | | | **(in millions)** | | |
| Long-Term Debt | 60.4 | 114.7 | 0.9 | 63.5 | 239.5 |
| Capital Lease Obligations | 9.8 | 16.6 | 0.3 | | 26.7[(a)] |
| Operating Leases | 43.8 | 42.4 | 2.6 | 0.6 | 89.4 |
| Other Long-Term Obligations (bond interest) | 20.4 | 33.1 | 9.7 | 14.7 | 77.9 |
| **Total Contractual Cash Obligations** | 134.4 | 206.8 | 13.5 | 78.8 | 433.5 |

(a) Includes 1.9 million of interest.

***Off-Balance Sheet Arrangements***

We have not entered into any off-balance sheet arrangements that have or are reasonably likely to have a current or future material effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

**Research and development**

Our ability to compete effectively and maintain a significant market position in our industry depends to a substantial extent upon our continued technological innovation. We have focused on rationalizing our research and development activities both to reduce costs and to focus our research and development efforts primarily on reservoir characterization, multi-component seabed seismic processing techniques, structural imaging and advanced seismic recording equipment. Our research and development teams, totaling approximately 200 employees, are divided among operating divisions. The integration of new entities by Sercel has strengthened our research capabilities, especially in underwater acoustic transmission, oceanographic metrology and borehole electronics for area studies. We also access new sources of information or technology by entering into strategic alliances with equipment manufacturers, oil and gas companies, universities, or other clients or by acquiring technology under license from others. We have historically entered into and continue to pursue common research programs with the *Institut Français du Pétrole*, an agency of the French government.

While the market for our products and services is subject to continual and rapid technological changes, development cycles from initial conception through introduction can extend over several years. Our efforts have

resulted in the development of numerous inventions, new processes and techniques, many of which have been incorporated as improvements to our product lines. During 2002, 2003 and 2004, our research and development expenditures were 30.0 million, 29.3 million, and 35.5 million, respectively, of which approximately 10%, 8% and 5.6%, respectively, was funded by French governmental research entities, such as the *Fonds de Soutien*

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*aux Hydrocarbures* (which funding is to be repaid to such organizations from sales of products or services developed with such funds).

We have budgeted 40.5 million for research and development expenditures in 2005, including both expensed and capitalized costs, of which we expect to receive approximately 2.4 million from the *Agence Nationale de Valorisation de la Recherche*.

**Trend Information**

***Currency Fluctuations***

As a company that derives a substantial amount of its revenue from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates. In each of the years ended December 31, 2004, 2003 and 2002, over 90% of our operating revenues and approximately two-thirds of our operating expenses were denominated in currencies other than the euro. These included the U.S. dollar and, to a significantly lesser extent, other non-euro Western European currencies, principally the British pound and the Norwegian kroner. In addition, a significant portion of our revenues that were invoiced in euros related to contracts that were effectively priced in U.S. dollars, as the U.S. dollar often serves as the reference currency when bidding for contracts to provide geophysical services. Our exposure to fluctuations in the euro/ U.S. dollar exchange rate has increased considerably over the last few years due to increased sales outside of Europe.

Fluctuations in the exchange rate of the euro against such other currencies, particularly the U.S. dollar, have had in the past and can be expected in future periods to have a significant effect upon our results of operations. Since we participate in competitive bids for data acquisition contracts that are denominated in U.S. dollars, an appreciation of the U.S. dollar against the euro improves our competitive position against that of other companies whose costs and expenses are denominated in U.S. dollars. For financial reporting purposes, such appreciation positively affects our reported results of operations since U.S. dollar-denominated earnings that are converted to euros are stated at an increased value. A depreciation of the U.S. dollar against the euro, such as has occurred since the second half of 2003, has the opposite effect.

We attempt to match foreign currency revenues and expenses in order to balance our net position of receivables and payables denominated in foreign currencies. For example, charter costs for our seismic vessels, as well as our most important computer hardware leases, are denominated in U.S. dollars. Nevertheless, during the past five years such dollar-denominated expenses have not equaled dollar-denominated revenues, principally due to personnel costs payable in euros.

In order to improve the balance of our net position of receivables and payables denominated in foreign currencies, we maintain a portion of our financing in U.S. dollars. At December 31, 2004, 2003 and 2002, our total outstanding long-term debt denominated in U.S. dollars was U.S.$331.8 million ( 243.6 million at the December 31, 2004 exchange rate), U.S.$244.9 million ( 193.9 million at the December 31, 2003 exchange rate) and U.S.$272.6 million ( 259.9 million at the December 31, 2002 exchange rate), respectively, representing 92%, 84% and 85%, respectively, of our total long-term debt outstanding at such dates.

In addition, to be protected against the reduction in value of future foreign currency cash flows, we follow a policy of selling U.S. dollars forward at average contract maturity dates that we attempt to match with future net U.S. dollar cash flows (revenues less costs in U.S. dollars) expected from firm contract commitments, generally over the ensuing six months. As of December 31, 2004, 2003 and 2002, we had U.S.$127 million (with a euro equivalent-value of 102 million), U.S.$145 million (euro equivalent-value of 114 million) and U.S.$133 million (euro equivalent-value of 137 million), respectively, of notional amounts outstanding under euro/U.S. dollar forward exchange contracts and other foreign exchange currency hedging instruments.

We do not enter into forward foreign currency exchange contracts for trading purposes.

***Inflation***

Inflation has not had a material effect on our results of operations during the periods presented. We operate in, and receive payments in the currencies of, certain countries with historically high levels of inflation, such as

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Mexico, Brazil, Indonesia and Venezuela. We attempt to limit such risk by, for example, indexing payments in the local currency against, principally, the U.S. dollar exchange rate at a certain date to account for inflation during the contract term.

***Income Taxes***

We conduct the majority of our field activities outside of France and pay taxes on income earned or deemed profits in each foreign country pursuant to local tax rules and regulations. We do not receive any credit in respect of French taxes for income taxes paid by foreign branches and subsidiaries. Net tax expenses in recent periods were attributable to activities, principally in land acquisition, carried on outside of France. We have significant tax loss carryforwards that are available to offset future taxation on income earned in certain OECD countries. We recognize tax assets if a minimum history of profit for the past three years exists and budget estimates also indicate a profit for the following year.

***Seasonality***

Our land and marine seismic acquisition activities are seasonal in nature. We generally experience decreased revenues in the first quarter of each year due to the effects of weather conditions in the Northern Hemisphere and to the fact that our principal clients are generally not prepared to fully commit their annual exploration budget to specific projects during such period. We have historically experienced higher levels of activity in our equipment manufacturing operations in the fourth quarter as our clients seek to fully deploy annual budgeted capital.

***U.S. Accounting Standards***

On December 16, 2004, the Financial Accounting Standards Board ( FASB ) issued FASB Statement No. 123 (revised in 2004), Share-Based Payment , which is a revision of FASB Statement No. 123, Accounting for Stock-Based Compensation . Statement 123(R) supersedes APB Opinion No. 25, Accounting for Stock Issued to Employees and amends FASB Statement No. 95, Statement of Cash Flows . Generally, the approach in FASB Statement 123(R) is similar to the approach described in FASB Statement 123. However, FASB Statement 123(R) requires all share-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. Pro forma disclosure is no longer an alternative.

FASB Statement 123(R) must be adopted no later than July 1, 2005.

FASB Statement 123(R) permits public companies to adopt its requirements using one of two methods:

- modified prospective method, in which compensation cost is recognized beginning with the effective date (i) based on the requirements of FASB Statement 123(R) for all share-based payments granted after the effective date and (ii) based on the requirements of FASB Statement 123 for all awards granted to employees prior to the effective date of FASB Statement 123(R) that remain unvested on the effective date; or

- modified retrospective method, which includes the requirements of the modified prospective method described above, but also permits entities to restate based on the amounts previously recognized under FASB Statement 123 for purposes of pro forma disclosures either (i) all prior periods presented or (ii) prior interim periods of the year of adoption.

The company plans to adopt FASB Statement 123 using the modified-prospective method.

***Transition to IFRS Accounting***

European rule n°1606/2002, endorsed by the European Union in 2002, requires every company listed in a country of the European Union to adopt IFRS as its primary accounting principles from January 1, 2005. Our first consolidated financial statements under IFRS will be those at and for the three months ended March 31, 2005. We will present restated 2004 financial statements for the comparable period under IFRS.

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Consolidated financial statements under IFRS for the year 2004 will be presented in compliance with IFRS effective at January 1, 2005, as released at December 31, 2004. We chose to apply standards IAS 39 and IFRS 2 starting January 1, 2004 to ensure that our 2004 financial statements are comparable to our 2005 financial statements.

In order to prepare and enhance the comprehension of information to be provided under IFRS, a qualitative analysis of our IFRS implementation follows, indicating those standards that differ from our French GAAP through December 31, 2004, and the decisions we have made in adopting IFRS when there is a significant impact on our consolidated financial statements. IFRS 1, which we refer to below, addresses options related to the transition by companies to IFRS. All retrospective effects prior to January 1, 2004 are reflected in shareholders equity as of January 1, 2004.

*Goodwill*

Under French GAAP, we currently amortize goodwill over the estimated future benefit periods.

Implementing IFRS will lead us to no longer amortize goodwill beginning January 1, 2004.

Each year, we perform impairment tests of the goodwill net book value. Under IFRS (IAS 36), impairment tests should be performed for each cash-generating unit (CGU) to which assets are allocated. The impairment tests we currently performed on our segments are compliant with this standard.

Furthermore, IFRS 1 provides the option to restate business combinations before January 1, 2004. We have not adopted this option.

*Development costs of new products*

Under French GAAP, all development costs are accounted for as operating expenses. This is shown in our accounts in the item Research and development expenses . Implementing IFRS will lead us to capitalize development cost of projects that comply with the following requirements:

it is technically feasible to complete development of the intangible asset in order to use it or sell it;

we intend to complete development of the intangible asset in order to use it or sell it;

we have the ability to use or sell the intangible asset;

the intangible asset is likely to generate future economic benefits, either because it is useful to us or through an existing market for the intangible asset itself or for its products;

we have the technical, financial and other resources to complete development and sale or use of the intangible asset; and

we are able to properly assess expenses attributable to the intangible asset being developed.

We will capitalize development costs of seismic equipment development projects in the Products segment and of processing business development projects in the Services segment. Development costs will be amortized over the expected useful life of projects, which we estimate to be five years.

*Depreciation of intangible and tangible assets*

Under French GAAP, the acquisition cost of tangible assets is depreciated on a straight-line basis over their useful life. Implementing IFRS (IAS 16) will lead us to calculate the straight-line depreciation based on acquisition cost, minus a residual value, if applicable.

Our current practice as regards depreciation of intangible assets (IAS 38) is compliant with IFRS and will remain unchanged.

IFRS 1 provides the option to use the fair value method to assess the value of assets on the IFRS balance sheet at December 1, 2004, but we chose not to use this option.

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*Currency translation adjustments*

IFRS 1 provides the option to offset currency translation adjustments at January 1, 2004 against retained earnings. We will use this option.

*Financial debt*

Under French GAAP, we present the issuance costs and premium of debts as an asset on the balance sheet and amortize them on a straight-line basis over the life of the debt as operating expenses. Implementing IFRS (IAS 38) will lead us to classify such issuance costs and premium as a decrease in financial debt and to amortize them according to the effective interest rate method over the lifetime of the debt as financial expenses.

Under French GAAP, our subordinated bonds convertible into new ordinary shares or redeemable into new shares and/or existing shares and/or in cash are presented entirely as financial debt at nominal value. Implementing IFRS (IAS 39) will lead us to separate the fair value of the equity component of this debt and to record such equity component in shareholders equity. The nominal amount of the debt will be reallocated over the life of the debt as a financial expense.

*Hedging derivatives instruments*

Under French GAAP, certain derivative instruments that are qualified as hedges of future transactions and unrealized gains are not recognized in the current period. Hedging gains are recorded in the same period as the loss on the hedged transactions. Gains and losses of derivatives instruments qualified as hedging assets or liabilities are accounted for in the income statement in the same period as the recognition of the hedged asset or liability.

Implementing IFRS (IAS 39) will lead us to record the effective portion of changes in fair value of derivatives qualifying as hedges of future cash flows temporarily in a specific equity account and then to recognize it in earnings along with the related effects of the hedged items. Any ineffective portion of hedges will be reported in earnings as it occurs.

*Treasury shares*

Under French GAAP, shares of our company that we own for the purpose of employee allocation or share price regulation are treated as marketable securities and are accounted for under the item Cash and Cash equivalents . Gains or losses on these shares are accounted for in the income statement. Implementing IFRS (IAS 32) will lead us to account for our treasury shares as a reduction of equity and to recognize the gains and losses on treasury shares as equity variance.

*Deferred tax presentation*

Under French GAAP, deferred tax assets and deferred tax liabilities for the same entity are set off on the balance sheet. Implementing IFRS (IAS 12) will lead us to separately recognize deferred tax assets and deferred tax liabilities when they are not realized on the same maturity dates.

*Employee benefits*

IFRS 1 provides the option to present actuarial gains and losses not recorded at January 1, 2004 as a reduction of shareholders equity at January 1, 2004, and we intend to use this option.

*Stock options*

Under French GAAP, no cost is recognized when stock options are granted.

Implementing IFRS (IFRS 2) will lead us to recognize stock options at their fair value on the grant date as an operating expense over the vesting period. This accounting applies to stock options granted since November 7, 2002 and stock options vested since January 1, 2004.

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## Item 6: DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

### Directors and Senior Management

***Board of Directors***

Under French law, the Board of Directors determines our business strategy and monitors business implementation. Subject to the specific powers granted by the ordinary general shareholders meeting, the Board of Directors deals with any issues relating to our affairs. In particular, the Board of Directors prepares and presents our year-end accounts to our ordinary general shareholders meeting. Our Board of Directors consists of between six and fifteen members elected by our shareholders. Each director must own at least one director-qualifying share. Under French law, a director may be an individual or a legal entity for which an individual is appointed as permanent representative.

Our *statuts* (memorandum and articles of association) provide that each director is elected for a six-year term by the ordinary general shareholders meeting. There is no obligation for directors to be French nationals. According to French corporate law, the number of terms that a director may serve is limited to five.

Directors are required to comply with applicable law and our *statuts*. Under French law, directors are responsible for actions taken by them that are contrary to the company s interests and may be held liable for such actions both individually and jointly with the other directors.

The following table sets forth the names of our current directors, their positions, the dates of their initial appointment as directors and the expiration dates of their current term.

| Name | Position | Initially Appointed | Term Expires |
|---|---|---|---|
| Robert Brunck(1) | Chairman of the Board and Chief Executive Officer | 1998 | 2008 |
| Olivier Appert(2) | Director | 2003 | 2008 |
| Rémi Dorval | Director | 2005 | 2010 |
| Jean Dunand(3) | Director | 1999 | 2007 |
| Gérard Friès(1) | Director | 2002 | 2008 |
| Yves Lesage(3) | Director | 1988 | 2009 |
| John MacWilliams(1) | Director | 1999 | 2005 |
| Christian Marbach(1) | Director | 1995 | 2007 |
| Robert Semmens(2)(3) | Director | 1999 | 2005 |
| Daniel Valot(2) | Director | 2001 | 2006 |

(1) Member of Strategic Planning Committee.

(2) Member of Appointment-Remuneration Committee.

(3) Member of Audit Committee.

Mr. Brunck, 55, has been our Chairman and Chief Executive Officer since May 1999. Mr. Brunck was Vice Chairman and President from September 1998 to May 1999 and was our President and Chief Operating Officer from February 1995 to September 1998. Mr. Brunck was Vice President of Administration and Development from 1991 to 1995 and Chief Financial Officer from 1989 to 1991. He is Chairman of the Supervisory Board of Sercel Holding SA, Chairman of the Board of Directors of CGG Americas Inc., Director of the *Ecole Nationale de Géologie*, Director of the Consortium Français de Localisation S.A., Director of the *Bureau de Recherches Géologiques et Minières* (BRGM) and Chairman of Armines.

Mr. Appert, 55, has been Chairman and Chief Executive Officer of IFP since April 2003. Mr. Appert was President for the long-term cooperation and energy policies analysis within the International Energy Agency since

October 1999. He is also a Director of Technip and of the Institut Physique du Globe de Paris.

Mr. Dorval, 54, has been Vice-Chairman and President of Soletanche-Bachy Entreprise since June 1997. Mr. Dorval is Director, Vice Chairman and Deputy Chief Executive Officer of Solétanche Bachy France,

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Chairman of Forsol, a Director of Solétanche S.A., Solmarine, SHPIC, Sol-Expert International, Sepicos Perfosol, Solétanche Bachy GmbH, Bachy Soletanche Holdings, co-manager of Inertec and permanent representative of Solétanche in the *Groupement d Intérêt Economique* SB Mat.

Mr. Dunand, 65, was Financial and Legal Director of ISIS from 1999 to December 2001 and was Deputy General Manager (Russia and CIS) of Total Exploration-Production from 1994 to 1999.

Mr. Friès, 49, has been Senior Executive Vice President of the French Petroleum Institute (*Institut Français du Pétrole*, or IFP) since September 2001. Mr. Friés was Vice President of the Geoscience Research Center of Totalfina Exploration UK plc from 1999 to September 2001 and was a Director of Elf Gabon from 1997 to 1999. Mr. Friés is the representative of IFP Investissements on the Board of Directors of Geoservices S.A., a Director of ISIS Développement and of Malmaison Resources Inc. and a member of the Supervisory Board of Beicip-Franlab.

Mr. Lesage, 67, has been CGG Honorary Chairman since May 1999. Mr. Lesage was Chairman and Chief Executive Officer of CGG from January 1995 to May 1999. He was Chairman, President and Chief Executive Officer of Sogerap from 1994 to 1995. Mr. Lesage is a Director of Earth Decision Sciences. He is President of the *Comité d Etudes Pétrolières & Marines* and of the *Comité Industriel Statutaire de l Amont IFP*.

Mr. MacWilliams, 49, is a Partner of The Tremont Group LLC. He has been a Partner of The Beacon Group LLC since 1993. Mr. MacWilliams is a director of Alliance Resource Partner L.P. and Soft Switching Technologies Inc.

Mr. Marbach, 67, *Ingénieur des Mines*, was Advisor to the General Management of Suez-Lyonnaise des Eaux from 1996 to 2000. Before that time, Mr. Marbach was Chairman and Chief Executive Officer of Coflexip and Coflexip Stena Offshore from 1991 to 1996. Mr. Marbach is a member of the Supervisory Board of Lagardère, a Director of Erap, Supervisor of Sofinnova and President of the Small and Medium Size Business Agency, a private sector group.

Mr. Semmens, 47, is an independent consultant and was Managing Director of The Beacon Group LLC from 1993 to 2000. Mr. Semmens is a Director of Mach Gen Holdings LLC and a member of the Supervisory Board of Sercel Holding SA.

Mr. Valot, 60, has been Chairman and Chief Executive Officer of Technip (which changed its name from Technip-Coflexip in July 2003) since December 2001. Mr. Valot was Chairman and Chief Executive Officer of Technip from 1999 to December 2001. Mr. Valot was President of Total Exploration and Production, and was a member of the Total Group Executive Committee from 1995 to 1999. Mr. Valot is Vice Chairman of Technip Americas, Chairman of Technip Far East and Technip Italy, a Director of IFP, SCOR and SCOR VIE and is a permanent representative of Technip on the Board of Directors of Technip France.

***Executive Officers***

Under French law and our current *statuts*, the Chairman and Chief Executive Officer has full executive authority to manage our affairs. The Board of Directors has the power to appoint and remove, at any time, the Chairman and Chief Executive Officer. Pursuant to French law and our current *statuts*, the Chairman and Chief Executive Officer, where those functions are exercised by the same person, has full power to act on our behalf and to represent us in dealings with third parties, subject only to those powers expressly reserved by law to the Board of Directors or our shareholders. The Chairman and Chief Executive Officer determines and is responsible for the implementation of the goals, strategies and budgets for our different businesses, which are reviewed and monitored by the Board of Directors. In accordance with French corporate law, our current *statuts* provide for the election by the Board of Directors of one person to assume the position of Chairman and Chief Executive Officer or the division of such functions between two different persons. In its session of May 15, 2002, the Board of Directors decided that Mr. Brunck would assume the position of Chairman and Chief Executive Officer until the expiry of his term as a director, unless otherwise decided by the Board. Our current *statuts* provide that the Board of Directors may appoint up to five President and Chief Operating Officers (*Directeurs Généraux Délégués*) upon proposal of the Chief Executive Officer, whether or not this person is also the Chairman of the Board.

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The following table sets forth the names of our current executive officers who serve as members of our Executive Committee, their current positions with us and the first dates as of which they served as our executive officers. We employ our executive officers under standard employment services agreements that have no fixed term.

**Executive Committee *(Comité Exécutif)***

| Name | Current Position | Executive Officer Since |
|---|---|---|
| Robert Brunck | Chairman and Chief Executive Officer | 1989 |
| Gérard Chambovet | Senior Executive Vice President, Strategy, Planning and Control | 1995 |
| Thierry Le Roux | Senior Executive Vice President, Products | 1995 |
| Christophe Pettenati-Auzière | Senior Executive Vice President, Services | 1997 |
| Michel Ponthus | Senior Executive Vice President, Finance and Human Resources and Chief Financial Officer | 1995 |

Mr. Chambovet, 52, was appointed Senior Executive Vice President, Strategy, Planning and Control in January 2004. Until that time, he had been Senior Executive Vice President of our Services segment since October 1998. Mr. Chambovet was Executive Vice President of our Acquisition Product line from March 1995 to October 1998 and was Manager of our data processing center in Massy, France from 1987 to 1995.

Mr. Le Roux, 51, has been Senior Executive Vice President of our Products segment since October 1998. Mr. Le Roux was Executive Vice President of CGG s Geophysical Equipment operations from March 1995 to October 1998. Mr. Le Roux was Business Development Manager from 1992 to 1995 and Far East Manager from 1984 to 1992.

Mr. Pettenati-Auzière, 52, was appointed Senior Executive Vice President, Services in January 2004. Until that time, he had been Senior Executive Vice President, Strategy, Planning and Control since January 2001. Mr. Pettenati-Auzière was Senior Executive Vice President of our Offshore SBU from July 1999 to January 2001, Vice President of Business Development and Investor Relations from December 1998 to July 1999 and Vice President of Seismic Acquisition from April 1997 to December 1998. He was Executive Vice President of International Operations for Coflexip from 1990 to 1996.

Mr. Ponthus, 58, has been Senior Executive Vice President, Finance and Human Resources, and Chief Financial Officer since October 1998. Mr. Ponthus was our Chief Financial Officer from March 1995 to October 1998 and prior to joining CGG, Mr. Ponthus was Administrative and Financial Vice President of Petitjean Industries from 1990 to 1995.

The following table sets forth the names of the executive officers who, together with the Executive Committee, constitute the Group Management Committee, their current positions, and the dates as of which they were first appointed.

**Group Management Committee *(Comité de Direction du Groupe)***

| Name | Current Position | Executive Officer Since |
|---|---|---|
| Luc Benoit-Cattin | Executive Vice President, Offshore SBU | 2003 |
| Guillaume Cambois | Executive Vice President, Data Processing and Reservoir SBU | 2001 |
| Stéphane-Paul Frydman | Deputy Chief Financial Officer, CGG Group | 2003 |
| Dominique Robert | Executive Vice President, Land SBU | 2000 |

| | | |
|---|---|---|
| Pascal Rouiller | Chief Operating Officer, Sercel Group | 1997 |

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Mr. Benoit-Cattin, 41, was appointed Executive Vice President of our Offshore SBU in January 2005. Before that time, he had been Vice President, Services since June 2002. Prior to joining CGG, Mr. Benoit-Cattin was Executive Vice President for foil and heat transfer businesses in the Pechiney Group from January 1998 to May 2002 and Advisor to the minister of industry, in charge of energy and nuclear topics from June 1995 to May 1997.

Mr. Cambois, 40, has been Executive Vice President, Processing and Reservoir SBU, since July 2001. Mr. Cambois was Vice President, Processing SBU Technology from 1999 to 2001, Manager of the Calgary processing center from 1998 to 1999 and Manager of Research and Development of the Houston processing center from 1995 to 1998.

Mr. Frydman, 41, was appointed Deputy Chief Financial Officer of the CGG Group in January 2004. Before that time, he had been Vice President in charge of corporate financial affairs reporting to the Chief Financial Officer since December 2002. Prior to joining CGG, Mr. Frydman was an Investor Officer of Butler Capital Partners, a private equity firm, from April 2000 to November 2002, and Industrial Advisor to the French Minister of the Economy and Finances from June 1997 to March 2000.

Mr. Robert, 53, has been Executive Vice President of our Land SBU since December 2000. Mr. Robert was chief Operating Officer of Flagship from January 2000 to December 2000 and Vice President of the Asia Pacific Region from September 1995 to January 2000.

Mr. Rouiller, 51, has been Chief Operating Officer of the Sercel Group since December 1999. Mr. Rouiller was Vice President of our Product segment from October 1995 to December 1999 and Vice President for the Asia Pacific Region from May 1992 to September 1995.

**Compensation**

The aggregate compensation of our executive officers, including the Chairman and Chief Executive Officer, includes both a fixed element and a bonus element. The amount of the bonus depends upon the achievement of commercial and financial targets for items such as consolidated net income, operating income and free cash flow of our various activities and upon satisfaction of certain individual qualitative objectives. With this bonus, the aggregate compensation may substantially vary from one year to another. The bonus due to the general management for a given fiscal year is paid during the first semester of the next fiscal year.

The aggregate compensation as a group of the executive officers (excluding the Chairman and Chief Executive Officer) who were members of the Group Management Committee paid in fiscal year 2004 was 2,395,438, including the 2003 bonus.

The aggregate compensation paid to Mr. Brunck, Chairman and Chief Executive Officer, in fiscal year 2004 was 371,613 of fixed compensation and 172,000, representing his 2003 bonus. In addition, Mr. Brunck received 37,873.79 in his capacity as a Director. Mr. Brunck will be paid his 2004 bonus of 238,550 in the first half of 2005. Mr. Brunck is also a beneficiary of the supplemental pension and retirement plan described below.

Directors as a group received aggregate compensation of 263,000 in January 2005 for services provided in their capacity as such during fiscal year 2004. No amounts were set aside or accrued by us or our subsidiaries to provide pension, retirement or similar benefits to the executive officers or directors. Directors service contracts do not provide for benefits upon termination.

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The following table sets forth the amounts CGG and our subsidiaries paid to directors of CGG, in their capacity as directors, in the year ended December 31, 2004: