WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

ARGOS JOINT TARIFF AGREEMENT
TWENTY-THIRD MEETING

Angra dos Reis, Brazil, 27-29 October 2003

FINAL REPORT

N O T E

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GENERAL SUMMARY OF THE WORK OF THE SESSION

1. ORGANIZATION OF THE MEETING

1.1. OPENING OF THE MEETING

1.1.1 The twenty-third meeting on the Argos Joint Tariff Agreement was opened at 0900 on Monday, 27 October 2003, in the conference room of the Portogalo Suite Hotel in Angra dos Reis, Brazil, by the outgoing chairman, Mr Derek Painting. Mr Painting welcomed participants to the meeting, and expressed his thanks to the hosts, the Brazilian National Institute of Meteorology (INMET), as well as to the Directorate of Hydrology and Navigation of the Brazilian Navy (DHN) and the IOC Rio GOOS Office, for providing such excellent facilities and support.

1.1.2 The list of participants in the meeting is given in *Annex I.*

1.2. ADOPTION OF THE AGENDA

1.2.1 The meeting adopted its agenda, which is given in *Annex II*.

1.3. WORKING ARRANGEMENTS

1.3.1 The meeting agreed on its working hours and other arrangements for the conduct of the session. The documentation was introduced by the Secretariats.

2. REPORT OF THE CHAIRMAN OF THE JTA

2.1 The meeting noted with interest that, during the intersessional period, the chairman undertook a number of actions resulting from decisions taken at the twenty-second meeting on the Argos JTA. These actions included:

(i) In January letters were written to the co-chairs of the Argos Operations Committee (OPSCOM) concerning possible re-activation of the Lannion Global Ground Station. This matter was taken up again at the subsequent annual OPSCOM meeting (see (iii) below).

(ii) Following the custom adopted in recent years, progress reports were circulated to JTA participants detailing the actual activity for 2002, the final participation in the 2003 agreement and estimated consumption for 2003 based on activity to 31 July 2003.

(iii) The chairman attended the 37th OPSCOM meeting (Les Saintes-Maries de la Mer, 11-13 June 2003) and presented a written report on the main results of JTA-XXII. The need to examine the possibility of re-activating the Lannion Ground Station to down-link stored data as requested both by the DBCP and JTA participants was discussed. The outcome was instead an undertaking to enhance a receiving station at Barrow to disseminate stored data. According to practical experiments carried out at this station, this action would enable retrieval of virtually all ‘blind orbit’ data lost through the closure of Lannion. The chairman noted that this claim was not supported by earlier theoretical studies and suggested that the matter should be kept under review pending experience gained with the Barrow solution.

(iv) The OPSCOM noted that the ‘five year plan’ adopted by the JTA would terminate in 2004 and was expected to achieve it’s objectives, especially that of eliminating the accumulated deficit. The OPSCOM expressed some concern over the increasing complexity of JTA Terms and Conditions and the lack of an agreed operating cost basis for the future. It therefore requested the JTA chairman and CLS to develop a robust framework for future Tariff Agreements. This should aim to simplify JTA

participation and provide an operating cost basis that reflected properly costs attributable to activity of JTA participants (unlike an arbitrary proportion of total costs as hitherto). It is hoped that that a proposal can be prepared in time for agreement in autumn 2004, for implementation in 2005.

2.2 The meeting expressed its considerable appreciation to the chairman for this report and for his ongoing work on behalf of JTA participants.

3. REPORT ON THE 2003 GLOBAL AGREEMENT

3.1 Mr Christian Ortega of CLS/Service Argos reported on the status of the 2003 Global Agreement. He noted that a final total of 1237.18 PTT (Platform Transmitter Terminal) years had eventually been signed under the agreement for preferential tariff arrangements, made up as follows:

COUNTRIES	**PTT-year**
AUSTRALIA	42.00
AUSTRIA	3.40
BRASIL	6.00
CANADA	64.00
CHINA	11.66
DENMARK	11.50
FINLAND	3.40
FRANCE	81.50
GERMANY	56.00
ICELAND	1.50
INDIA	15.00
ITALY	13.00
KOREA	4.70
NETHERLANDS	6.60
NEW ZEALAND	9.30
NORWAY	19.00
SOUTH AFRICA	28.80
SPAIN	2.82
SWEDEN	2.00
UND ARAB EMTS	6.00
UNITED KINGDOM	57.00
USA	790.00
OTHER	2.00
TOTAL	**1237.18**

Mr Ortega noted that this total number contracted was higher than the estimated number recorded at the JTA-XXII meeting, 1149.61 PTT-years.

3.2 Regarding the "bonus scheme" adopted at its seventeenth session (paragraph 5.5 of the final report), the meeting recalled that, at its twenty-first session, it had agreed that:

a) *Where the number of platform-years contracted by the country continues to equal or exceed the estimate confirmed and recorded at the **JTA-XVII** meeting**,** the contracted number will be increased by 82% for the purpose of calculating any excess use.*

b) *For countries not meeting the requirement in (a) above, but having benefited from a 35% bonus during the year preceding immediately that of these present Terms and Conditions, and whose number of platform-years contracted equals or exceeds the number signed under the preceding Terms and Conditions, the contracted number will be increased by 82% for the purpose of calculating any excess use.*

c) *For countries not meeting the requirements in (a) and (b) above, but whose number of platform-years contracted equals or exceeds the number signed under the preceding Terms and Conditions**,** the contracted number will be increased by 35% for the purpose of calculating any excess."* (paragraph 32 of the summary report).

On that basis, the "bonus situation" appeared to be as given in the table below:

Countries	Agreed at JTA XVII PTT-Yrs	Contracted for 2001 PTT-Yrs	Contracted for 2002 PTT-Yrs	Contracted for 2003 PTT-Yrs	Bonus for 2003 82%	Bonus for 2003 35%
AUSTRALIA	53.00	42.00	42.00	42.00	yes	
AUSTRIA			2.00	3.40		yes
BRAZIL	12.00	12.00	10.00	6.00		
BURKINA FASO	13.00	10.00	6.00			
CANADA	64.00	64.00	64.00	64.00	yes	
CHINA	1.50	12.50	15.50	11.66	yes	
DENMARK	11.00	11.50	10.07	11.50		yes
FINLAND	1.45	2.00	1.51	3.40	yes	
FRANCE	80.50	82.00	80.50	81.50	yes	
GERMANY	43.20	42.80	56.00	56.00	yes	
ICELAND	7.00	4.50	1.50	1.50		yes
INDIA	10.00	10.00	10.00	15.00	yes	
ITALY	12.00	11.00	13.00	13.00	yes	
KOREA	5.00	2.50	4.50	4.70	yes	
NETHERLANDS	15.47	7.25	6.50	6.60		yes
NEW ZEALAND	9.30	9.30	9.30	9.30	yes	
NORWAY	21.50	21.50	19.00	19.00		yes
PAKISTAN	1.60	1.60				
SOUTH AFRICA	38.00	38.00	28.70	28.80		yes

SPAIN	1.25	1.70	2.60	2.82	yes	
SWEDEN	2.50	2.50	2.00	2.00		yes
TUNISIA	3.00	3.00				
UND ARAB EMTS	3.50	6.00	6.00	6.00	yes	
UK	50.00	50.00	57.00	57.00	yes	
US	655.00	685.00	695.00	790.00	yes	
OTHER	3.00	3.00	2.00	2.00		yes
TOTAL	1118	1136	1145	1237		

Detailed information on the 2002 Global Agreement is given in *Annex III*.

4. REPORT ON THE DEVELOPMENT OF CLS/SERVICE ARGOS

4.1 The reports on 2002-2003 operations and on system improvements and development projects had already been presented to the preceding DBCP session, where most of the meeting attendees were present. A brief re-capitulation of the main issues identified in these reports was made for the benefit of participants not present at the DBCP session by Mr Bill Woodward of Service Argos Inc. The full reports are attached as *Annexes IV and V*, respectively, and updated appropriately.

5. REVIEW OF USER'S REQUIREMENTS

5.1 The meeting noted with interest a report from the chairman of the DBCP on the main results of the nineteenth session of the panel (including the technical workshop), which had taken place in Angra from 20 to 24 October 2003. These included in particular the following specific recommendation to the JTA:

- *The panel had agreed that it would be desirable to employ data compression to achieve significant reduction in (BUFR) message length (on the GTS). It therefore requested the chairman to bring a recommendation to the Argos JTA to enhance the current GTS BUFR encoder to include data compression.*

5.2 The JTA noted that such a development should be relatively inexpensive and simple to implement. It therefore supported the recommendation, and requested CLS/Service to include data compression in the new GTS BUFR encoder as an Argos development, subject to confirmation of the limited cost of implementation.

5.3 With regard to the specific user requirements raised at JTA-XXII, the meeting noted the following actions or considerations:

(i) *GTS subsystem to relay data from other sources*: This requirement had been implemented by CLS, by way of an ftp facility, and was now available to users, though it had, to date, not been used;

(ii) *The status of the proposal for connecting Argos to the Brazilian satellites*: Trials had proved such a connection to be feasible, and an agreement was now under development with INPE. Ongoing studies were being undertaken regarding implementation, including the possible development of a low-cost antenna for use outside Brazil. It was noted that a clear demonstration of user requirements for downloads outside Brazil was needed before any Argos system development was undertaken along these lines. The meeting recognized that it should consider possibilities for future cost recovery for such a development, and agreed to consider the issue again at the 2004 meeting, based on a further report by CLS;

(iii) *The consequences of the decision taken regarding the phasing-out of the additional charge for class A/B locations for animal trackers*: This requirement had been implemented successfully, and no further consideration was needed;

(iv) *The results of CLS experience regarding possible free access to the ADEOS-II satellite, including cost impacts*: Such free access had proven to be a workable solution and had been implemented;

(v) *As necessary, a possible new user category, to accommodate "single readout, post-collection archival tags", based on a specific proposal from CLS/Service Argos and the USA*: This was no longer a requirement and should therefore be dropped;

(vi) *The status of the proposal regarding the reactivation of Lannion ground station*: Further information on this issue is given in para. 5.4 below;

(vii) *The ongoing implementation of the streamlined System Use Agreement (SUA) approval process*: Further information on this issue is given in paras. 5.1.1 - 5.1.4 below.

5.4 The NOAA/NESDIS representative, Rob Bassett, recalled a presentation to the DBCP concerning NOAA "blind" orbit data latency. He noted that the Argos Operations Committee (OPSCOM) had received letters from the chairmen of the Data Buoy Cooperation Panel (DBCP) and the Joint Tariff Agreement (JTA). The letters outlined the significant impact of the Argos data delay caused by the Polar-orbiting Operational Environmental Satellite (POES) "blind" orbits. As requested during DBCP XVIII, CLS and Météo France investigated the Lannion site and confirmed that Lannion retained a limited capability to recover "blind" orbit data and was restricted to smaller data sets (Stored TIROS Information Processor [STIP]) at 2 of 3 download frequencies (1698 MHz and 1707 MHz), however, not on a 7-day, 24-hour basis. NOAA/NESDIS reviewed the DBCP concerns, coordinated similar requirements from other users and evaluated the cost/benefits of the Lannion and Barrow sites. A consolidated requirement for POES "blind" orbit data was presented to NESDIS management for decision and was approved for implementation at the Barrow site. Barrow was installing communication and equipment upgrades to become fully operational by early 2004. The "blind" orbit data requirement was subject to POES operational priorities and the availability of satellite recorder time. Currently there was limited recorder time on the operational satellites (NOAA 16 & 17) due to recorder failures and other higher priority missions. Therefore there was not sufficient recorder time (on the NOAA operational satellites) for any "blind orbit" downloads anywhere (Lannion or Barrow) until some of the higher priority requirements were discontinued or the larger data sets [Local Area Coverage (LAC) or Global Area Coverage (GAC)] could be partially downloaded, thereby making available some recorder time to playback the "blind" orbit data. This situation was not likely to change for the operational satellites until the launch of NOAA-18 (2004), which would have a full suite of operational, digital recorders. Nonetheless, the DBCP and the JTA members had stated a request for "blind" orbit data from the backup satellites as available. Mr. Bassett stated that NOAA/NESDIS would continually explore opportunities to download "blind" orbit data at the Barrow site from the backup satellites in accordance with operational priorities.

Argos System Use Agreement

5.5 The meeting noted with interest a presentation by Mr Rob Bassett, the NOAA/NESDIS representative, which had also been made to the DBCP, concerning the electronic processing of the Argos System Use Agreement (SUA). This new management tool was web based and compatible with CLS web services that provided the capability to electronically submit the Argos SUA. The goal of this effort was to streamline the SUA review process amongst the Argos Participating Agencies (NOAA, CNES, JAXA) and reduce processing time from 14 to 7 days.

5.6 Mr Bassett also presented an overview of the recent changes to the Argos System Use (SU) policy and its implications. He explained that US regulation changes were the result of

11 September 2001 events and created a new sub-category of non-environmental use, namely "Sensitive Use". The "Sensitive Use" sub-category consisted of Homeland Security, National Security, Law Enforcement, and Humanitarian Support applications. In addition, the policy removed the previous restriction on non-environmental use and stated that system usage would remain "predominantly environmental". The Argos Participating Agencies (NOAA, CNES, JAXA) would be granted the full, open and timely use of all environmental data and the international distribution of such data was encouraged.

5.7 The meeting noted that the Argos OPSCOM reviewed and approved the financial liability language proposed at JTA XXII. Mr Bassett presented the proposed wording for the revised SUA, which was reviewed by the JTA members, discussed and modified as follows:

"g) [Users will] be liable for all charges for system use levied by CLS/Service Argos, Inc. (SAI) and the Representative of Country (for Joint Tariff Agreement users). These charges will continue to accrue on a platform by platform basis for as long as platform transmissions are received by the satellites comprising the Argos system. Users are urged to ensure that their platforms do not continue to transmit beyond the termination of their programs. Users who are unable to meet this requirement MUST contact CLS/SAI to avoid further charges for such platforms. Following user notification, CLS/SAI will place such platforms in an 'Inactive' status and terminate data distribution. No additional charges will be charged if, and only if, 'Inactive' status is declared for platforms which continue to transmit beyond the program termination.'

5.8 Mr Steve Auer, the US ROC, recommended that the Users would be reminded regularly of their financial liability and of their need to take action through contacting CLS/SAI to declare 'inactive status' when appropriate. The meeting requested that CLS/SAI include that notification in all future quarterly invoices to Users.

5.9 Mr Bassett highlighted some of the implications of these policy changes on the administration and management of the Argos system. Specific considerations included system capacity, frequency use/allocation, defining/measuring "predominantly environmental" use and non-JTA usage growth. He stated that the Argos OPSCOM was exploring these considerations and their impact on the Argos system. The meeting requested that additional information regarding the implications of that new policy on the JTA should be sought from the OPSCOM.

6. REVIEW OF THE STRUCTURE OF THE TARIFF AGREEMENT AND RELATED MATTERS

6.1 In line with its long-standing request, the meeting was presented by Mr C. Vassal with details of the finalized Argos operating costs for 2002 as well as of the *amortization* and *promotion and marketing* items for the same year. These are given in *Annex VI.* The meeting acknowledged the information given, and noted the final 2002 figures of 6.00 M€ for personnel-related expenses and 4.58 M€ for other expenses, for a total of 10.58 M€. It further noted with appreciation the detailed breakdown of such costs for 2002, as well as the evolution of these figures over previous years, presented for comparison.

6.2 With regard to the specific action items identified by JTA-XX, the meeting noted:

(i) *The operation of the basic principles adopted by JTA-XVIII (see the summary report of JTA-XVIII, paragraph 20) and modified by subsequent meetings, as well as the operation of the five-year plan (FYP) adopted by JTA-XIX to address the Argos operating deficit and accumulated debt (see the final report of JTA-XXII, section 6 and Annex VII)*: Discussion on this item is recorded in para. 6.3 below;

(ii) *The phasing out of the unused ID charges:* The meeting agreed not to take any action on this issue until the end of the FYP, and to consider it again at JTA-XXIV;

(iii) *A proposed CLS downlink tariff policy and possible free access to the ADEOS-II satellite*: Free access to ADEOS-II had been implemented;

(iv) *The likely effects of factoring the other charges levied by CLS on ROCs into the standard PTT charge*: Discussion on this issue is also recorded below in para. 6.3;

(v) *The possibility of changing PTT certification requirements to force better management and use of the available bandwidth*: Consideration was still being given to this issue, but action at this stage was considered premature;

(vi) *The modification to the "General Conditions of Agreement" made in 2002 regarding the rule concerning "excess use":* No proposals were made to change this modification.

6.3 The meeting reviewed carefully a report on the operation of the Five-Year Plan (FYP) for Argos financing adopted at JTA-XIX. It was pleased to note that the plan was very much on track to achieve its primary objective of eliminating the JTA share of the accumulated Argos debt by the end of 2004, and that current projections showed a potential surplus at that time. The meeting agreed that such a surplus was undesirable, and that the FYP should finish as close as possible to a zero balance. In this context, it recognized that there was thus some potential for introducing a reduced tariff and other user charges into the 2004 agreement. To this end, the meeting reviewed a number of simulations, prepared by CLS, of the effect on the plan of various scenarios, including removal of the administration fee and supplementary charges (6.2(iv) above) as well as different reductions in the standard PTT charge. The meeting agreed that it was very important, wherever possible, to reduce the standard PTT charge as much as possible, as this would encourage and assist the deployment of more platforms. In this respect, the meeting received with appreciation the offer of the USA to increase their bid to the extent needed to achieve a 5% reduction in the standard PTT charge. After considerable discussion, the meeting agreed to reduce the standard PTT charge to 3850 € (approximately a 5% reduction over 2003), but at the same time retain the administration and supplementary charges until the end of the FYP. Such a reduction would also have the effect of reducing the projected surplus under the plan at the end of 2004 to the desired small value. The revised plan, including the standard tariff reduction for 2004, is shown in *Annex VII*.

6.4 The meeting noted a number of other possible modifications to the agreement. Of these, it agreed to set the charge for inactive status to zero in 2004, recognizing that this charge was probably more expensive for CLS to administer than the income it generated. However, it decided not to implement the other proposals during the remainder of the FYP, but to take them into consideration in its overall review and revision of the agreement for 2005 onwards (agenda item 8).

6.5 The meeting recognized the value to participants of the regular reporting procedures implemented in 1999. It therefore agreed that this reporting should continue in 2004, to include:

(i) **On 15 February each year**: the actual JTA activity for the previous year (in PTT-years); the final participation in the agreement for the current year (numbers committed on 15 January); a brief commentary by the chairman;

(ii) **On 15 July each year**: a projection of activity for the current year, based on actual activity during the period 1 January to 30 June; a brief commentary by the chairman.

The meeting thanked CLS/Argos for making available some details of the JTA and non-JTA activity in terms of active IDs and revenue, and requested that this information be included regularly in the future in its report to each JTA meeting.

7. TERMS AND CONDITIONS OF THE 2004 GLOBAL AGREEMENT

7.1 On the basis of the information available and of statements made by the representatives of participating countries, the numbers of PTT-years likely to be purchased by each country in 2004 were estimated as follows:

COUNTRIES	**PTT-year**
AUSTRALIA	42.00
AUSTRIA	2.33
BRAZIL	6.00
CANADA	69.00
CHINA ?	12.00
DENMARK ?	6.00
FINLAND	1.50
FRANCE	80.50
GERMANY	56.00
INDIA	18.00
ITALY	13.00
KOREA (REPUBLIC OF)	6.50
NETHERLANDS	6.60
NEW ZEALAND	9.30
NORWAY	19.00
SOUTH AFRICA	28.80
SPAIN	5.80
SWEDEN	3.60
UNITED ARAB EMIRATES	8.00
UNITED KINGDOM	51.00
USA	940.00
OTHERS ?	1.00
TOTAL	**1,385.93**

[When the name of a country is followed by a question mark, this means that the figure is hypothetical.]

7.2 The meeting recalled that it had been the practice for several years to consider the final total of PTT-years under the Agreement for any calendar year as being the sum of the numbers committed by countries by 15 January of that year. In this case, the above total of (roughly) 1386 was regarded as an approximation only.

7.3 The principles agreed upon at the twenty-second meeting, as well as those established under agenda items 5 and 6 above, were used to agree on the terms and conditions for the 2004 Global Agreement. Eventually, and also taking into account a few editorial amendments, the following modifications were introduced into the 2004 Terms and Conditions, as compared to those for 2003:

(i) 2003 is replaced by 2004, 365 days by 366 days, respectively;

(ii) Under "**USER CHARGES PER PLATFORM YEAR**", in the table of Summary of services and tariffs to users under the Global Agreement, the Tariff for Inactive status will be **0**;

(iii) Under "**USER CHARGES PER PLATFORM YEAR**", the second sentence will read: "CLS agrees to charge those authorized users a rate of X = **3,850 Euro** per platform-year for services defined in category (1), a rate as defined below under conditions for limited use service (paragraph 3) for services defined in category (1a), and a rate of **X/2** for services in category (2).";

(iv) Under "**CONDITIONS FOR INACTIVE STATUS**", the first item will read: "*Inactive Status will apply if, and only if, Inactive Status is declared by the signatory of the System Use Agreement for platforms which continue to transmit beyond the programme termination. In that case, further charges will no longer be levied*;"

(v) Under "**ACTIVE PLATFORM FEE**", the first item will read: "A monthly fee of **7.62 Euros** is applied …";

(vi) Under "**GENERAL CONDITIONS OF AGREEMENT**", item (5), the first sentence will read: " (5) The terms of this Agreement are based on a planned minimum purchase of **1,386 platform-years** by all participants in the Global Agreement for the year **2004.**";

The Terms and Conditions for the Global Agreement for 2004 are given in *Annex VIII*.

8. TERMS AND CONDITIONS OF THE 2005 GLOBAL AGREEMENT

8.1 As noted under agenda item 6, the meeting agreed that the end of the FYP in 2004 provided the ideal stimulus to undertake a thorough review and revision of the JTA, in order in particular to simplify it and reduce the number and complexity of user categories, while at the same time preserving its basic principles. Such a revised tariff structure would then be applicable from 2005 onwards. As the first step in this process, the meeting agreed the following basic aims and principles for the JTA:

(i) The benefits of JTA participation should be shared equally amongst all participants (Users).

(ii) The revenue collected from Users should meet the costs of providing the service.

(iii) Developments required by Users should be funded by Users.

(iv) Costs of developments not of benefit (or of marginal benefit) and not driven by User requirements should not fall on Users.

(v) There should be a clear division between a basic (funded) service and other (e.g. value added) services.

(vi) The Tariff structure should be simplified to reduce the number of service categories.

(vii) System developments should be fully sponsored and those affecting Users agreed in advance.

8.2 In addition, the meeting agreed that such aims and principles would entail a number of constraints and consequences:

(i) A clear statement of the cost of User participation should be made annually, with an annual (budget) forecast including the impact of developments.

(ii) The Tariff should be designed to meet the identified costs and an allowance made for agreed development share and contingencies.

(iii) The base line for 2005 participation was suggested as the actual costs of the JTA for 2004.

(iv) The transition to the new tariff agreement in 2005 should be as seamless as possible.

8.3 The meeting recognized that the development and implementation of such a revised JTA would require two related and almost-parallel processes:

- CLS would determine the portion of Argos costs to be attributed to the JTA, for approval by the OPSCOM (target: February 2004 for draft proposal, June 2004 for OPSCOM approval);

- The JTA and CLS would determine how to divide this among Users on the basis of the agreed principles, for endorsement by the OPSCOM (target: June 2004 for draft proposal and August 2004 for final proposal to be circulated to JTA participants).

To carry its part of the process forward, the meeting agreed to establish a small intersessional Working Group on a Revised JTA, comprising the JTA chair, Christophe Vassal (CLS), Dave Benner and Rob Basset (OPSCOM), Steve Auer, Ken Jarrott, David Meldrum (DBCP), and a representative of the biological user community (possibly Oystein Wiig). This group, convened jointly by the JTA chairman and Christophe Vassal, was to prepare a first draft of the revised JTA for review by the OPSCOM at its June 2004 session. This first draft would, at the same time, be distributed to JTA participants for information, on the understanding that it had not yet been seen by the OPSCOM. Following review, revision and agreement by the OPSCOM, the second revised version would be distributed to JTA participants by September 2004, so that it could be thoroughly scrutinized by Users prior to its consideration for adoption at JTA-XXIV in late October 2004, for application from 2005 onwards.

9. FUTURE PLANS AND PROGRAMMES

9.1 Written and oral reports on future plans and programmes for the use of the Argos System in 2004 were presented to the meeting by Argentina, Australia, Brazil, Canada, Chile, Finland, France, Netherlands, New Zealand, Republic of Korea, South Africa, Turkey, United Kingdom, and USA. Following normal practice, these reports, as well as those received before 15 November 2003, are given in *Annex IX*.

10. ELECTION OF THE CHAIRMAN

10.1 Under this item, the meeting firstly agreed that its practice for a number of years now, of electing an “independent” chairman, and of funding his/her work on behalf of JTA participants through the JTA, had proven very successful, and should therefore be continued for the coming year. It recognized that, during 2003-04, considerably more work would be required of the chairman than in past years, particularly concerning preparation of the draft new JTA applicable from 2005 onwards. It therefore agreed that the funds provided by the JTA for the support of the chairman during this period should be increased from USD 10,000 to USD 15,000, and requested WMO and CLS to take the necessary action to effect this decision.

10.2 The meeting re-elected Mr Derek Painting as its chairman, to hold office until the end of JTA-XXIV.

11. DATE AND PLACE OF THE NEXT MEETING

11.1 In line with the agreement of the preceding nineteenth session of the Data Buoy Cooperation Panel, the meeting accepted the kind offer of India that the twenty-fourth meeting on the Argos Joint Tariff Agreement will take place in Chennai, India, from 25-27 October 2004, hosted by the National Institute of Ocean Technology. It will thus follow immediately after the twentieth session of the DBCP. It was foreshadowed that the 2005 JTA meeting might take place in South Africa, as usual following the DBCP session.

12. CLOSURE OF THE MEETING

12.1 In closing the meeting, the chairman thanked the Secretariat for its assistance during the meeting. On behalf of all the participants, he further thanked the local organizing committee for its success in meeting the various kinds of requirements they had been faced with, as well as the staff of the Portogalo Suites Hotel for their kindness and efficiency. He concluded in thanking the participants for their good work and spirit of cooperation.

12.2 The twenty-third meeting on the Argos Joint Tariff Agreement closed at 10.30 hours on Wednesday, 29 October 2003.

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AGENDA

1. ORGANIZATION OF THE MEETING

1.1 OPENING OF THE MEETING
1.2 ADOPTION OF THE AGENDA
1.3 WORKING ARRANGEMENTS

2. REPORT OF THE CHAIRMAN OF THE JTA

3. REPORT ON THE 2003 GLOBAL AGREEMENT

4. REPORT ON THE DEVELOPMENT OF CLS/SERVICE ARGOS

5. REVIEW OF USER'S REQUIREMENTS

6. REVIEW OF THE STRUCTURE OF THE TARIFF AGREEMENT AND RELATED MATTERS

7. TERMS AND CONDITIONS OF THE 2004 GLOBAL AGREEMENT

8. TERMS AND CONDITIONS OF THE 2005 GLOBAL AGREEMENT

9. FUTURE PLANS AND PROGRAMMES

10. ELECTION OF THE CHAIRMAN

11. DATE AND PLACE OF THE NEXT MEETING

12. CLOSURE OF THE MEETING

REPORT ON THE 2003 AGREEMENT

1. CONTRACTED PARTICIPATION FOR 2003

COUNTRIES	PTT-year
AUSTRALIA	42.00
AUSTRIA	3.40
BRASIL	6.00
CANADA	64.00
CHINA	11.66
DENMARK	11.50
FINLAND	3.40
FRANCE	81.50
GERMANY	56.00
ICELAND	1.50
INDIA	15.00
ITALY	13.00
KOREA	4.70
NETHERLANDS	6.60
NEW ZEALAND	9.30
NORWAY	19.00
SOUTH AFRICA	28.80
SPAIN	2.82
SWEDEN	2.00
TAIWAN	2.00
UND ARAB EMTS	6.00
UNITED KINGDOM	57.00
USA	790.00
TOTAL	**1237.18**

Table 1 - The numbers contracted by each country for year 2003

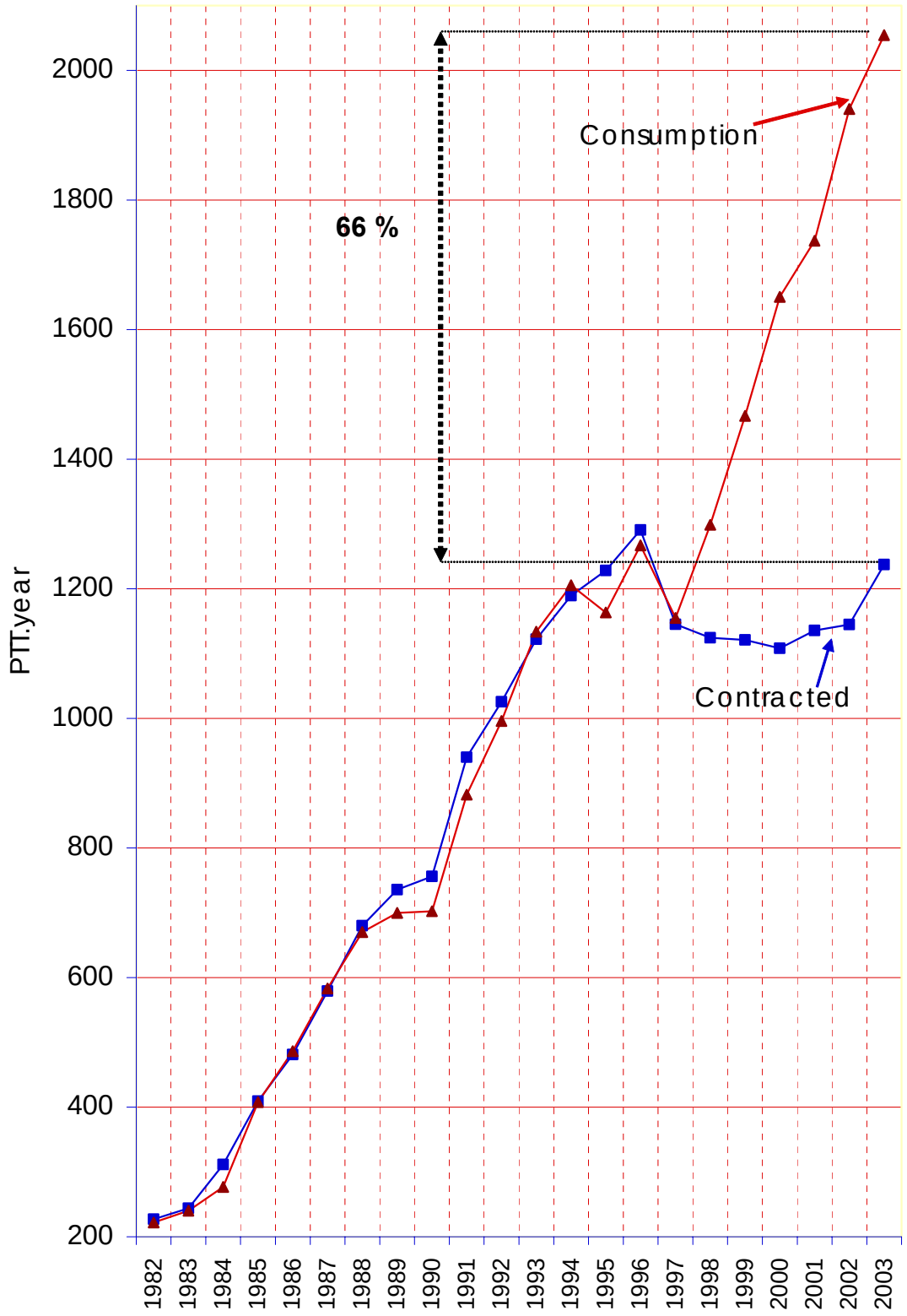
The total number contracted is higher than the estimated number recorded at the JTA-XXII meeting, 1149.61 PTT-year.

2. PROJECTED 2003 CONSUMPTION BASED ON ACTUAL USE AT END JULY

COUNTRIES	PTT-year
AUSTRALIA	60.02
AUSTRIA	2.14
BRASIL	9.65
CANADA	126.65
CHINA	19.94
DENMARK	10.99
FINLAND	1.75
FRANCE	92.14
GERMANY	53.63
ICELAND	0
INDIA	12.63
ITALY	20.54
KOREA	6.9
NETHERLANDS	5.93
NEW ZEALAND	12.51
NORWAY	17.11
SOUTH AFRICA	32.08
SPAIN	5.74
SWEDEN	1.34
TAIWAN	1.13
UND ARAB EMTS	7.04
UNITED KINGDOM	92.34
USA	1461.98
TOTAL	**2054.18**

Table 2 - The projected consumption for 2003

This is an extrapolation based on the actual consumptions till July 2003.



Curve 2.1: PTT-year contracted an consumption since 1982

The global consumption keeps growing as a result of the bonus policy. The average level of bonus used also increases and reaches 66% (against 62.5% last year).

3. EVOLUTION OF THE AGREEMENT FOR THE "BONUS YEARS" (1998-2002)

3.1 Principles of the bonus

- **JTA XVII (La Réunion, October 1997)**

Agreement reached at the seventeenth JTA meeting (La Réunion, October 1997, paragraph 5.5 of the final report):
« the basic principles for the 1998 and 1999 JTAs at least should be:

(i) that each ROC had essentially a fixed amount of money to pay to Argos for 1998, the total of which would most likely cover Argos operating costs for that year, based on an unchanged cost per PTT year,

(ii) that for this amount each ROC would be allowed a certain percentage increase (bonus) in PTT year usage in 1998, nominally 35%, without further charge or penalty,

(iii) that this increase could be compounded over two years, provided the sum guaranteed to be paid to Argos did not decrease in 1999 from that guaranteed at JTA-XVII,

(iv) that if the PTT years finally agreed on 15 January 1998 and/or 1999 by each ROC amounted to less than the PTT/years confirmed and recorded at the present meeting by the ROC, then the bonus would no longer apply to that country.

- **JTA XIX (Wellington, November 1999)**

The JTA - XIX meeting:

a) reconfirmed the decision that the total bonus should continue to apply for those countries with signed PTT-years in 2000 at least equal to the base figure in the JTA-XVII bid.

b) As an exception for 2000 only, for those ROCs that had not been able to take advantage of the bonus since its inception in 1998, it was decided to allow a bonus of 35% over the signed figure in 2000, should this figure exceed the figure in the 1999 agreement.

- **JTA XX (Victoria, October 2000)**

The bonus policy was reconfirmed and expanded as below:

The meeting agreed to :

a) continue the bonus system in 2001, with a continuing upper bonus limit of 82% to apply to those countries whose contracted number equal or exceeds the JTA-XVII bid,
b) make the bonus available also to those countries whose signed PTT-years in 2001 is at least as great as those confirmed at this meeting and also those signed in 2000, initially at the 35% level.

- **JTA XXI (Perth, October 2001)**

The bonus policy was reconfirmed and the related conditions formulated as below:

*a) Where the number of platform-years contracted by the country continues to equal or exceed the estimate confirmed and recorded at the **JTA-XVII** meeting**,** the contracted number will be increased by 82% for the purpose of calculating any excess use.*

b) For countries not meeting the requirement in (a) above, but having benefited from a 35% bonus during the year preceding immediately that of these present Terms and Conditions, and whose number of platform-years contracted equals or exceeds the number signed under the preceding Terms and Conditions, the contracted number will be increased by 82% for the purpose of calculating any excess use.

*c) For countries not meeting the requirements in (a) and (b) above, but whose number of platform-years contracted equals or exceeds the number signed under the preceding Terms and Conditions**,** the contracted number will be increased by 35% for the purpose of calculating any excess.*

- **JTA XXII (Trois Ilets, La Matinique, October 2002)**

The bonus policy, as expressed above, was reconfirmed. The rule on the excess use was amended in the “Terms and Conditions” as follows:

"*Each participating country will be charged for excess use over and above the contracted number of PTT-years (inflated by the above bonus as appropriate):*

a) at the tariff defined under "USER CHARGES PER PLATFORM-YEAR" divided by 1.35 (one point thirty five), if the participating country benefits of a 82% bonus during the year;

b) at the tariff defined under "USER CHARGES PER PLATFORM-YEAR", in all other cases.”

3.2 Application of the bonus

3.2.1 Situation of Agreements per country

According to basic principles in § 3.1 the "bonus situation", is given in the table below:

Countries	Agreed at JTA XVII PTT-Yrs	Contracted for 2001 PTT-Yrs	Contracted for 2002 PTT-Yrs	Contracted for 2003 PTT-Yrs	Bonus for 2003 82%	Bonus for 2003 35%
AUSTRALIA	53.00	42.00	42.00	42.00	yes	
AUSTRIA			2.00	3.40		yes
BRAZIL	12.00	12.00	10.00	6.00		
BURKINA FASO	13.00	10.00	6.00			
CANADA	64.00	64.00	64.00	64.00	yes	
CHINA	1.50	12.50	15.50	11.66	yes	
DENMARK	11.00	11.50	10.07	11.50		yes
FINLAND	1.45	2.00	1.51	3.40	yes	
FRANCE	80.50	82.00	80.50	81.50	yes	
GERMANY	43.20	42.80	56.00	56.00	yes	
ICELAND	7.00	4.50	1.50	1.50		yes
INDIA	10.00	10.00	10.00	15.00	yes	
ITALY	12.00	11.00	13.00	13.00	yes	
KOREA	5.00	2.50	4.50	4.70	yes	
NETHERLANDS	15.47	7.25	6.50	6.60		yes
NEW ZEALAND	9.30	9.30	9.30	9.30	yes	
NORWAY	21.50	21.50	19.00	19.00		yes
PAKISTAN	1.60	1.60				
SOUTH AFRICA	38.00	38.00	28.70	28.80		yes
SPAIN	1.25	1.70	2.60	2.82	yes	
SWEDEN	2.50	2.50	2.00	2.00		yes
TAIWAN	3.00	3.00	2.00	2.00		yes
TUNISIA	3.00	3.00				
UND ARAB EMTS	3.50	6.00	6.00	6.00	yes	
UK	50.00	50.00	57.00	57.00	yes	
US	655.00	685.00	695.00	790.00	yes	
TOTAL	1118	1136	1145	1237		

Table 3.2.1: Bonus situation. For 2003, all countries but one (22) were entitled to bonus.

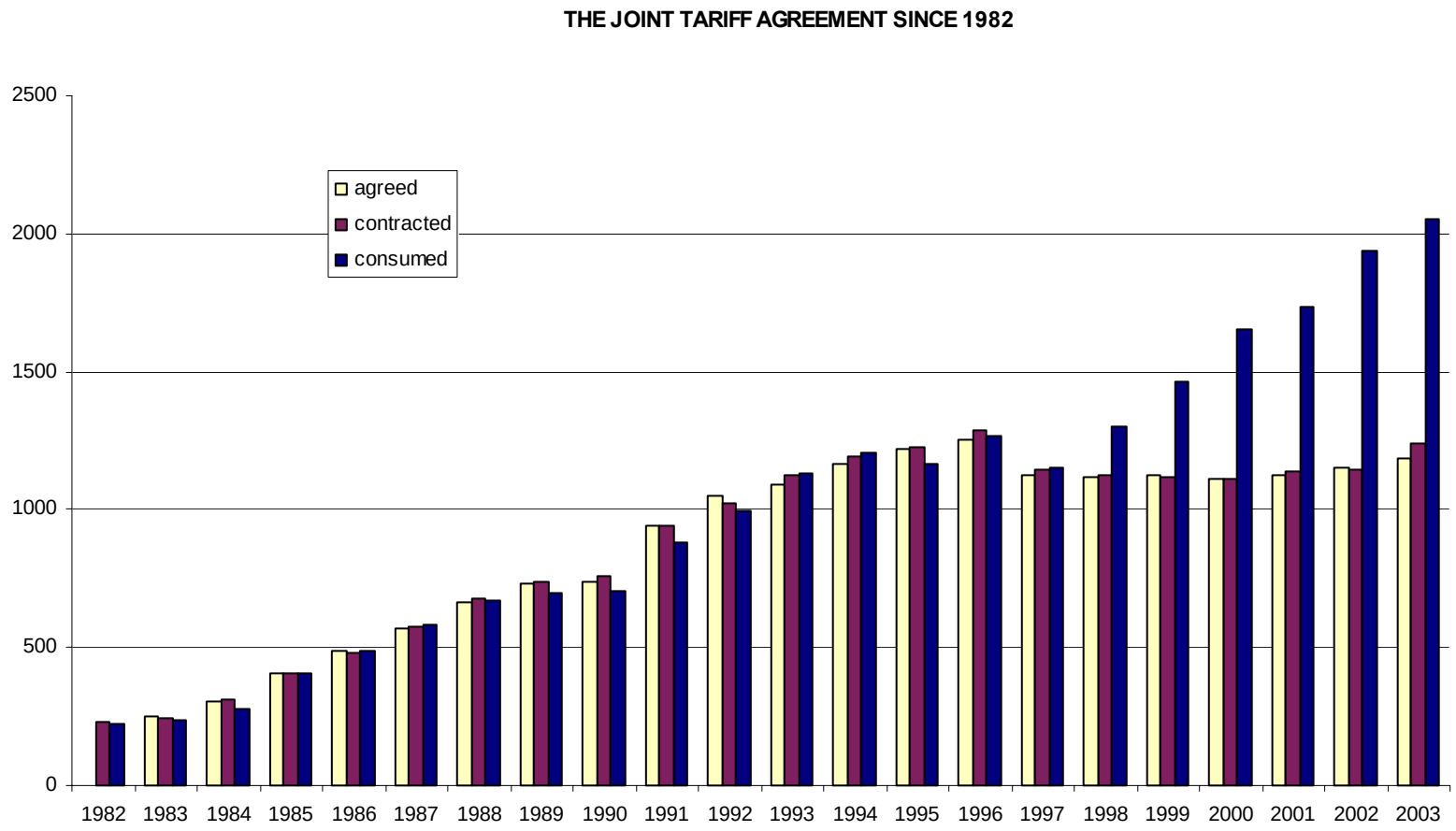
3.2.2 Contracted versus consumed PTT-Yrs by country

- In 2002, the total PTT-year consumption was 70 % (795.7 PTT-years) higher than the total signed, 1144.7 PTT-years.
- The July projection for 2003 is 66 % (817 PTT-years) higher than the total signed, 1237.2 PTT-years.
- In July 2003, the projected consumptions of 13 countries (among 22 entitled to bonus) exceed their signed amount.

		Year 2002				Year 2003			
Countries	Agreed at JTA XVII -1997 PTT-Yrs	Contracted for 2002 PTT-Yrs	bonus	Consumed in 2002 PTT-Yrs	Delta %	Contracted for 2003 PTT-Yrs	bonus	Projected for 2003 July PTT-Yrs	Delta %
AUSTRALIA	53.0	42.0	yes	54.1	29%	42.0	yes	60.0	43%
AUSTRIA		2.0	yes	1.5	-26%	3.4	yes	2.1	-37%
BRAZIL	12.0	10.0	no	12.3	23%	6.0	no	9.7	61%
BURKINA FASO	14.0	6.0	no	4.7	-22%				
CANADA	64.0	64.0	yes	94.7	48%	64.0	yes	126.7	98%
CHINA	1.5	15.5	yes	15.0	-3%	11.7	yes	19.9	71%
DENMARK	11.0	10.1	yes	11.5	14%	11.5	yes	11.0	-4%
FINLAND	1.5	1.5	yes	2.3	49%	3.4	yes	1.8	-49%
FRANCE	80.5	80.5	yes	93.6	16%	81.5	yes	92.1	13%
GERMANY	43.2	56.0	yes	62.5	12%	56.0	yes	53.6	-4%
ICELAND	7.0	1.5	yes	0.4	-75%	1.5	yes	0.0	-100%
INDIA	10.0	10.0	yes	11.2	12%	15.0	yes	12.6	-16%
ITALY	12.0	13.0	yes	13.2	1%	13.0	yes	20.5	58%
KOREA	5.0	4.5	yes	6.6	46%	4.7	yes	6.9	47%
NETHERLANDS	15.5	6.5	yes	5.7	-12%	6.6	yes	5.9	-10%
NEW ZEALAND	9.3	9.3	yes	11.5	24%	9.3	yes	12.5	35%
NORWAY	21.5	19.0	yes	13.5	-29%	19.0	yes	17.1	-10%
PAKISTAN	1.6	0.0		0.0					
SOUTH AFRICA	38.0	28.7	yes	28.6	0%	28.8	yes	32.1	11%
SPAIN	1.3	2.6	yes	3.0	13%	2.8	yes	5.7	104%
SWEDEN	2.5	2.0	yes	2.2	8%	2.0	yes	1.3	-33%
TAIWAN	3.0	2.0	yes	0.0	-99%	2.0	yes	1.1	-44%
TUNISIA	3.0	0.0							
UND ARAB EMTS	3.5	6.0	yes	8.3	38%	6.0	yes	7.0	17%
UK	50.0	57.0	yes	82.6	45%	57.0	yes	92.3	62%
US	655.0	695.0	yes	1401.8	102%	790.0	yes	1462.0	85%
TOTAL	1118.8	1144.7		1940.4	70%	1237.2		2054.2	66%

4. THE JOINT TARIFF AGREEMENT FROM 1982 TO 2003

Table 4.1 Overview



THE JOINT TARIFF AGREEMENT FROM 1982 TO 2003

	1982		1983		1984		1985		1986		1987		1988		1989	
			SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.
AUSTRALIA	11.0	11.0	9.0	7.8	17.0	8.7	15.0	15.0	22.0	22.6	30.0	27.0	25.0	19.1	19.0	13.9
AUSTRIA																
BRAZIL																
BURKINA FASO				9.8	1.5	0.9	1.5	1.2	1.5	1.4	2.0	2.3	2.0	3.5	3.5	5.5
CANADA	10.0	10.0	10.0		12.0	15.0	32.0	34.8	40.0	27.0	31.0	40.4	44.0	43.5	49.0	38.3
CHINA											6.0	3.5	7.0	4.4	5.0	3.2
DENMARK			1.0	3.0	3.0	4.8	6.0	5.9	6.0	6.4	6.0	6.8	7.0	7.3	10.0	11.6
FIJI																
FINLAND																
FRANCE	25.0	25.0	35.0	24.0	45.5	33.5	44.0	39.0	55.0	51.9	56.0	45.5	58.0	43.8	66.6	59.7
GERMANY	21.0	21.0	20.0	29.4	20.0	22.0	20.0	30.9	24.0	32.7	28.0	51.0	38.0	44.2	35.0	49.9
ICELAND											1.0	0.5	1.0	0.5	1.0	0.5
INDIA																
ITALY											1.0	0.7	2.0	0.4	2.0	1.2
KOREA																
MALAYSIA																
NETHERLANDS			1.0	0.9	1.0	0.9	2.0	1.5	2.0	0.8	3.0	1.8	4.0	3.3	3.0	2.6
NEW ZEALAND					2.0	0.1	2.0	1.4	3.0	5.5	3.0	3.6	4.0	5.1	5.5	5.0
NORWAY	10.0	10.0	20.0	18.3	17.5	19.5	19.5	15.3	28.0	20.2	21.0	26.0	18.0	15.8	25.0	24.7
PAKISTAN																
PORTUGAL	0.00	1.0	1.0	1.4							0.5	0.00	2.0	0.6	2.0	2.0
SAUDI ARABIA							5.0	1.5			1.0	1.8	1.0	0.4		
SOUTH AFRICA	11.0	12.0	14.0	8.8	16.0	14.3	19.0	15.0	16.0	7.8	10.0	3.1	16.0	2.8	7.0	1.3
SPAIN																
SWEDEN																
OTHER																
THAILAND																
TUNISIA																
UN. ARAB EMIRATS																
UNITED KINGDOM	7.0				11.0	8.2	9.0	4.6	8.5	10.8	14.5	14.2	13.0	15.5	22.0	21.0
USA	132.00	132.00	133.00	137.00	165.00	149.00	234.00	242.00	275.00	299.00	365.00	355.00	438.00	460.00	480.00	460.00
TOTAL	227.00	222.00	244.00	240.00	312.00	277.00	409.00	408.00	481.00	486.00	579.00	583.00	680.00	670.00	736.00	700.00

	1990		1989		1989		1993		1994		1995		1996		1997	
	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.
AUSTRALIA	28.7	21.3	28.4	23.1	37.0	29.8	33.0	34.4	44.5	42.4	50.0	41.5	56.4	50.02	56.5	47.0
AUSTRIA																
BRAZIL	2.0	1.2	2.0	1.3	5.0	2.2	12.0	10.1	14.0	10.7	13.0	11.0	13.00	9.40	14.0	9.7
BURKINA FASO	5.0	5.2	6.5	5.3	6.5	5.8	7.5	10.9	7.5	12.8	13.0	11.6	14.00	11.86	14.0	12.3
CANADA	34.0	39.6	85.0	83.0	104.0	97.7	90.0	96.7	80.0	91.2	85.0	90.1	80.0	75.1	64.0	67.1
CHINA	5.0	5.9	6.5	5.0	5.0	3.2	3.5	3.8	3.0	4.0	3.0	2.9	3.0	3.0	1.5	1.5
DENMARK	10.0	9.8	3.0	2.8	2.8	2.3	3.5	4.9	6.5	5.2	6.2	5.6	10.0	8.1	11.8	8.6
FIJI					4.0	3.3	1.8	1.6	0.5	0.9	0.00	0.00	0.00	0.00	0.00	0.00
FINLAND					3.6	2.3	0.9	1.8	1.0	2.3	0.9	0.9	4.0	7.2	1.6	4.2
FRANCE	64.2	59.2	73.8	58.5	71.6	59.1	115.0	93.0	93.6	82.3	81.5	47.0	65.4	64.0	82.8	79.2
GERMANY	31.0	37.5	50.0	45.3	73.0	70.2	56.0	66.8	70.0	71.8	62.0	55.2	40.0	42.9	43.0	37.2
ICELAND	1.0	0.4	1.0	0.6	1.0	0.3	1.0	0.4	2.0	3.3	3.0	2.2	6.0	4.5	7.0	5.7
INDIA			8.0	1.6	8.0	5.0	8.0	2.6	8.0	6.1	8.0	6.8	8.0	8.0	10.0	6.2
ITALY	2.0	0.2	4.2	7.0	14.4	14.0	24.3	22.9	22.1	20.2	24.9	25.3	17.5	15.6	12.8	12.9
KOREA					2.3	2.1	2.3	3.2	2.7	4.9	5.5	3.4	7.5	4.2	6.5	9.2
MALAYSIA									1.4	0.3	0.8	0.00	0.8	0.00	0.00	0.00
NETHERLANDS	7.0	4.2	8.0	4.6	4.5	1.8	5.0	7.1	7.5	5.0	11.5	5.3	18.4	12.3	14.0	7.0
NEW ZEALAND	3.8	5.5	6.5	6.2	7.0	6.5	7.0	7.2	7.6	7.5	8.5	9.1	11.1	11.4	9.8	10.2
NORWAY	31.0	22.0	32.0	24.0	26.0	31.6	42.0	42.4	32.5	31.4	31.0	24.0	27.0	26.1	28.5	26.8
PAKISTAN					0.7	0.5	1.7	1.0	1.7	1.6	1.8	0.8	1.8	0.6	1.6	0.2
PORTUGAL	1.0	1.0	1.0		1.0	0.00	5.0	4.1	5.0	2.5	0.00	0.00	0.00	0.00	0.00	0.00
SAUDI ARABIA	1.3	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOUTH AFRICA	13.0	8.2	14.0	7.5	13.0	7.8	13.0	11.7	15.0	12.3	22.0	23.1	25.0	26.5	34.0	30.0
SPAIN	0.00	0.00	0.00		0.00	0.00	1.7	0.00	1.7	0.4	1.5	1.2	2.8	3.6	1.5	1.6
SWEDEN			3.0	2.1	1.0	1.2	2.0	1.4	2.0	1.3	1.0	1.0	2.0	1.8	3.0	2.2
OTHER									8.5	3.1	2.0	2.3	2.0	0.8	3.0	0.6
THAILAND											9.5	1.6	2.5	4.4	0.00	0.00
TUNISIA									2.0	2.1	2.0	2.6	2.0	2.9	3.0	3.2
UN. ARAB EMIRATS											2.5	1.8	2.5	2.24	3.0	3.0
UNITED KINGDOM	21.0	21.0	22.0	19.2	25.0	49.2	46.0	45.3	64.0	48.1	63.0	66.0	61.8	87.0	42.9	55.7
USA	495.00	460.00	585.00	585.00	600.00	600.00	643.00	661.00	685.00	732.00	715.00	721.00	805.00	784.00	675.00	714.00
TOTAL	756.00	702.00	940.00	943.00	1025.00	996.00	1122.00	1134.00	1189.00	1205.00	1228.00	1163.00	1289.00	1267.00	1145.00	1154.00

	1998		1999		2000		2001		2002		2003	
	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT.	SIG.	ACT. July
AUSTRALIA	53.0	45.5	53.0	47.94	40.50	40.30	42.00	45.13	42.00	54.11	42.00	60.02
AUSTRIA									2.00	1.48	3.40	2.14
BRAZIL	12.0	11.7	16.0	14.14	12.00	10.65	12.00	9.46	10.00	12.26	6.00	9.65
BURKINA FASO	13.0	11.8	10.8	9.17	10.80	8.87	10.00	8.11	6.00	4.67	0.00	0.00
CANADA	64.0	72.1	67.0	73.77	67.00	68.06	64.00	69.70	64.00	94.71	64.00	126.65
CHINA	1.5	1.1	3.0	2.36	2.37	4.39	12.50	5.80	15.50	15.02	11.66	19.94
DENMARK	12.4	12.3	11.0	13.82	8.05	11.78	11.50	11.29	10.07	11.45	11.50	10.99
FIJI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FINLAND	2.2	3.4	1.6	2.16	2.35	2.79	2.00	2.38	1.51	2.25	3.40	1.75
FRANCE	81.0	91.4	81.0	87.36	82.00	72.68	82.00	93.79	80.50	93.55	81.50	92.14
GERMANY	43.2	33.3	38.8	38.32	51.80	41.49	42.80	51.91	56.00	62.49	56.00	53.63
ICELAND	7.5	6.2	8.5	14.05	4.50	4.10	4.50	1.74	1.50	0.38	1.50	0.00
INDIA	10.0	8.2	10.0	10.85	10.00	11.61	10.00	11.01	10.00	11.16	15.00	12.63
ITALY	13.5	13.2	13.5	12.69	11.00	10.01	11.00	11.27	13.00	13.16	13.00	20.54
KOREA	4.0	6.1	5.0	6.56	3.00	3.47	2.50	2.38	4.50	6.58	4.70	6.90
MALAYSIA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NETHERLANDS	15.5	12.4	11.0	8.80	13.70	10.65	7.25	8.03	6.50	5.71	6.60	5.93
NEW ZEALAND	9.3	8.8	9.3	12.20	9.30	10.44	9.30	8.85	9.30	11.54	9.30	12.51
NORWAY	21.5	16.3	21.5	21.13	18.50	20.75	21.50	16.50	19.00	13.50	19.00	17.11
PAKISTAN	1.6	0.6	1.6	0.57	1.60	0.49	1.60	0.98	0.00	0.00	0.00	0.00
PORTUGAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SAUDI ARABIA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOUTH AFRICA	38.0	55.2	38.0	42.25	38.00	36.19	38.00	35.45	28.70	28.56	28.80	32.08
SPAIN	3.6	4.7	1.9	2.25	4.85	3.93	1.70	1.99	2.60	2.95	2.82	5.74
SWEDEN	3.0	4.9	3.0	5.34	3.00	3.13	2.50	3.47	2.00	2.15	2.00	1.34
OTHER	3.0	1.8	3.0	7.35	1.00	0.76	3.00	0.75	2.00	0.03	2.00	1.13
THAILAND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TUNISIA	3.0	3.5	3.0	3.10	3.00	3.29	3.00	3.05	0.00	0.00	0.00	0.00
UN. ARAB EMIRATS	3.5	4.8	4.5	4.24	5.00	5.33	6.00	8.17	6.00	8.29	6.00	7.04
UNITED KINGDOM	50.0	61.1	50.0	70.50	50.00	77.22	50.00	77.46	57.00	82.61	57.00	92.34
USA	655.00	808.00	655.00	961.00	655.00	1188.00	685.00	1191.00	695.00	1401.77	790.00	1461.98
TOTAL	1124.00	1299.00	1121.00	1467.00	1108.00	1650.00	1136.00	1680.00	1144.68	1940.38	1237.18	2054.18

REPORT ON 2002-2003 OPERATIONS

1. SPACE SEGMENT

ADEOS-2 was successfully launched on December 14th, 2002 and officially integrated in the Argos constellation on may 5th, 2003. This is the first time that an Argos instrument is on-board a satellite of the NASDA (Japanese Space Agency).

The Argos constellation now includes 7 satellites:

1.1 Basic service satellites

The NOAA satellites included in the basic service are NOAA-15 and NOAA-16, as per last year. They were chosen in order to optimize the distribution of satellite passes per day. ADEOS-2 (MIDORI-2) was added on May 5th. The basic service is then served by three satellites since this date.

1.2 Other satellites

NOAA-17 (M), NOAA-14 (J) and NOAA-12 (D) are used as secondary satellites. Global and Regional datasets they collect are delivered according to the "multi-satellite" service characteristics.
NOAA-11 (H) is providing global datasets which are also delivered through the "multi-satellite" service.
NOAA-11 is no longer delivering real-time data through the HRPT downlink since October 2001.

From **Satellite status**	Oct 99	Sep 2000	Mar 01	July 02	May 03	July 03
Commissioning		NOAA-16		NOAA-17	ADEOS-2	
Basic service	NOAA-15 NOAA-14	NOAA-15 NOAA-14	NOAA-16 NOAA-15	NOAA-16 NOAA-15	NOAA-16 NOAA-15	NOAA-16 NOAA-15 ADEOS-2
Multi-satellite service (additional satellites)	NOAA-11 NOAA-12	NOAA-11 NOAA-12	NOAA-14 NOAA-11 NOAA-12	NOAA-14 NOAA-11 NOAA-17 NOAA-12	NOAA-14 NOAA-11 NOAA-17 NOAA-12	NOAA-14 NOAA-11 NOAA-17 NOAA-12
Decommissioned	NOAA-9 NOAA-10	NOAA-9 NOAA-10	NOAA-9 NOAA-10	NOAA-9 NOAA-10	NOAA-9 NOAA-10	NOAA-9 NOAA-10

Figure 2 shows the satellite orbit plans in July 2003.

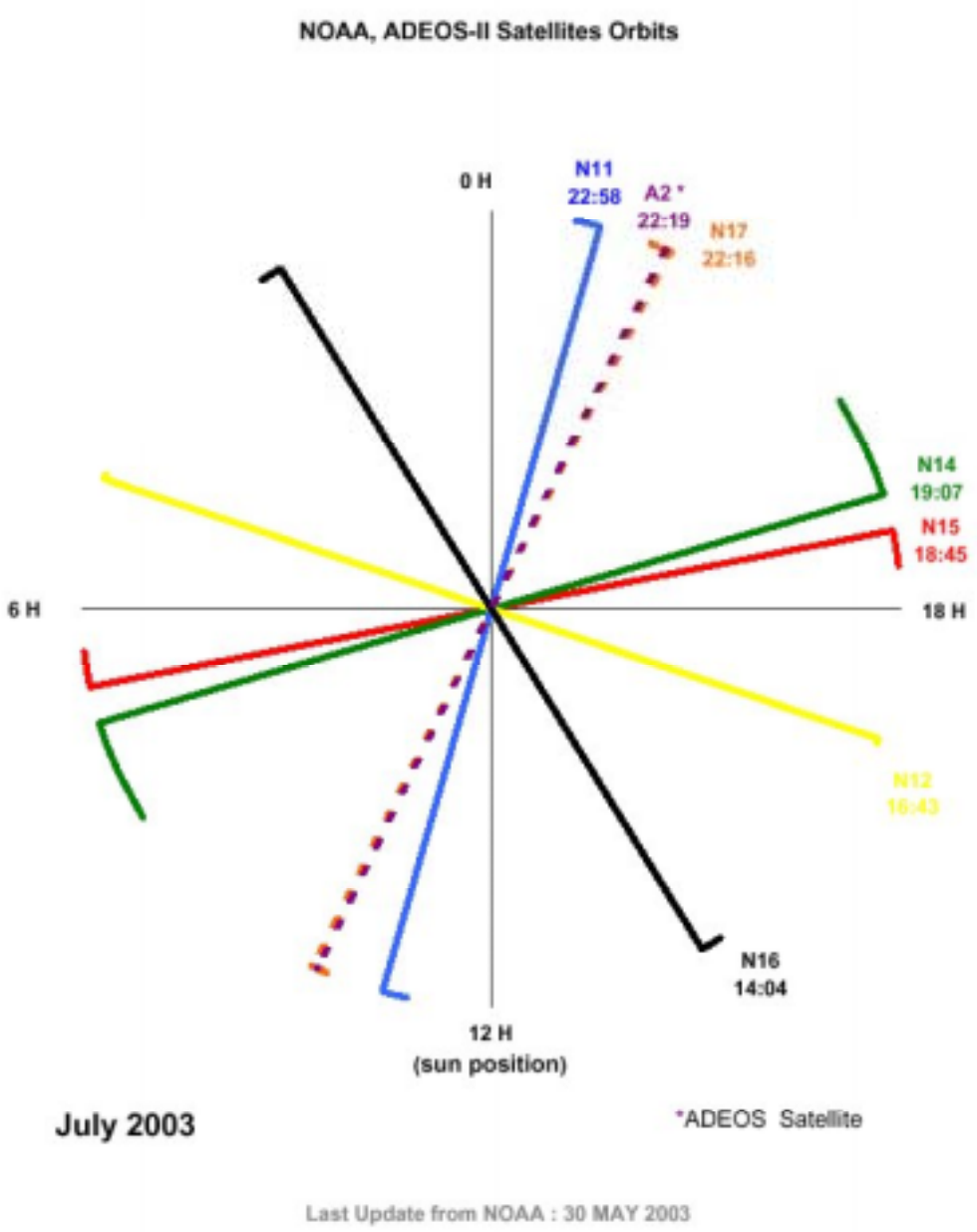


Figure 2

2. GROUND RECEIVING STATIONS

2.2 Global stations

The two global stations able to acquire the STIP telemetry are still the Fairbanks and Wallops Island stations.

The Lannion global station, which could also acquire the STIP telemetry in some conditions, is no more used since the year 2000. Despite all our efforts to convince NOAA, it seems to be difficult to restart the STIP downloads over Lannion.
The two global stations of Fairbanks and Wallops deliver the STIP telemetry from the satellites NOAA-11, NOAA-12, NOAA-14, NOAA-15, NOAA-16 and NOAA-17.

As regards NOAA-12, only two orbits per day are delivered by NOAA/NESDIS.
The STIP telemetry from NOAA-11 – the only type of telemetry available for this satellite – is delivered by group of three or four orbits.

Figure 1 shows STIP data set arrival times at the Toulouse and Largo processing centers. Ideally, one data set should be received every 100 minutes.

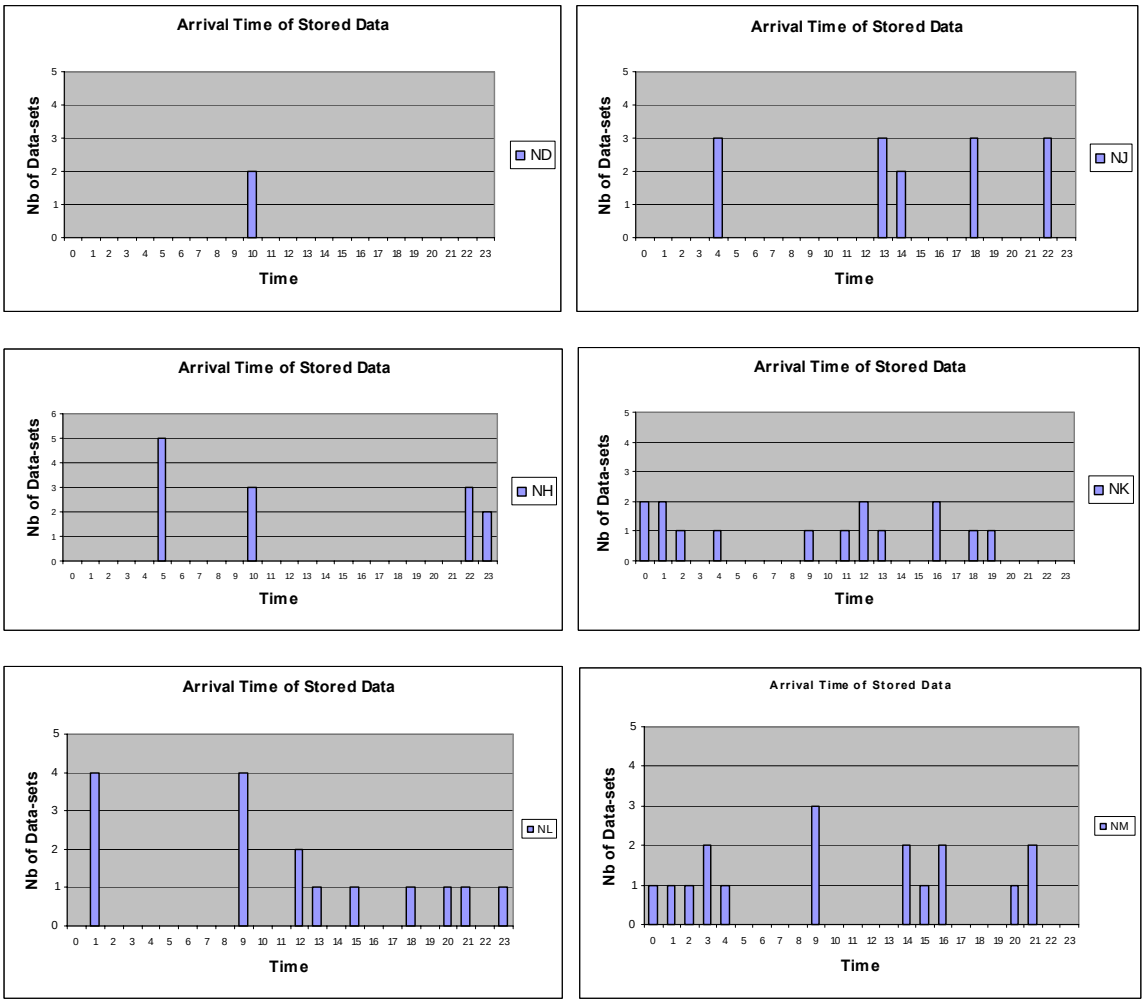


Figure 1

2.3 Regional stations

The situation is essentially the same as last year:

- The two global stations able to acquire the STIP telemetry are still the Fairbanks and Wallops Island stations. The Lannion station is no longer used since the year 2000.

- These two stations deliver the STIP telemetry from the satellites NOAA-11, NOAA-12, NOAA-14, NOAA-15 et NOAA-16 and NOAA-17.

- As regards NOAA-12, only two orbits per day are delivered by NOAA/NESDIS.

- The STIP telemetry from NOAA-11 – the only type of telemetry available for this satellite – is delivered by group of three or four orbits.

CLS and Service Argos Inc. pursued their efforts in 2002 to increase the number of receiving stations able to provide TIP data sets from the NOAA satellites. Five new stations joined the Argos network during the year. They are in Hatoyama (Japan, NASDA), Oslo (Norway, NMI), Las Palmas (Canaries Island, CLS), Singapore (Singapore, SMM) and Santiago (Chile, Meteo Chile).

There are currently 33 stations delivering TIP data sets to CLS and Service Argos Inc. Most of them process data from NOAA-16, NOAA-17, NOAA-15, NOAA-14 and NOAA-12, so we are able to maintain good throughput times for delivery of results.

For the year 2003, we have some projects for antennas located in Greece, Chile and Fidji.

List of regional receiving stations

	Antennas	Country	Operator	Possible satellites
1	Aussaguel	France	CLS	**N12, N14, N15, N16, N17**
2	Buenos Aires	Argentina	INTA	**N12, N14, N15, N16, N17**
3	Cape Town	South Africa	CLS/SAWB	**N12, N14, N15, N16, N17**
4	Casey	Australia (Antarctica)	BOM	**N12, N14, N15, N16,**
5	Cayenne	France (Guyana)	IRD	**N12, N14, N15, N16, N17**
6	Darwin	Australia	BOM	**N12, N14, N15, N16, N17**
7	Edmonton	Canada	Envir. Canada	**N12, N14, , N16, N17**
8	Gilmore	USA	NOAA/NESDIS	**N12, N14, N15, N16, N17**
9	Halifax	Canada	Can. Coast Guard	**N12, N14, N15, N16, N17**
10	Hatoyama	Japan	NASDA/EOC	**N12, N14, N15, N16,**
11	Hawaï	USA	NOAA/NWS	**N12, , N15, N16, N17**
12	Helsinki	Finland	CLS	**N12, N14, N15, N16, N17**
13	Ile de la Réunion	France (Reunion Island)	Météo France	**N12, N14, , N16,**
14	Ile de la Réunion	France (Reunion Island)	IRD	**N12, N14, N15, N16, N17**
15	Lannion	France	Météo France	**, N14, N15, N16, N17**
16	Largo	USA	SAI	**N12, N14, N15, N16, N17**
17	Las Palmas	Canaries Island	Univ. Las Palmas	**N12, N14, N15, N16**
18	Las Palmas	Canaries Island	CLS	**N12, N14, N15, N16, N17**
19	Lima	Peru	CLS perù	**N12, N14, N15, N16, N17**
20	Melbourne	Australia	BOM	**N12, N14, N15, N16, N17**
21	Miami	USA	NOAA/AOML	**N12, N14, N15, N16, N17**
22	Monterey	USA	NESDIS/NWS	**N12, , N15 , N16, N17**
23	Murmansk	Russia	Complex System	**N12, N14, N15, N16,**
24	Noumea	France (New Caledonia)	IRD	**N12, N14, , N16,**
25	Oslo	Norway	NMI	**N12, N14, N15, N16, N17**
26	Perth	Australia	BOM	**N12, N14, N15, N16, N17**
27	Petropavlosk	Russia	Rybradiov	**N12, N14, N15, N16, N17**
28	Santiago	Chile	meteo Chile	**N12, N14,N15 , ,**
29	Singapore	Singapore	SMM	**N12, N14, N15, N16, N17**
30	Tokyo	Japan	Jamstec	**N12, N14, N15, N16, N17**
31	Toulouse	France	CLS	**N12, N14, N15, N16, N17**
32	Wallops	USA	NOAA/NESDIS	**N12, N14, N15, N16, N17**
33	Wellington	New-Zeland	Met Office	**, N14, N15, N16, N17**

Figure 2

ARGOS receiving station network

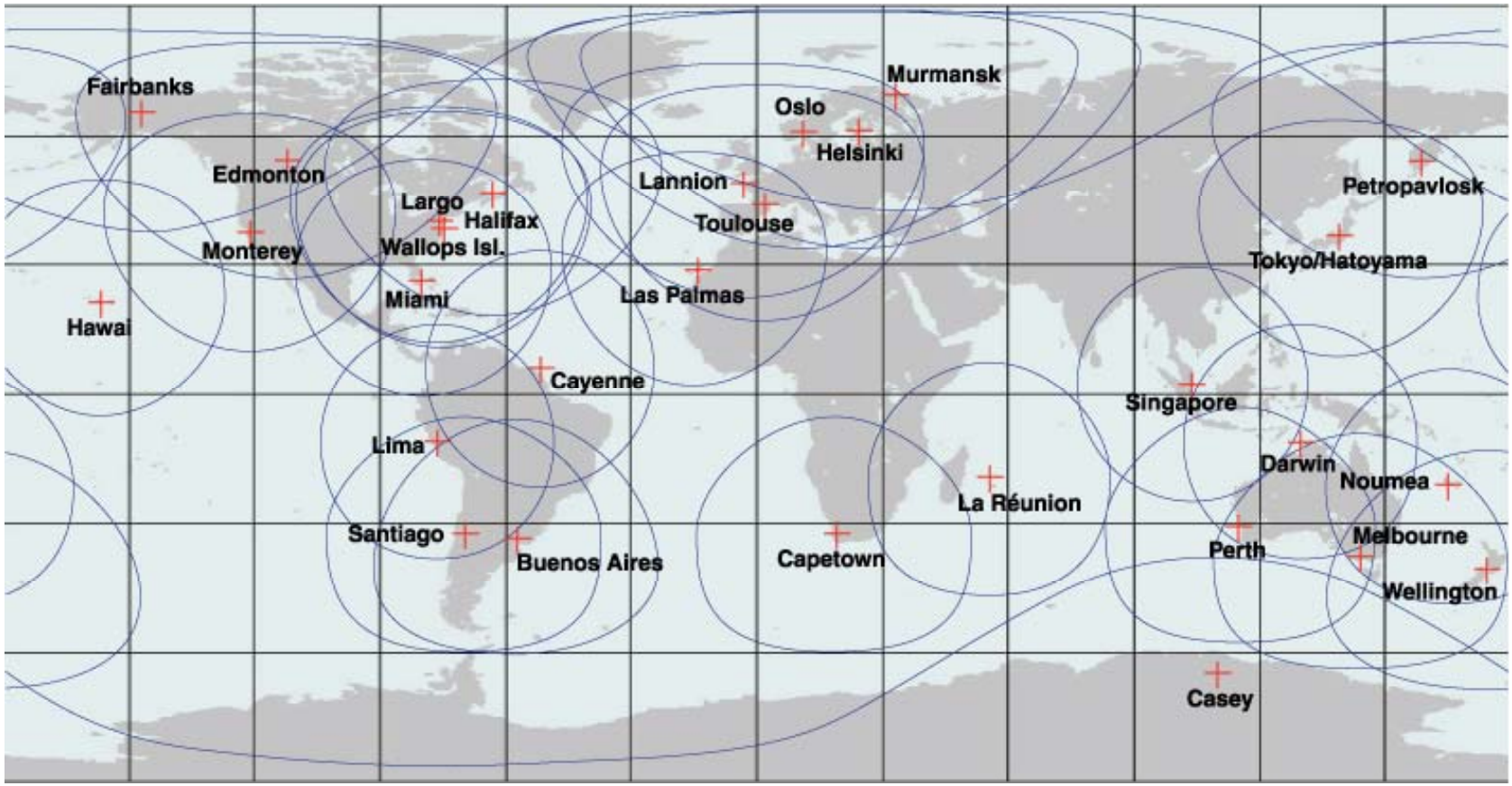


Figure 3.1

Receiving Station Performance

Number of significant datasets sent by each HRPT station

Year: 03 *Month:* 07

Satellites:	NOAA12	NOAA14	NOAA15	NOAA16	NOAA17
Station Name	*Coeff*	*Coeff*	*Coeff*	*Coeff*	*Coeff*
Aussaguel	0,92	0,97	0,84	1,00	0,93
Buenos Aires	0,90		0,43	0,45	0,43
Cape Town	0,90	0,96	0,72	1,00	0,80
Casey	0,75		0,24	1,00	
Cayenne	0,65	0,60	0,55	0,62	0,67
CLS	0,71	0,89	0,69	0,87	0,70
Darwin			1,00	1,00	
Edmonton	0,89	0,10		0,86	0,67
Gilmore	0,38	0,56	0,74	0,82	0,74
Halifax	0,67	0,70	0,70	0,71	0,73
Hatoyama	0,64	0,76		0,77	
Hawai	0,79			0,88	0,83
Helsinki	0,83	0,95	0,64	0,95	0,81
Lannion		0,89		1,00	0,86
Largo	0,41	0,45	0,40	0,42	0,27
Las Palmas CLS	1,00	1,00	0,91	1,00	1,00
Las Palmas IRD	0,59		0,64	0,67	
Lima	0,99	1,00	1,00	1,00	1,00
Melbourne	0,48	0,35	0,43	0,54	
Miami	0,67		0,86	0,79	0,82
Monterrey				0,70	0,70
Murmansk	0,87	0,98	0,63	1,00	
Noumea	0,50	0,40		1,00	
Oslo		0,54	0,53	0,69	0,46
Perth	0,89	1,00	0,54	1,00	
Petropavlovsk	0,77	0,81	0,63	0,90	0,71
Punta Arenas	0,41	0,46	0,40		
Reunion IRD	0,65		0,72	0,72	
Santiago	0,54	0,65	0,54		
Singapore	1,00		0,74	0,97	0,86
Wallops	0,17	0,78	0,93	0,90	0,93
Wellington		0,84	0,77	0,94	

Fidji
Tokyo
Noumea
Ile de la reunion

Not received this month

Table 3.2 – Station performance in July 2003, expressed as the ratio of datasets collected on number of satellite passes above the station

3. PROCESSING CENTERS

Each of the five Argos processing centers—in Toulouse, Largo, Melbourne, Tokyo, and Lima—operated without a major hitch in 2002.
The two global processing centers in Toulouse and Largo continue to process data sets from all receiving stations, handling over 500 data sets per day (see Figure 4). The regional processing centers in Melbourne, Tokyo, and Lima only process data sets from stations covering their region. Supplementary data providing global coverage are supplied by the Toulouse center or by the Largos center if necessary.

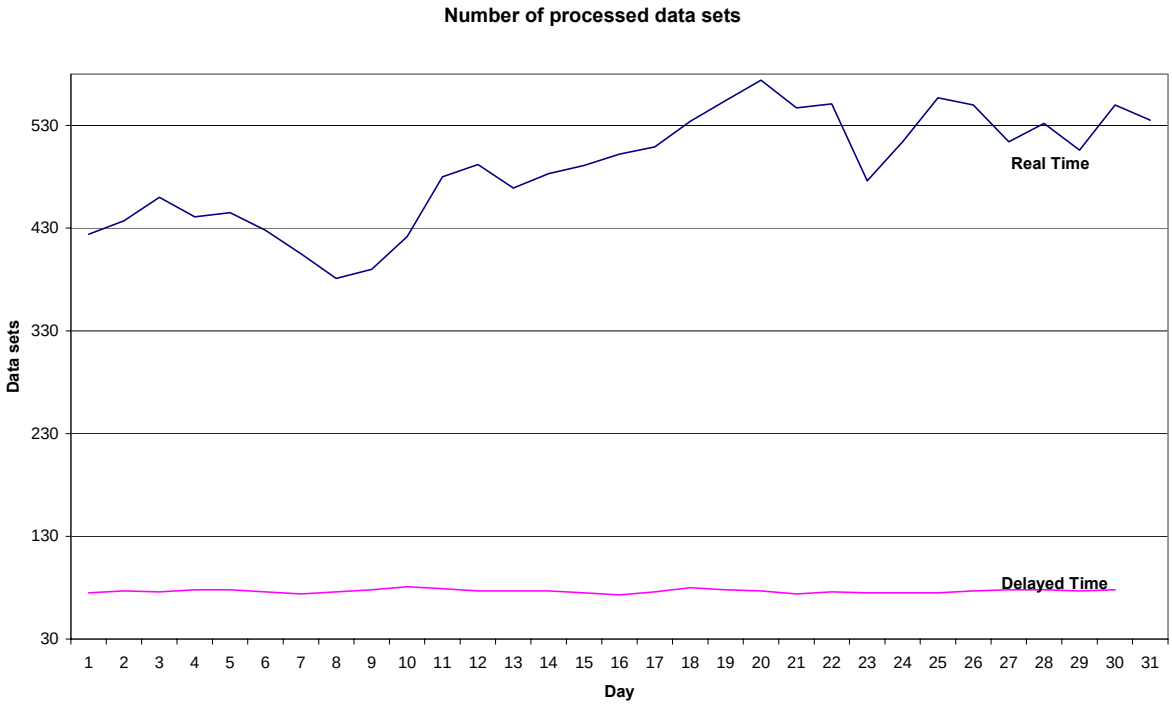


Figure 4: Number of data sets processed in December 2002

The number of Argos platforms operating continues to increase. In December 2002, about 5000 platforms were seen on average per day (figure 5). However, each of the two global centers processed data from about 10000 individual platforms during this month.

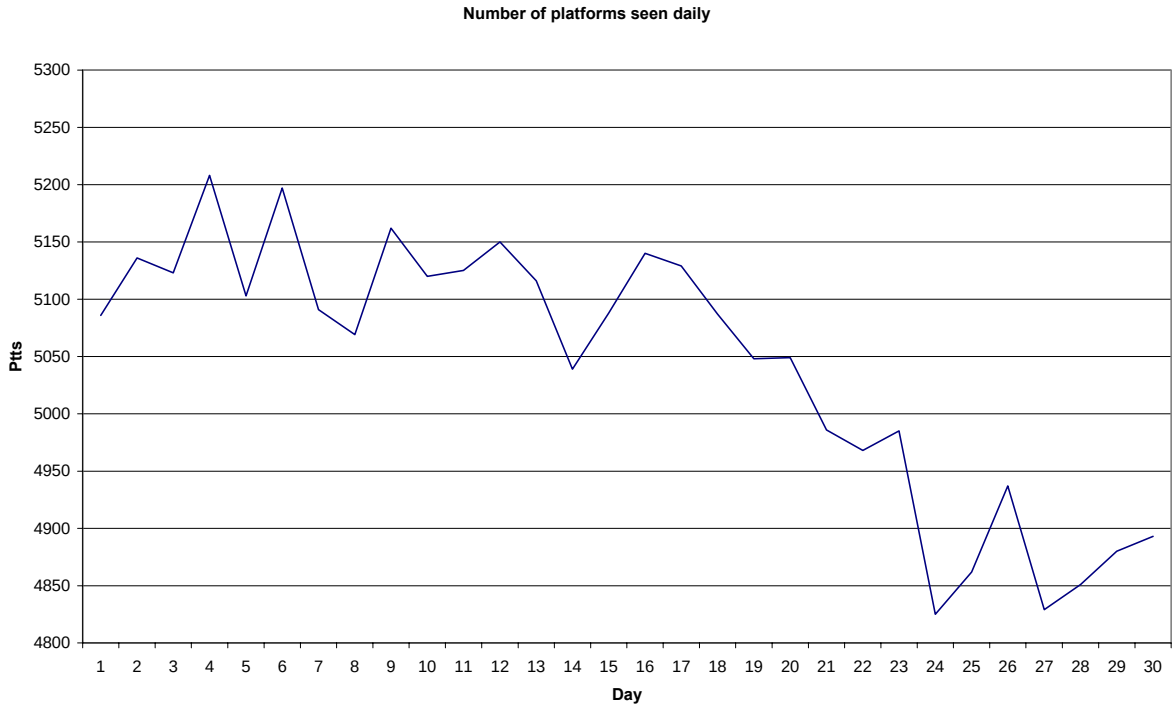


Figure 5: Number of platforms seen every day in December 2002

Figures 6 and 7 below show the number of locations and messages computed every day by the Largo and Toulouse centers.

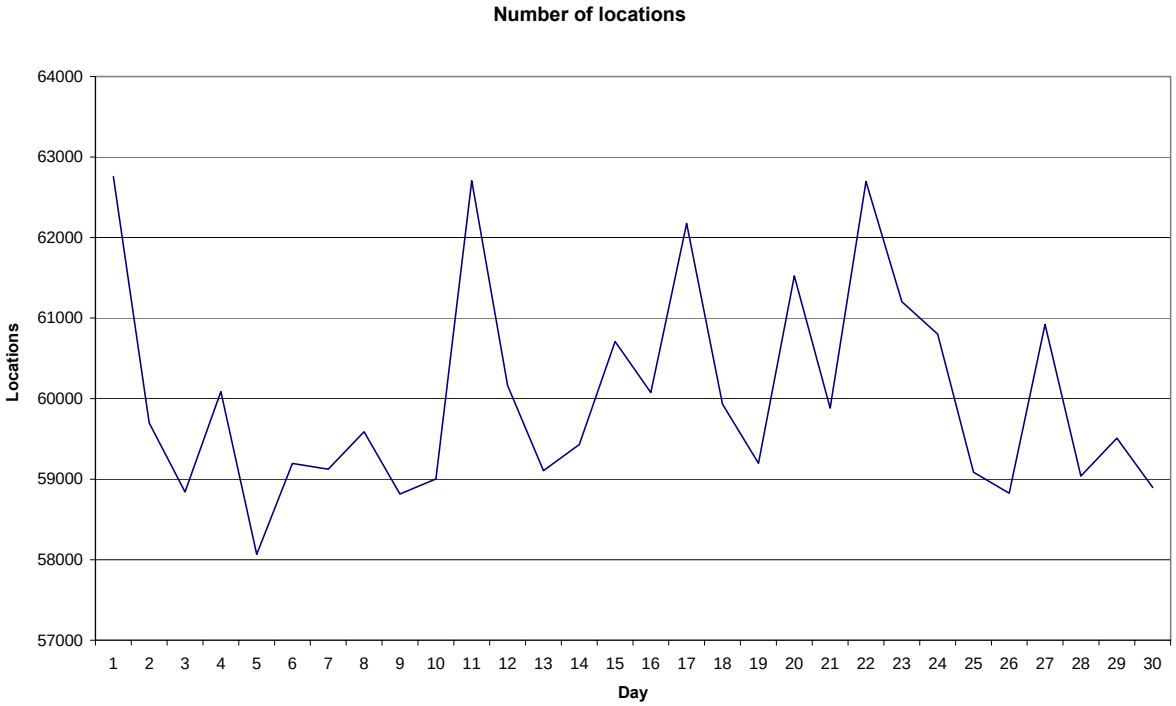


Figure 6: Number of locations processed in December 2002

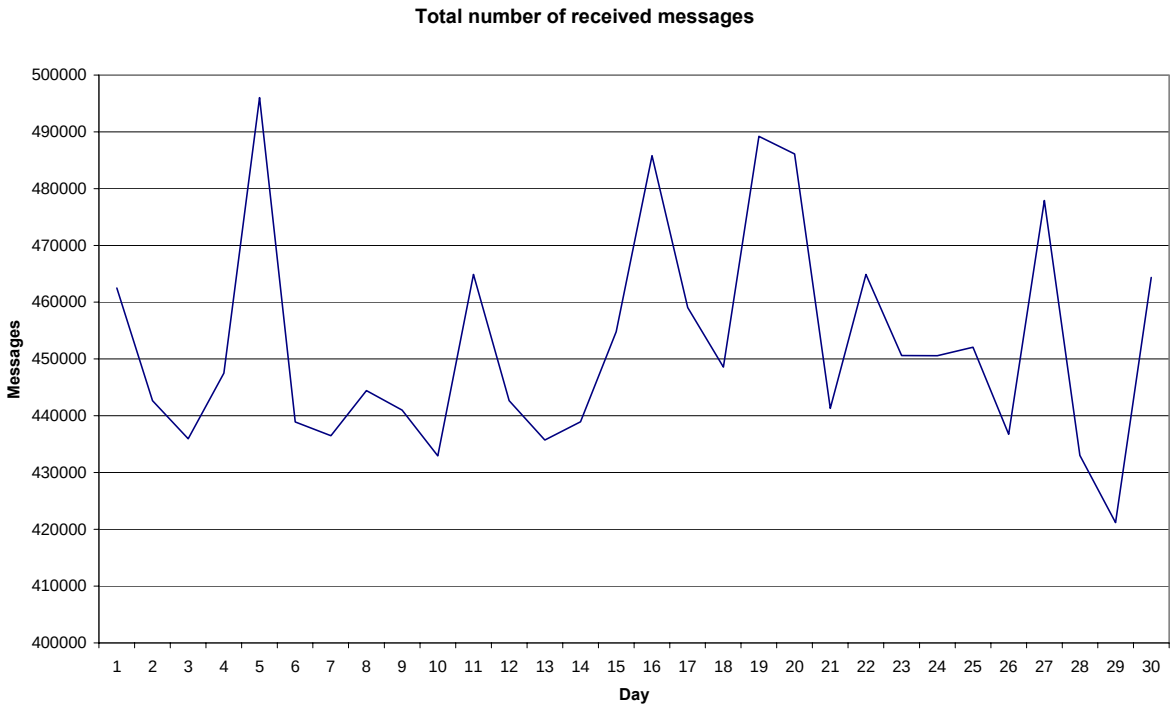


Figure 7: Number of messages received in December 2002

4. COMMUNICATION LINKS

The Internet is the main communication link used to distribute processed data to users and to retrieve data sets from receiving stations. The Toulouse center has now a double access (1 Mbits + 2 Mbits) which improve the reliability of our communication facilities. We intend to do the same at the Largo center in 2003.

The X25 protocol has been stopped at Service Argos Inc but continues to be used by the Toulouse center to send data to a few users (less than 20) concerned by security reasons. Last year, X25 protocol was still used to send the weather bulletins to the Météo France weather service and has been replaced by the FTP protocol in 2002.

As we already announced, the transatlantic link between Toulouse and Largo has been definitively stopped on July 2001.

5. THROUGHPUT TIME FOR DELIVERY RESULTS

CLS throughput times for delivery of results should be calculated in terms of the time taken to reach end users.
For each message received by the satellite, we compute the data turnaround time/data availability which is the time elapsed between the recording of the message on board the satellite and processing of the same message by the global processing center.

Table 8 shows the throughput time for delivery of results for stored data from NOAA-17, NOAA-16 and NOAA-15.

29% of the data are available within two hours while 64% of the data are available within three hours.

Satellite Delivery	NOAA-15, NOAA-16 & NOAA-17
1 h	13 %
2 h	29 %
3 h	64 %
4 h	87 %
5 h	92 %
> 5 h	100 %

Table 8: Stored data availability for satellites NOAA-15, NOAA-16 and NOAA-17

Table 9 shows the throughput time for delivery of results for stored data from NOAA-11 and NOAA-14, the two backup satellites.

Satellite Delivery	NOAA-11 & NOAA-14
1 h	01 %
2 h	12 %
3 h	32 %
4 h	56 %
5 h	66 %
> 5 h	100 %

Table 9: Stored data availability for satellites NOAA-11 and NOAA-14

Only 32 % of the data are available within three hours as opposed to 64% for the satellites NOAA-17, NOAA-16 and NOAA-15. This delay is due to the NOAA data set delivery times.

Table 10 below shows the throughput time for delivery of results for real-time data from NOAA-17, NOAA-16, NOAA-15, NOAA-14 and NOAA-12 and acquired by the 33 HRPT receiving stations.

The throughput time for delivery of results for real-time data includes three main delays:

- the satellite pass duration, because we have to wait for the end of the pass to transfer and process the data set;
- the time taken to transfer the data set to the global processing centers. Most transfers go over the Internet. The transfer rate is getting better and better.
- the time taken to process the data set by the global processing centers, which is not significant (less than 30 seconds).

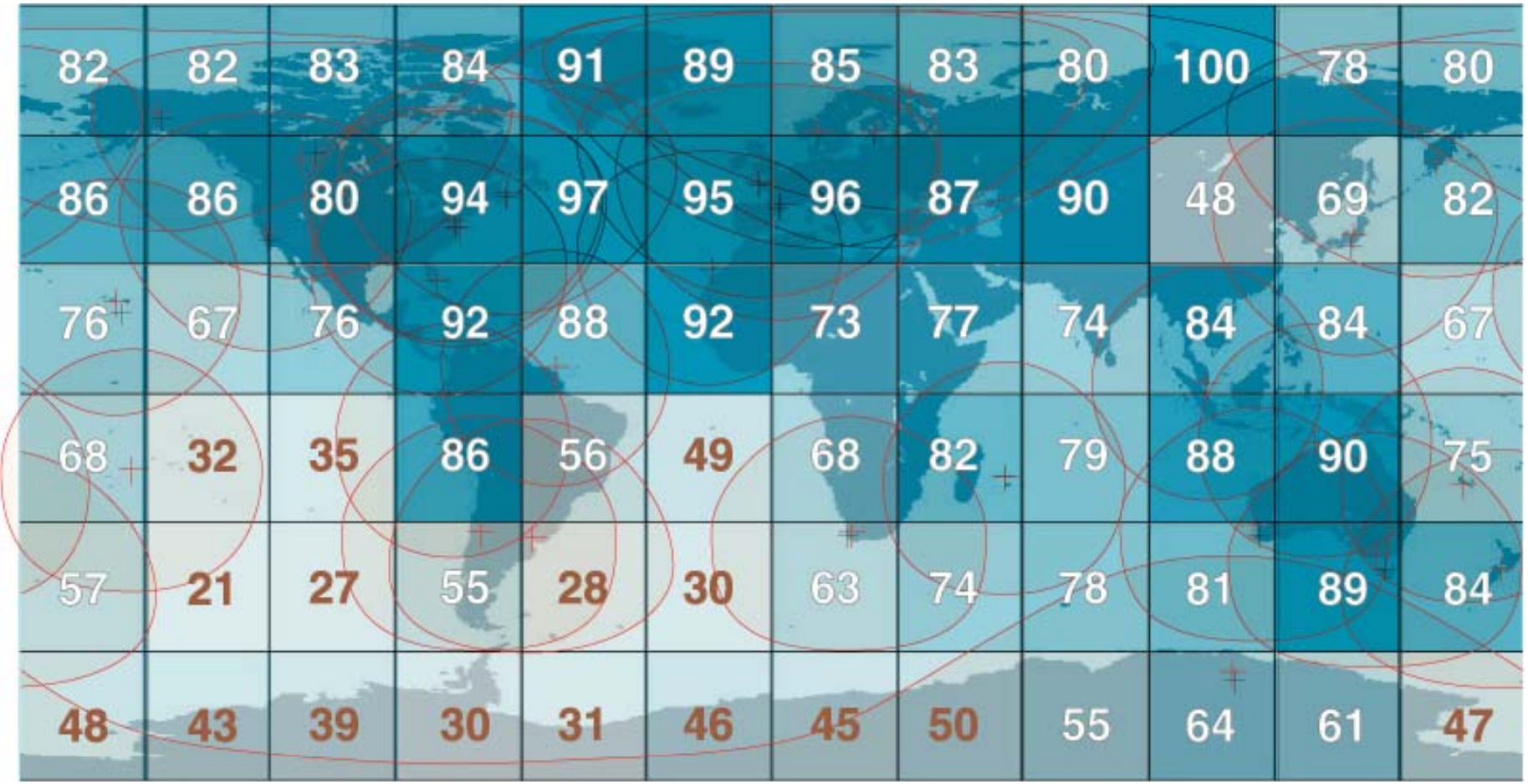
Satellite **Delivery**	**NOAA-12, NOAA-14 NOAA-15 & NOAA-16**
10’	4 %
15’	20 %
20’	49 %
30’	87 %
45’	97 %
60’	98 %
>60’	100 %

Table 10: Real-time data availability

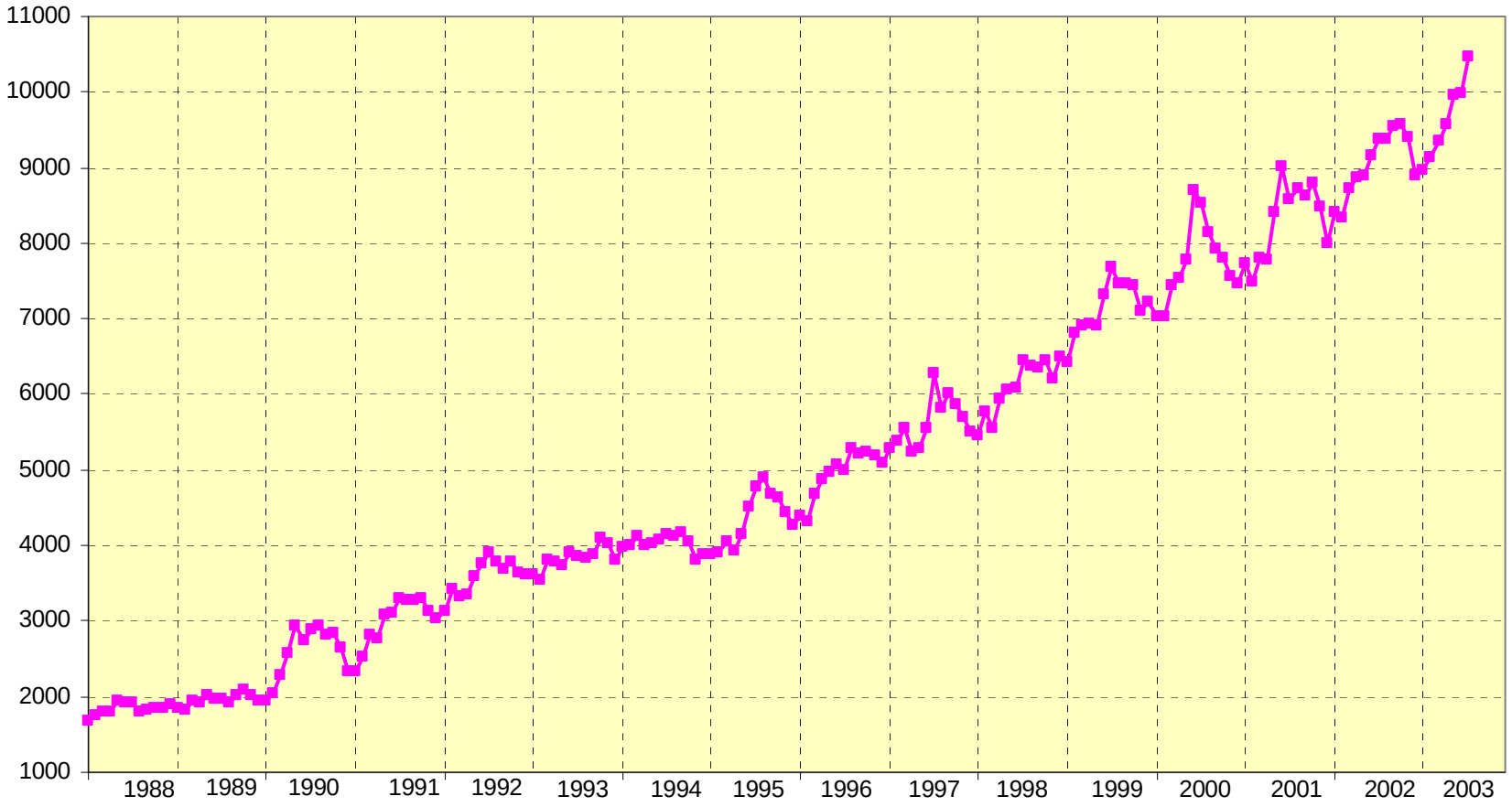
86 % of these real-time data are available within 30 minutes.

Note that about 2/3 of the Argos data are now available in near real time.

Percentage of real-time data received in each geographical square (July 2003)



Evolution of Active Platforms



Active platform evolution since 1988
An active platform is a platform received at least once in the month

SYSTEM IMPROVEMENTS

1. HARDWARE AND SOFTWARE CONFIGURATION

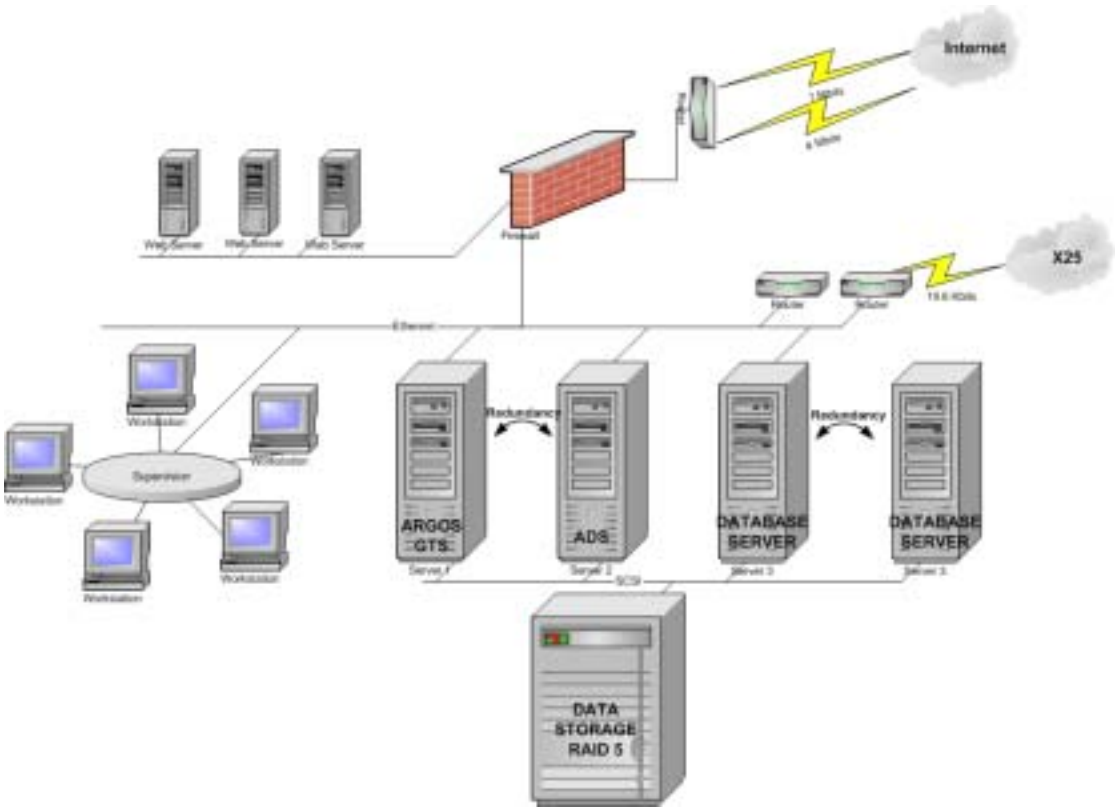
1.1. Hardware Configuration

In 2002, we continued to upgrade the configuration with the objective to improve the performance and the reliability of the service provided to the users.

It consisted in :

- adding a fourth Argos operational computer to improve the performance of the Oracle database service,
- adding a second Internet access (2 Mbits) to enhance the bandwidth and also the reliability of our communication links,
- implementing the total redundancy between both global processing centres,
- upgrading the data distribution centre
- continuing the implementation of an Argos 2001 validation configuration

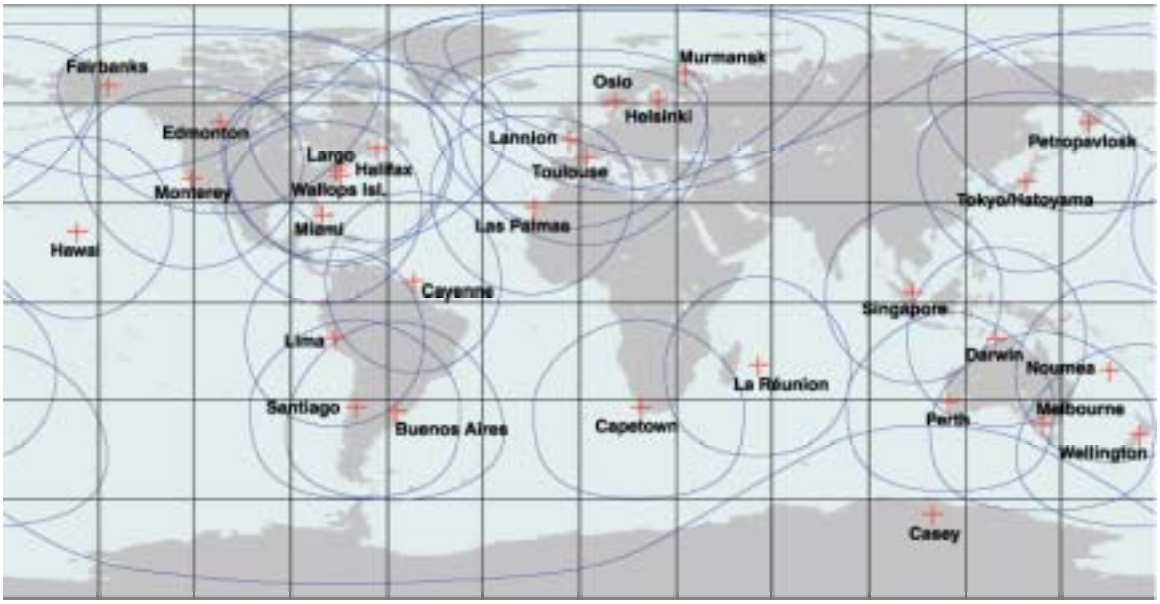
Our computer systems architecture is the following one :



1.2. Ground Segment Architecture

Five new HRPT stations joined our network in 2002, thus helping to improve data throughput times to users. They are in Hatoyama (Japan, NASDA), Oslo (Norway, NMI), Las Palmas (Canaries Island, CLS), Singapore (Singapore, SMM) and Santiago (Chile, Meteo Chile).

The Argos stations network has now 33 antennas.



1.3. Software configuration

CLS continues to focus most of its software development efforts on the Argos 2001 and Argos/Next projects – see paragraph 2. PROJECTS. At the same time the team regularly works on corrective software maintenance and upgrades that are vital to continue meeting user requirements.

1.4. Regional processing centers

The three regional processing centers—in Melbourne, Tokyo, and Lima—operated without a major hitch in 2001.
The main work at these centers involved upgrading versions of basic software.

2. PROJECTS

2.1 Argos 2001

The purpose of the Argos 2001 project is to upgrade the entire Argos processing system. This ambitious project is vital for the long-term continuity of the Argos system and to better serve users. This project is scheduled in three phases :

Phase I : Development and implementation of a new user interface allowing users to access data and view and update technical files via a web server. The System Use Agreements database will also be implemented during this phase. Data will be stored and managed by a database management system designed to be responsive to users needs. Our objective is to give users more versatility if they require it. Consequently we will be expected to offer them quick and efficient support.

Phase II : Improvement and development of value-added services.

Phase III : Redesign of the Argos processing system.

Current status:
Phase I:
Development began end 1998 and is finished.
The user management application is operational.
The User Office application is operational since end of 2000.
The problems of performance in the new data distribution system have been solved. The opening of the website to the users has been made in May 2003.

Phase II:
Requirement specifications were reviewed and approved in January 2002.
Software specifications have been finished in July 2002.
The development have commenced in December 2002.
The end of the development is scheduled at end of 2003.

Phase III:
Requirement specifications are being reviewed in July 2003.
The development will commence in the fourth quarter 2003.

2.2 Argos Next

ADEOS-II satellite was successfully launched by NASDA at 10:31 a.m. (Japanese Standard Time) on Dec. 14, 2002. ADEOS-II is the first satellite that carries on a ARGOS two-way instrument (named ARGOS-NEXT) allowing users to send messages to their platforms equipped of an Argos receiver (called PMT- Platform Messaging Transceiver) via a specific Argos downlink.

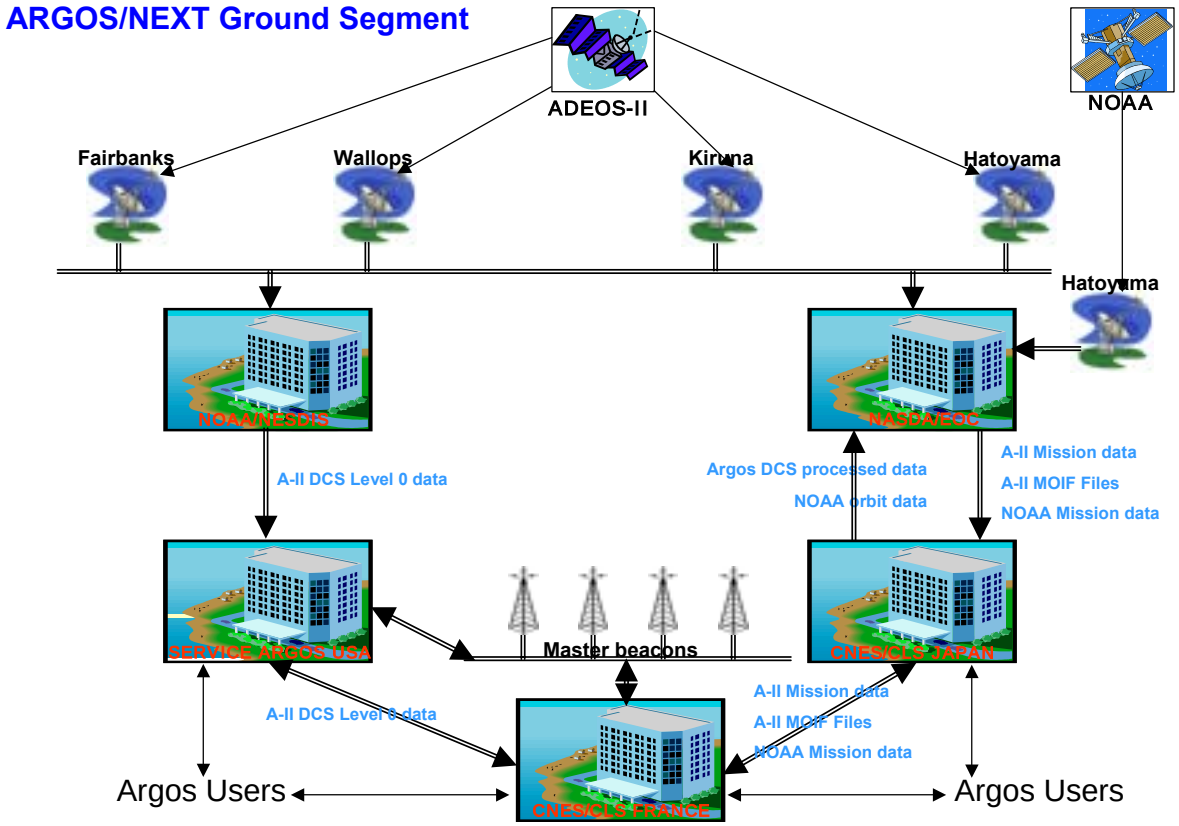
On January 29th, 2003 at 00:40 UTC, the ARGOS/ADEOS-II DCS (ARGOS-NEXT) equipment was switched on and on-orbit check out tests started from that date.
The ARGOS instrument on board ADEOS-II is fully tested. These tests covered :

- DRUs activation and HK verification,
- Uplink functioning and performance check out,
- Downlink functioning and performance check out,
- On board software validation.

All these tests were successfully completed. We did not notice not any on-board software incident since the ARGOS-NEXT equipment switch on.

Currently overall ARGOS/ADEOS-II DCS (ARGOS-NEXT) system tests are still in progress and are running without significant issues. System tests will be completed by the end of June, 2003.

The ARGOS/ADEOS-II DCS (uplink) was declared operational early May, 2003.



Argos APC

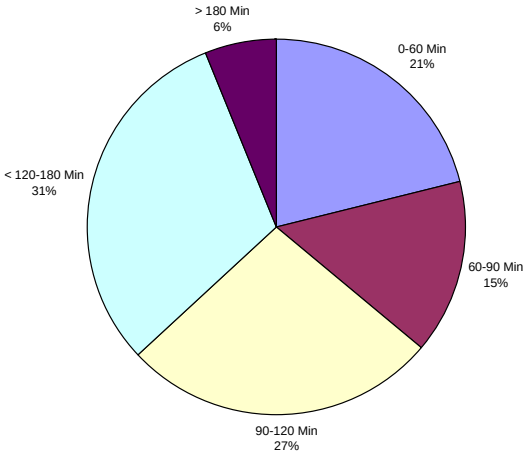
The main impacts of ADEOS-II satellite and ARGOS-NEXT equipment on APC software and operation were :

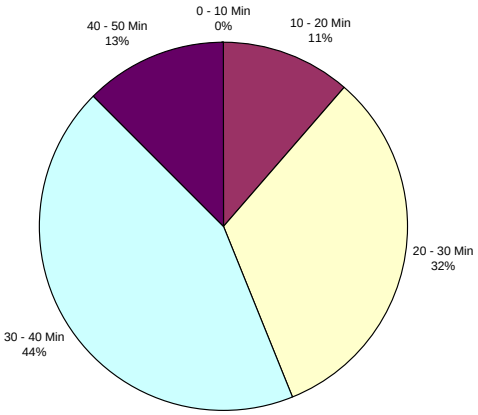
- file exchanges with the ADEOS II ground segment;
- ADEOS II/Argos DCS Level-0 data and HK telemetry processing;
- processing of Argos messages related to the downlink messaging service;
- 28-bit ID numbers introduction;
- ADEOS-II spacecraft maneuvers.

All these modifications were successfully tested during on-orbit check out test phase and, in particular, end to end tests between NASDA and CLS corresponding to the uplink function.

Results from the first test performance about the level-0 data disposal time:

Stored data disposal time : 94% of the data within 3 hours
Real time data disposal time : 87% of the data within 40 minutes





Since May 5th, 2003 all the Argos processing centers are processing and delivering, on an operational basis, the ARGOS/ADEOS-II DCS data to the Argos users.

Downlink Message Management Center (DMMC)

The DMMC's role is to centralize, validate, and schedule downlink message requests from users before transmitting downlink messages to the satellite (via a Master Beacon).

The DMMC is located at CLS premises in Toulouse, France. A symmetrical DMMC will be installed at SAI Largo - USA (mid – 2004 [TBC]).

DMMC development was completed by the end of the second quarter of 2000. DMMC Acceptance tests took place during the third quarter of 2000.The DMMC was installed onto the Argos operational configuration (Toulouse computer center only) third quarter of 2002.

During on-orbit check out test phase, nearly most of the downlink capabilities have been validated without notable issues. Tests remaining to perform concern predefined messages and downlink messaging services loading evaluation.

The downlink capabilities should be opened to Beta-testers during the fourth quarter of 2003 and, opened to the whole ARGOS community by the end of 2003.

Master Beacons Network

Located at strategic points around the globe, acting as the link between satellites and the DMMC.

Today, Toulouse, Hatoyama and Fairbanks master beacons are installed (No more installation is foreseen , for the moment).

Currently, Fairbanks master beacon has broken down. A mission to Alaska is scheduled end of June to repair it.

User PMT (Platform Messaging Transceiver)

Cnes started, mid 1999, with Martec / Serpe Iesm (French company located in Brittany) the development of an ADEOS II/ Argos 3 compatible receiver. This work is about to be competed with the delivery of 200 units ordered by CLS. The difficulties on that development were to make a product with difficult and contradictory specifications (small size, very high sensitivity, very low consumption, as well as low unit cost).

In July 2002, CLS decided to implement these receivers in PMTs (Platform Message Tranceivers). A US company, Bathy Systems was selected for its long experience on floats, which is one of the applications targeted by CLS and Service Argos Inc.. This development is about to be finished with various tests now running between the Web User Interface, the DMMC, the satellite and the PMT. We should finish this work by June 2003. During this development a specific bi-frequency (401 and 466 MHz) whip antenna has been developed to propose a unique antenna for the PMT. 50 PMTs are presently ordered from Bathy Systems. They will be delivered early September 2003.

CLS/Service Argos made several presentations of the PMT functions to users during the past months. Thus, from September 2003, we should be ready to deliver units to users for implementation in platforms. Synthesis of these tests will be done late 2003 and a meeting with manufacturers and users will be organised early 2004.

By the end of 2003, we will also see other manufacturers involved in PMT developments. Right now, Toyocom is working on a development of a complete PMT including their own receiver. CLS is doing a technical support on that work.

In Europe, Martec / Serpe Iesm will certainly start such a work with the receiver that they develop under CNES contract. They will also integrate the present receiver in their own floats.
In the US / Canada, SEIMAC wants also to invest in that field but focuses mainly on the new specifications of Argos 3 and mainly a PMT equipped with the high speed data rate. They also have the target to develop their own receiver.

3. REVIEW OF USERS REQUIREMENTS

3.1 Data Buoy Cooperation Panel requirements

3.1.1 GTS subsystem to relay data from other sources

***Requirement**: The study regarding the use of the GTS sub-system to relay data from satellite systems without GTS data processing capability demonstrated that the impact of meeting that requirement would be very small. The meeting (JTA-XXII) agreed that its chairman would carry the requirement to the OPSCOM in view of that enhancement becoming part of the Argos development programme.*

All tools needed to put in place this capability are ready, so it can be set up in one week time. This will be done upon request. For the time being no such need was received.

3.1.2 Reactivating Lannion Station.

***Requirement**: The meeting (JTA-XXII) recognized that the requirement had potentially large financial implications. On the other hand, reactivating the Lannion station would benefit much more than the DBCP and JTA communities. The meeting therefore instructed its chairman to convey the requirement first in a letter addressed to the co-chairs of the OPSCOM and then at the next meeting of the OPSCOM, in June 2003*

Blind Orbit Downloads are targeted for Barrow, Alaska rather than Lannion

1) the Argos DCS program and the US-European Data Exchange Committee have identified a requirement to retrieve "blind orbit" data for more timely insertion of atmospheric/ocean data into global models;

2) NOAA/NESDIS Satellite Operations Control Center (SOCC) is aware of the requirement, but has limited recorder time on the operational satellites (NOAA 16 & 17) due to recorder failures and other higher priority missions, e.g., Local Area Coverage (LAC) in the Middle East. Therefore there is not sufficient recorder time for any "blind orbit" storage/downloads anywhere (Lannion or Barrow) until some of the higher priority requirements are discontinued or the larger data sets [LAC or Global Area Coverage (GAC)] can be partially downloaded thereby making available some recorder time to playback the "blind orbit" data. This situation is not likely to change until the launch of NOAA-18 (June 2004) which will have a full suite of operational recorders.

In the interim, the NESDIS Direct Services Division is submitting the identified requirement for blind orbit data through the Satellite Products and Services Review Board(SPSRB)for validation. The validation process should be completed in October 2003.

At the same time, SOCC is taking steps to enhance the NOAA facilities at Barrow, AK where the necessary equipment exists to download the "blind orbits." Barrow is also in a geographical position that enables it to capture data from all the blind orbits, except one per week. These enhancements which should be completed by the end of 2003 will also include a communications link (T-1 line) with the Fairbanks Alaska Command and Data Acquisition (CDA) facility. This will allow the direct insertion of this blind orbit data into the NESDIS data processing system. At that time, it may be possible to download blind orbit data from NOAA-11 which is in a similar orbit (Local Time Ascending Node (LTAN) time) as NOAA-17 and the combination of the data from the two may effectively provide a complete "operational" satellite. Unfortunately a similar situation does not exist for NOAA-16 and a solution must wait until it is replaced by NOAA-18.

3.1.3 Connecting Argos to Brazilian Satellites

***Requirement:** Establish a formal cooperative agreement with Brazil, which OpsCom would do, and to explore the possibilities of implementing a dedicated Brazilian ground station.*

Brazilian DCS Report

CNES and CLS did a very preliminary study which demonstrates that the integration of a stand alone Brazilian station is feasible. The antenna sub-system is available off-the –shelf from manufacturer involved in the Jason program. The processor (procod) is upgraded presently by a Brazilian manufacturer and should be ready by the middle of 2005. Any decision to finalize a cost analysis and to present it to OPSCOM/JTA is dependant upon two factors:

- A strong users'requirement for enhanced latency time in any equatorial region of the world
- The confirmation from INPE that their actual constellation is going to be replaced within the expected timeframe.

Related to the data exchange between CNES and INPE the status is the following:

- CNES/CLS is receiving raw data transmitted from INPE.
- INPE is doing the technical evaluation of data transmitted from CLS and is analyzing ways to formalize the data exchange.

3.1.4 BUFR Encoder

Developments for the BUFR code started in January 2002. Argos GTS sub-system will be upgraded to permit encoding and GTS distribution of the buoy data in BUFR.
The coding of the BUFR encoder in the Argos GTS subsystem was completed in April 2003. Comprehensive testing followed until end of June 2003. The encoder was declared operational July 3rd in both Argos center. Distribution in BUOY format continues in parallel.

3.1.5 ARGO QC module.

ARGO QC in US Argos Center

As stated in JTA XXII report and still ongoing, all US ARGO profiles transmitting via Argos are processed by Service Argos Inc and are applied the AOML quality controls – which meets ARGO requirements - prior their insertion on the GTS.

ARGO QC in the French Argos Center

Based on the ARGO QC requirements, a functional specification document was written for the implementation of the new QC in the Argos GTS subsystem.
The initial intention was to build a dedicated module, external to the current GTS subsystem main software to address all QCs specific to profile data (XBTs, TAO, floats…). This was given up during the technical study as the attractiveness of this solution disappeared when working on matching the operational standards of our GTS subsystem.
These new QCs are then coded directly in the GTS subsystem. Tests are to begin in mid-September 2003 and operational implementation will take place this fall. These new Qcs will also benefit to all Argos platforms such as data buoys and XBTs.

An original and flexible method was retained for the climatologic tests which will enable further refining for this type of QCs when needs appear:
A 3-D (Lat, Long, Depth) world grid is created using Levitus resolution - i.e. 1 ° in lat- long and x m in depth – and maximum and minimum values are attached to each point of the grid. The grid is initiated with T-S world gross check values. T-S limits specific to ocean basin are then applied and erase the previous gross check values in the world grid file. A smaller area with more restrictive or just different parameters can be designed and implemented in the same way. When

QC tested, the points of the float profiles are compared with the values of the QC grid file and either accepted or flagged prior GTS insertion.
ARGO geographic requirements today are limited to Mediterranean Sea and the Red Sea, but it is expectable, as knowledge is gained, that there will be other area concerned.
The same file will also be used to detect beached floats (or buoys).

3.2 A/B locations for animal trackers

Animal trackers are no longer being charged for Class A/B locations

3.3 Access to third satellite - Data collected by ADEOS-II satellite
Requirement: *Results of CLS experience regarding possible free access to the ADEOS-II satellite, including cost impacts.*
Data collected by the Argos DCS on board ADEOS-II (MIDORI-II) is provided free of charge for all users and has been part of the basic Argos service since May 5 2003.

3.4 Implementation of the streamlined System Use Agreement (SUA) approval process.
The system should expedite the processing of SUAs and allow for automatic distribution to CLS, OpsCom, and other interested parties, i.e. ROCs, as requested.

The NOAA Electronic SUA system is built on a web page interface on the front with an SQL database on the back end. The system will reside on a common computer which also houses the SARSAT registration software and the NOAA Direct Readout user database and has e-mail send and receive capabilities. The system will import electronic agreements in XML format as e-mail attachments. The e-mails will be sent from CLS/SAI argos-sua-manager@cls.fr to a set NOAA address argosua@noaa.gov. Currently the system is in beta testing on the contractor's server and is scheduled to be installed in September 2003 and operational soon after.

3.5 METOP antennas

In order to develop a new Metop HRPT real-time network, to improve the delivery times for the Argos data to the users, and to meet users requirements, an action item 37-5 was decided during the last OPSCOM meeting (les Saintes-Maries-de-la-Mer, France 06/2003) to assess the areas of the world where real-time data requirements and thus regional HRPT station coverage are most critical.

NOAA indicated at the OPSCOM meeting that it might be willing to sponsor three or more upgrades to existing antennae to enable them to receive Metop data . Initial assessments by CLS suggest that by upgrading the Monterey (USA) and Hawaii (USA) antennae as a first step (Figure 4), combined with the global stations at Fairbanks (USA), Wallops (USA), and Svalbard (Norway) a Metop real-time network would result that would cover 35% of the global Argos transmitters.

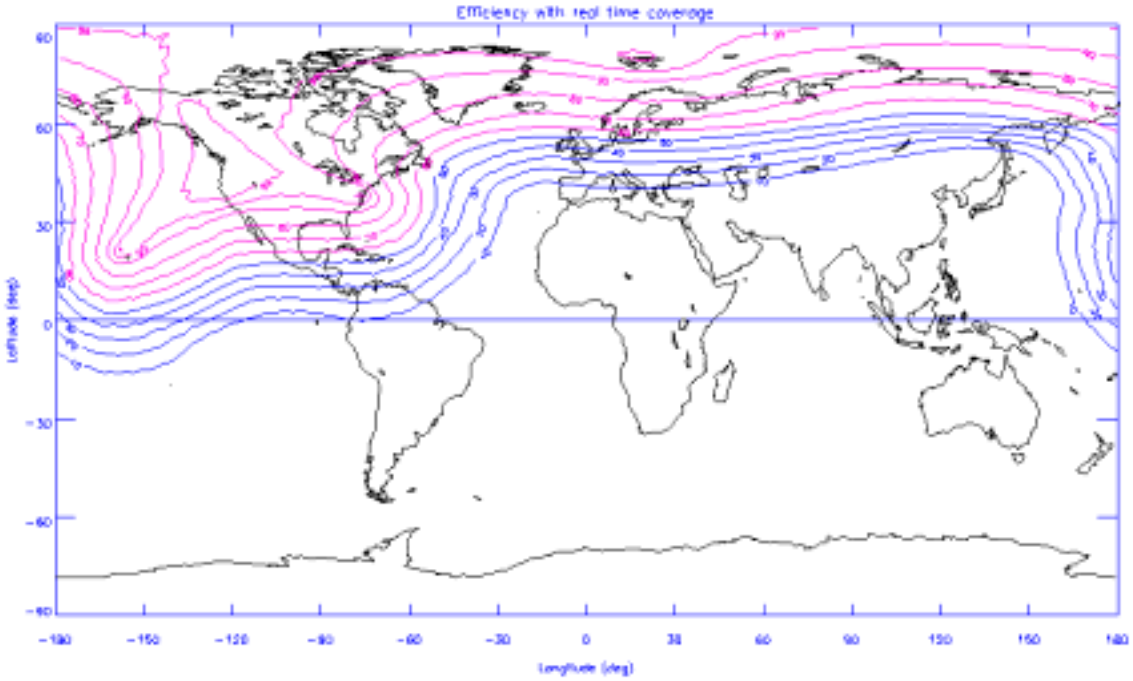


Fig. 4, coverage of Argos transmitters as a result of the initial network of Metop receiving antennas

3.6 Falklands LUT

Despite discouraging reports at JTA-XXII indicating that the probability was very low of being able to successfully receive data from the UKMO LUT in the Falklands, some new information has recently become available that is encouraging. An e-mail dated August 20, 2003 from Mark Salkovskis at the UKMO indicates:

"The UK Met Office are installing a new direct 64K comms line from the Falklands to our new HQ in Exeter this may be the opportunity to FTP raw TIP data directly from the NAVO Lucutus system to your site in the USA.

We will need details of your FTP site logins etc will be required.

I will be travelling to the Falklands Sept 11th and hope to get the LUT working once again. The new comms line will be available from the week of the 11th Sept.

Assuming that we can jump all of the hoops and work through the red tape and get permission to get through our firewall at the Met Office it is unlikely that real data will flow from the Falklands to you before Jan 2004 which is my next scheduled visit to the Falklands.

I hope that this is the progress that we all require..."

Thus, efforts are still underway to make this happen.

3.7 Issues arising from the Argos Operations Committee

No special issues to address

REVIEW OF THE STRUCTURE OF THE TARIFF AGREEMENT AND RELATED MATTERS

1. FUNDING AGREEMENTS

1.1 Principles of the Bonus

See Section 1. Report on the 2003 Agreement, paragraph 3.1

1.2 Recommendations from the Operations Committee

37th Operations Committee (June 2003)

G-1-1. Report on the JTA Meeting

D. Painting, chairman of the JTA, informed the meeting of the main results from the 22nd meeting of the JTA (La Martinique, 21 – 23 October, 2002).

It was noted that the 5-year plan (2000 – 2004), that provided a systematic framework for JTA cost and tariff evolutions was operating successfully and should result in elimination of accumulated losses by 2005. Beyond 2004, the tariff structure needs to be re-negotiated to reflect the changes in user community and operational cost basis and also to simplify the rules and conditions of use, since these have become increasingly complicated over the years….. It therefore requested the JTA chairman and CLS to bring this issue to the next meeting of the JTA with the objective of developing a framework for future tariff evolution, based on readily understood cost/benefit principles. This plan, in draft form, should be presented at the next OPSCOM meeting for approval in principle and further refined for implementation in 2005 following the twenty-fourth meeting of the JTA in autumn 2004.

G-1-5. Financial Status of Agent

C. Vassal of CLS reviewed the Argos financial status. The previous proposal confirmed during the OC 35 to separate the JTA operating cost obligations from the total operating cost was adopted at the JTA-21 meeting and reiterated at the JTA-22 meeting. The 2002 annual Argos basic costs, for the purpose of calculating the JTA share, is capped at the actual 2000 figure (M€ 9.49) to be then increased by the annual inflation rates for 2001 and 2002 successively. The percentage of JTA active PTTs versus the total number of active PTTs is also capped at 55% according to FY plan.

2. FIVE YEAR OPERATING PLAN

2.1 JTA Guidance

JTA XIX

JTA XIX had decided on a five-year plan (2000-2004), firstly to eliminate the annual operating deficit, and secondly to effectively remove the accumulated losses. The essential features of this plan were:

(i) An annual inflation of 2% would be allowed in Argos operating costs;
(ii) The JTA share of these operating costs would decrease from the existing 60%, initially by 2% in 2000, and then in increments of 1.5%, to reach 52% in 2004;
(iii) The Monthly Active Platform Fee would be phased in over the period, beginning at FRF 10 per active platform in 2000 to reach FRF 50 in 2004;
(iv) The basic price per PTT-year would also be increased by FRF 200 per year, beginning in 2000, to reach FRF 27,000 in 2004;
(v) The unused ID charge would be phased out over the period, subject to annual review;
(vi) Free access to the third satellite would be provided immediately for animal trackers, within limitations on number of locations; the situation with regard to access to the third satellite would be reviewed at the next meeting, with a view to its eventual introduction for all users.

JTA XX

"…..the meeting was pleased to note that the actual and projected figures for annual and accumulate losses were generally in line with those projected at JTA XIX and reproduced in Annex VII of the Final Report of that meeting. At the same time it recognized that many uncertainties remained regarding the ongoing implementation of the plan, covering issues such as the JTA share of Argos operating and development costs, future PTT-year commitments and other incomes for CLS. The meeting therefore agreed that it was not yet in a position to consider revising the plan, nor was there any immediate compelling reason to do so. It was therefore agreed that the basic JTA structure should continue as detailed in the plan given in Annex VII…."

JTA XXI

"*…the meeting reviewed carefully a report on the operation of the Five-Year Plan (FYP)for Argos financing adopted at JTA XIX. It recognized that Argos operating costs in 1999 and 2000 had increased by more than predicted in the plan, but noticed with appreciation that the OpsCom had agreed at its 2001 meeting to essentially de-couple the JTA share of these costs from the actual figure, as from 2001. On this basis, the annual Argos operating costs, for the purpose of calculating the JTA share, would be capped at the actual 2000 figure of FF 62.28M, to be then increased by the annual official inflation rate, estimated for the plan as averaging 2%. It was agreed that this operating cost would also from now on include all additional costs (present and future) not yet accounted for, such as the cost of financing an independent JTA chairman.*

On the basis of this new computation for the Argos operating costs, the meeting agreed that the basic FYP principles should remain unchanged for a further year, to be reviewed again at the 2002 meeting…."

JTA XXII

"…the meeting recognized that the plan was giving a reasonable approximation of the reality – at least so far as it was executed in a good spirit of cooperation – and decided that its basic principles should remain unchanged for a further year, to be reviewed again at the 2003 meeting."

2.2 Five Year Plan Projection

The five year plan projection is presented below:

IN EURO	1998	1999	2000	2001	2002	2003 (August 31st)	2004	2005
Total costs								
FYP	8,54	8,72	8,89	9,07	9,25	9,44	9,62	9,82
Inflation	2%	2%	2%	2,14%	2,44%	2%	2%	2%
Actual and agreed for the future	**8,54**	**8,96**	**9,49**	**9,68**	**9,93**	***10,17*** (*)	***10,28***	***10,48***
JTA Share								
FYP "no more than"	60%	60%	58%	56,50%	55,00%	53,50%	52,00%	52,00%
Actual and agreed for the future	**60,00%**	**59,50%**	**57,50%**	**56,50%**	**55,0%**	***53,5%***	***52,0%***	***52,0%***
JTA costs (M€)								
FYP	5,13	5,23	5,15	5,12	5,09	5,05	5,00	5,11
Actual and agreed for the future	**5,13**	**5,33**	**5,46**	**5,47**	**5,46**	***5,44***	***5,34***	***5,45***
Non inflated income (constant number)								
FYP	4,79	4,80	4,80	4,80	4,80	4,80	4,80	4,80
PTTs in Excess								
Actual and agreed for the future	**4,79**	**4,76**	**4,78**	**5,11**	**5,58**	***5,20***	***5,70***	***5,79***
Subscription		**1121**	**1108**	**1136**	**1 145**	**1 237**	**1250**	**1270**
Number active PTT								
FYP			4000	4500	5000	5500	6000	6000
Actual and forecast			**4448**	**4571**	**5085**	***5500***	***5480***	***5720***
€/active PTT/month			1,52	3,05	4,57	6,10	7,62	7,62
Active PTT fixed fee (M€)			0,07	0,16	0,27	0,40	0,55	0,55
Actual and agreed for the future			**0,08**	**0,17**	**0,28**	***0,40***	***0,50***	***0,52***
Adjustment PTT years fee (€/year)								
FYP			30,49	60,98	91,47	121,96	152,45	152,45
Actual and agreed for the future			**30,49**	**60,98**	**91,47**	***91,47***	***91,47***	***91,47***
Adjustment (M€)								
FYP			0,03	0,07	0,10	0,15	0,19	0,19
Actual and agreed for the future			**0,03**	**0,07**	**0,10**	***0,11***	***0,11***	***0,12***
Annual loss								
FYP	0,26	0,43	0,25	0,09	-0,09	-0,31	-0,54	-0,44
Actual and agreed for the future	**0,26**	**0,57**	**0,57**	**0,13**	**-0,50**	***-0,27***	***-0,97***	***-0,98***
Accumulated loss (M€)								
FYP	0,26	0,69	0,93	1,02	0,93	0,62	0,08	-0,36
Actual and agreed for the future	**0,26**	**0,83**	**1,40**	**1,52**	**1,02**	***0,74***	***-0,23***	***-1,21***

(*) assuming 2,5% of combined inflation

3. FINANCIAL STATEMENT

3.1 Annual Expenses (in millions of Euros)

Expenses (MF)	2001	2002
Personnel related	5.48	6.00
Others	4.37	4.58
Total	**9.85**	**10.58**

Table 3.1: 2001 and 2002 Expenses

3.2 Detail on 2002 expenses (in millions of Euros)

A – Communications	0.22
B - Maintenance & consummable	0.53
C - General & Administrative (building, power, logistics.)	1.00
D - Foreign agents & Marketing	1.12
E - Financial costs & taxes	0.86
F – Amortization	1.18
G – Salaries	5.16
H - Management & human ressource administration	0.51
TOTAL	**10.58**

Table 3.2: Detail on 2002 Expenses

3.3 Details of Amortization Items

CLS + SAI amortization details (k€)	1998	1999	2000	2001	2002
SOFTWARE					
S/W to make computer centers operational	0	0	0	0	0
Regional Processing Center	16	6	7	44	49
New location - new ARGOS accounting system	16	0	3	14	17
GTS			11	18	21
TOTAL	*31*	*6*	*21*	*76*	***88***
ARGOS on ADEOS (Part of) & 2001 projects	320	320	320	320	320
HARDWARE					
US. GPC Hardware	99	75	92	97	119
French GPC Hardware	235	285	309	332	438
VAX Development	0	0	0	0	0
Transatlantic line (Equipment)	0	0	0	0	0
TOTAL	334	360	402	429	557
General and Miscellaneous					
µ computers	8	0	0	29	70
Promotional Hardware	1	0	0	2	15
Office furniture- Safety - General equipment	88	86	95	103	126
TOTAL	*97*	*86*	*95*	*134*	*211*
	0	0	0		
GRAND TOTAL	**783**	**773**	**838**	**959**	**1176**

Table 3.3: Detail of Amortization Items in k€

3.4 Annual Incomes (in millions of Euros)

Incomes (MF)	2001	2002
JTA	**5.35**	**5.96**
Non JTA	**5.54**	**5.53**
Total	**10.89**	**11.49**

Table 3.4: JTA and non JTA 2001, 2002 Incomes

3.5 Details of JTA and non JTA Incomes and Expenses (in million Euros)

	2001	2002	
INCOMES			
JTA CLS	2.33	2.12	
JTA SAI	3.02	3.84	
	5.35	**5.96**	+11.4%
Non JTA CLS	5.11	5.11	
Non JTA SAI	0.43	0.42	
	5.54	**5.53**	
Total Basic Argos Incomes	**10.89**	**11.49**	**+ 5.5%**
EXPENSES			
Total Basic Argos Expenses	**9.85**	**10.58**	**+ 7.4%**

Table 3.5: Detail of JTA and non JTA Incomes and Expenses

3.6 JTA Annual Balance (in millions of Euros)

	2001	2002
JTA Operating Costs	5.48	5.46
JTA Income	5.35	5.96
Difference	-0.13	0.50
Accumulated Difference	-1.52	-1.02

Table 3.6: Annual Balance

* The remaining difference from 2000 was -1.40 M€.

The 2002 annual Argos basic costs, for the purpose of calculating the JTA share, is capped at the actual 2000 figure (M€ 9.49) to be then increased by the annual inflation rates for 2001 and 2002 successively. The percentage of JTA active PTTs versus the total number of active PTTs is also capped at 55% according to FY plan.

4. OTHER ISSUES RELATING TO ARGOS FUNDING

4.1 Management of ID numbers

Unused ID Numbers and 28 bit IDs

JTA XXII meeting (2002) recognized that the incentive put into place to encourage users to recycle their unused IDs had had little results up to the present time. It nevertheless agreed to

retain the charge during 2003 and to review again the question at JTA-XXIII. It further requested CLS to send the lists of unused IDs to the ROCs by early January.

In August 2003 there were 20511 ID numbers allocated to JTA applications out of which (only) some 40% - 6954 IDs - were 28 bit. It is to be recalled that the recovery of 20 bit ID numbers is crucial as they are the roots used to build the 28 bit ID's. As a consequence, we strongly encourage the unused ID charge to continue.

4.2 Free access to A/B Class Location

JTA XX (2000)

Parag. 21: "On this basis, the meeting finally agreed to phase-in the inclusion of class A/B locations as a part of the basic JTA over a 3-year period, beginning with a one-third reduction of the charges for this service in 2001. As noted above, the cost of this action in lost income to CLS could be offset by the additional revenues to be generated under the JTA by the additional 20 PTT-years to be committed by the USA in 2001. Provided that the PTT-year commitments to the JTA continued to increase by an appropriate amount in subsequent years, the one-third year-on-year reduction would be continued until the A/B class locations could be effectively included under the JTA as a basic, free service."

Parag. 22: "While unsure of the exact nature of the implications of this action for the agreements governing the JTA, the meeting finally agreed that it would be prudent to obtain the opinion and agreement of the Argos Operations Committee for its proposal. The meeting therefore requested its chairman and CLS to bring the full proposal to the attention of the Operations Committee at the earliest opportunity, with a view to seeking their formal approval. If this approval was not immediately forthcoming, the meeting recognized that implementation of the proposal in 2001 would have to be suspended. The meeting agreed to review the whole issue again at JTA-XXI, based on the decisions of the Operations Committee, the financial and other results of the implementation of the proposal in 2001, and the projected PTT-year commitments for 2002 and beyond."

As indicated in Section 3.4 of this report the 35th Operations Committee Meeting concurred with the proposal made at the JTA XX meeting to phase in Class A/B positions.

The revenue to CLS/SAI for this service in year 2000 is 2.05 million French Francs. This amount represents the result of this action in lost income to CLS. Since the actual cost incurred by CLS/SAI to provide this service is 80% of the above revenue, that amount (0.8 times the revenue) will therefore be included in the operating costs for the Argos system. Also, although the JTA XX proposed a three-year phase-in of this service, CLS recommends a complete transfer of the service to the JTA in year 2002 in order to simplify the accounting process.

JTA XXI (2001)

Parag. 5.3 (i) "The meeting noted with appreciation that the OpsCom had accepted the proposal made at JTA XX. After some discussion, it was agreed that the phase-out process for these charges would proceed as agreed in 2000, viz.: two-third charge in 2001, one-third in 2002 and zero in 2003."

Action is underway. Animal trackers are being charged 1/3 in 2002 and will be charged nothing in 2003 and thereafter.

JTA XXII (2002)

Beginning with calendar year 2003 animal trackers will no longer be charged at all for Class A/B locations.

4.3 Free Access to Third Satellite

JTA XX

Parag. 23 "The meeting further recalled that at JTA-XIX it had agreed that "free access to the third satellite would be provided immediately for animal trackers, within limitations on number of locations; the situation with regard to access to the third satellite would be reviewed at the next meeting, with a view to its eventual introduction for all users…".

The policy about the access to third satellite needs to be reviewed in light of the expected launch of ADEOS-II in early 2002, and it is proposed to discuss this with the participants during the meeting.

JTA XXI

Parag. 5.3 (ii) "The meeting noted that, with the launch of the ADEOS-II satellite in early 2002, all Argos users would automatically have access to this as a third satellite. The meeting agreed that CLS should report to JTA XXII on experience with free access to this third satellite, including cost impacts."

As indicated in Section 3. Review of Users Requirements, parag. 4.3, the ADEOS II launch has been delayed until November 2002. Consequently no action has been taken yet on this item.

JTA XXII

"The meeting noted that CLS had no experience on this topic as yet, pending the actual launching of the satellite. CLS stated that there would be no additional charges for access to ADEOS-II data stream….."
(See Item 3.3 in Section 3 of this report)

4.4 Incentive for frequency spreading

JTA XX

"Parag. 39 In order to encourage manufacturers and users to move their transmissions to less crowded parts of the designated Argos spectrum, those Argos PTTs which register to transmit within the available band but outside the central band of 401.648 - 401.652 MHz will attract a discount of 10%…".

As indicated in section 3, parag. 3. Frequency Spreading, this incentive had no impact as we did not record any platform transmitting outside the central band. As this measure appears to be uneffective while significantly increasing the account complexity and work load both for CLS/SAI and the ROCs, we propose to cancel it and work instead to improve global cost policy for the benefit of all JTA participants.

JTA XXI

Parag. 6.6 "…this incentive had made no impact in 2001, with no platform transmitting outside the central band, and CLS had therefore withdrawn the incentive. The meeting nevertheless

recognized the importance of distributing transmissions throughout the available band, and in particular the advantages that would accrue to animal trackers if low-power transmissions were segregated in a designated and protected sub-band. It therefore requested its chairman to raise with OpsCom the possibility of changing PTT certification requirements to effectively force better management and use of the available band."

As reported in Section 3, parag. 2. Frequency Spreading, an OpsCom 36 action item was opened to address the issue of assigning frequencies in the SUA application process.

JTA XXII

The meeting was reminded that: Parag. 6(iv) "….an (OPSCOM) action item was opened to address the issue of assigning frequencies in the SUA application process."

Report from OPSCOM 37:

L. Mesnier of CLS reviewed the five year evolution of the use of the Argos-1 and Argos-2 bandwidth. It was noted that still over 35% of active platforms are clustered in the central part of the Argos 1 frequency band (401,650 Khz +/- 2 Khz). CLS/SAI continued promotional activities to educate users and ask manufacturers to voluntarily utilize all of the available bandwidth. The OPSCOM recognized the need to more encourage ARGOS beacon manufacturers to utilize the entire Argos frequency band since now four Argos 2 instruments are now in flight.

Nevertheless, it seems that the assignment of frequency channels is not optimal to better use the Argos 2 band and the meeting decided not to take any coercive decision as long as the situation continues to improve.

4.5 Factoring additional charges

JTA XXI

Paragraph 6.5 "The meting recalled that, in addition to the basic PTT year charges, there were other charges levied by CLS on ROCs, which provided what was essentially supplementary JTA income. It therefore requested CLS to undertake a study on the likely effects of factoring these additional charges (except for the unused ID charge) into the standard PTT charge, and to report this at JTA-XXII

JTA XXII

Paragraph 6(iii), "The meeting regretted that the study it had requested from CLS at its 21st session about existing additional charges had not been undertaken. It renewed its request that CLS prepare, before JTA-XXIII, a categorized list of those charges, including charges for additional locations, active platform fee, administrative charges, 25% surcharge for excess use of the contracted PTT-years, and the various value-added services provided on request by CLS, together with a proposal to introduce some or all of theses charges into the standard PTT charges at the end of the five year plan.

CLS is working on this proposal. The result of the study and the solution proposed will be presented at the meeting.

4.6 Downlink tariff policy

The proposed Downlink Tariff Policy will be presented at JTA XXIII

5. DEVELOPMENT PROJECTS OF THE ARGOS SYSTEM

These projects are presented in three categories:

5.1. Projects Completed:

Automatic Distribution System
New computers in Service Argos Inc.
Japanese Regional center (step 1)
New ID number strategy
Back up line of the French center
New GTS subsystem (step 1 and 2)
Connection of US center to Hawaii S Band station
Connection to the BOM telemetry from Perth
Improvement of location process
Argos GPS project
US center disks change
French processing center upgrade
US processing center data distribution over Internet
Australia real time distribution on GTS chain in Toulouse
Upgrade of the Australian center hardware
Third satellite real time data processing from Lannion and Australian antennas
US processing center upgrade
French processing center connected to Internet
Software migration on Alpha computers
Increased on-line data access (10 days)
Argos 2 (K,L, M) adaptation (Capacity, sensitivity, receiving stations, test....)
ID numbers administration
Requested by JTA (DBCP)
Reunion island real time distribution onto GTS chain in Toulouse
South Africa real time distribution onto GTS chain in Toulouse
Increase the size of Argos data base.
On-line access to GTS Technical file.
Access to Argos data using CD ROMS
Data flow control facilities
On-line and up to date Argos documentation
Japanese distribution center upgrade
Multi satellite real time data processing from Landover antenna
Extension of ID number processing capability
Direct distribution of buoy data to Meteo France in La Reunion
Data processing of JAMSTEC TRITON moored buoys
Specific algorithms for new Argos XBT devices
Argos 2001 project (Argos processing chain renewal) step1
On-line access to Argos technical files
BUFR code development

5.2. Projects Under Development (or to begin in 2003)

ADEOS II/Argos processing chain project
Argos 2001 project (Argos processing chain renewal) step 2
On-line access to ADS technical files
GTS distribution of sub-surface floats
GTS Subsystem Quality control
Improved delivery times (open action item)

5.3. Projects under study

Error detection/correction codes
Requested by JTA (DBCP)
Data sharing facilities
Access to both GPC.

ANNEX VII

FINAL PLAN PRESENTED AT JTA XXIII IN EURO

IN EURO	1998	1999	2000	2001	2002	2003 (August 31st)	2004	2005
Total costs								
FYP	8,54	8,72	8,89	9,07	9,25	9,44	9,62	9,82
Inflation	2%	2%	2%	2,14%	2,44%	2%	2%	2%
Actual and agreed for the future	**8,54**	**8,96**	**9,49**	**9,68**	**9,93**	***10,17*** (*)	***10,28***	***10,48***
JTA Share								
FYP "no more than"	60%	60%	58%	56,50%	55,00%	53,50%	52,00%	52,00%
Actual and agreed for the future	**60,00%**	**59,50%**	**57,50%**	**56,50%**	**55,0%**	***53,5%***	***52,0%***	***52,0%***
JTA costs (M€)								
FYP	5,13	5,23	5,15	5,12	5,09	5,05	5,00	5,11
Actual and agreed for the future	**5,13**	**5,33**	**5,46**	**5,47**	**5,46**	***5,44***	***5,34***	***5,45***
Non inflated income (constant number)								
FYP	4,79	4,80	4,80	4,80	4,80	4,80	4,80	4,80
PTTs in Excess								
Actual and agreed for the future	**4,79**	**4,76**	**4,78**	**5,11**	**5,58**	***5,20***	***5,70***	***5,79***
Subscription		**1121**	**1108**	**1136**	**1 145**	**1 237**	**1250**	**1270**
Number active PTT								
FYP			4000	4500	5000	5500	6000	6000
Actual and forecast			**4448**	**4571**	**5085**	***5500***	***5480***	***5720***
€/active PTT/month			1,52	3,05	4,57	6,10	7,62	7,62
Active PTT fixed fee (M€)			0,07	0,16	0,27	0,40	0,55	0,55
Actual and agreed for the future			**0,08**	**0,17**	**0,28**	***0,40***	***0,50***	***0,52***
Adjustment PTT years fee (€/year)								
FYP			30,49	60,98	91,47	121,96	152,45	152,45
Actual and agreed for the future			**30,49**	**60,98**	**91,47**	***91,47***	***91,47***	***91,47***
Adjustment (M€)								
FYP			0,03	0,07	0,10	0,15	0,19	0,19
Actual and agreed for the future			**0,03**	**0,07**	**0,10**	***0,11***	***0,11***	***0,12***
Annual loss								
FYP	0,26	0,43	0,25	0,09	-0,09	-0,31	-0,54	-0,44
Actual and agreed for the future	**0,26**	**0,57**	**0,57**	**0,13**	**-0,50**	***-0,27***	***-0,97***	***-0,98***
Accumulated loss (M€)								
FYP	0,26	0,69	0,93	1,02	0,93	0,62	0,08	-0,36
Actual and agreed for the future	**0,26**	**0,83**	**1,40**	**1,52**	**1,02**	***0,74***	***-0,23***	***-1,21***

(*) assuming 2,5% of combined inflation

TERMS AND CONDITIONS OF THE GLOBAL AGREEMENT FOR 2004

These Terms and Conditions outline costs to and services to be provided by Collecte Localisation Satellites (1) hereafter referred to as "CLS" and the

(2) *

jointly providing support to their own authorized users for the location and data processing associated with test and implementation of remote platforms communicating with Argos-capable satellites.

Each authorized user under this Agreement adheres to the procedures and conditions of the Argos system. In this regard, System Use Agreements should be submitted as soon as a programme is planned. Data distribution will be accomplished under the policies established by the ARGOS Operations Committee.

TIME PERIOD OF COVERAGE

These Terms and Conditions are valid for the time period beginning on **January 1 and ending on December 31, 2004**

DEFINITIONS

"Platform-year" is defined as 366 days of operation of an acceptable Platform Transmitter Terminal (PTT).

"Consultation of files" or "Access to the data" is defined as direct user access to the disk files either by telephone, telex or other public data networks.

The "Global Agreement" included all those participating countries which agree to the Terms and Conditions contained here in and which sign a similar Agreement with CLS prior to **March 1, 2004**.

(1) Collecte Localisation Satellites is the affiliate of CNES, in charge of operating the Argos system.

(2) Quote the country and its own organization in charge of the Agreement with regard to CLS. Hereafter defined by "ROC", i.e. a unique Representative Organization for a country or a group of countries.

SERVICES PROVIDED BY CLS

CLS will perform the following categories of services associated with PTT's of the authorized users:

(1) Location determination or both location determination and data collection for PTT's with a repetition period equal to or less than 120 seconds, application of

calibration curves to the data when appropriate, access to the data and distribution of the data according to the paragraph below entitled "Distribution of processed data" and archiving for three months;

(1a) Same as (1) but subject to the limitation under LIMITED USE SERVICE;

(2) Data collection for PTT's with a repetition period equal to or greater than 200 seconds, application of calibration curves to the data when appropriate, access to the data and the distribution of the data according to the paragraph below entitled "Distribution of processed data" and archiving for three months;

(3) Same service as (1) except the location and the data are not made available to the users unless they require the data and follow the conditions for back-up services;

(4) Same service as (2) except the data are not made available to the users unless they require the data and follow the conditions for back-up service.

USER CHARGES PER PLATFORM YEAR

Charges for authorized users under this Agreement are given in the Table entitled:

Summary of services and tariffs to users under the Global Agreement

Processing by CLS	Category	Repetition Period	Location computed	Data collection and sensor processing	On line data access	Data archiving	Tariff
Standard	1	≤ 120 sec	YES	YES	YES	YES	X
	2	>= 200 sec	NO	YES	YES	YES	X/2
Limited Use Service	1a	≤ 120 sec	YES	YES	YES	YES	*
Back Up	3	≤ 120 sec	YES	YES	NO	YES	2X/5
	4	=> 200 sec	NO	YES	NO	YES	X/5
Inactive Status	5		NO	NO	NO	NO	0

*Users will be charged the standard data collection and location rate for actual PTT.days used up to a maximum of ten per month

CLS agrees to charge those authorized users a rate of X = 3,850 Euro per platform-year for services defined in category (1), a rate as defined below under conditions for limited use service (paragraph 3) for services defined in category (1a), and a rate of X/2 for services in category (2).

It is agreed that CLS will record the number of platform-days and will send quarterly reports to the ROC which contain the number of platform-days accumulated up to the time of the reports.

These charges will remain the same for the time period of coverage stated above. It is possible that these costs may vary from year to year. Therefore, the ROC

and CLS will discuss and conclude Agreements concerning fees to be charged to users prior to establishing the Terms and Conditions for the Agreement valid for the following year.

CONDITIONS FOR LIMITED USE SERVICE

This service is intended for those users whose programmes operate effectively using a reduced number of data transmission. Platforms under this service category are supposed to use a randomly initiated duty cycle.

The following conditions must be met to qualify:

(1) Standard location or standard location and data processing (services) only apply;

(2) Platform can transmit no more than twenty-four (24) hours in any and all seventy-two (72) hours periods;

(3) Users will be charged the standard data collection and location rate for actual PTT.days used up to a maximum of ten per month;

(4) All platforms in a single programme must meet these conditions;

(5) Separate programme applications must be submitted.

CONDITIONS FOR BACK-UP SERVICE

(1) For PTTs covered by the "back-up service" the data are stored in a special data bank for 6 months, but will not be distributed to the user. All PTT's of this type will be counted at **2X/5** (category 3) or **X/5** (category 4) of the corresponding tariff under the Global Agreement;

(2) Each user can require CLS to grant access to the active computer files during a specified period. CLS will perform the required file modifications. During the specified period, the PTT's will be counted at the standard tariff (category 1 or 2) in the Global Agreement from the first of the month in progress. Each operation involving a file modification will be charged directly to the user as indicated under "Limitations on PTT's", paragraph 1;

(3) Upon request, CLS will provide printouts and/or floppy disks and/or CDs including the data from PTT's in the back-up mode for a specified period up to six months before the receipt of the order. For the specified period the PTTs will be counted at the standard tariff (category 1 or 2) in the Global Agreement;

(4) CLS will begin required services only after receipt of a detailed letter or e-mail specifying the service and the period required and the programme involved.

CONDITIONS FOR INACTIVE STATUS

This status is intended for those platforms that continue to transmit but for which the location or data collection are of no further use to the user or the community. The following conditions must be met to qualify:

(1) Inactive Status will apply if, and only if, Inactive Status is declared by the signatory of the System Use Agreement for platforms which continue to transmit beyond the programme termination. In that case, further charges will no longer be levied;

(2) The platforms must have operated in category (1), (1a) or(2) for a minimum of 2 months;

(3) Data or location information cannot be retrieved nor can the platform revert to any category of service;

(4) It is intended that Location and/or data collection may not be computed using a Local User Terminal or other direct readout facility.

ACTIVE PLATFORM FEE

(1) A monthly fee of **7.62 Euro** is applied to each active platform (those transmitting at least once per month).

(2) The yearly total is estimated in January, based on the active platform quantities from the previous year.

(3) An adjustment is made at the end of the year using actual figures.

DESIGNATED ROC

.....
.....
.....
.....
.....

ROC PARTICIPATION

For the period beginning 1 January 2004, the ROC will purchase for authorized users the guaranteed minimum **of * platform-years** in advance for 12 months service. On December 31, 2004**,** the final count of platform-years and fractions thereof which were actually used will be determined. The final cost adjustment over **the * platform-years** amount (if required) will be determined at the tariff defined above under "USER CHARGES PER PLATFORM-YEAR".

LIMITATIONS ON PTT'S

For those PTT's under these Terms and Conditions, there are certain limitations which are itemized below:

(1) The modification of platform characteristics (number of sensors, calibration curves, etc.) will require a charge defined in the annual price list issued by CLS, as attached to this Agreement. This charge and any additional financial cost resulting from these limitations will be paid by the users directly to CLS. Platform modifications within

the GTS processing subsystem are not charged. In order to enter, delete or modify a platform, a one-week period may be necessary. After entering a new platform, a minimum of one calendar month is required to change the processing category of that platform. However, two months are required to enter inactive status;

(2) As an average per individual Agreement and per category of service for the platforms covered under these Terms and Conditions, there will be no more than six (6) locations for two (2) satellites processing and nine (9) locations for three (3) satellite processing derived for repetition periods up to and including 120 seconds or no more than ten (10) data acquisitions for two (2) satellite processing and fifteen (15) data acquisitions for three (3) satellite processing for a platform-day, allowed without financial cost. If the service results in exceeding these limits, the cost will then be 1/25 of the tariff rate for each processing category multiplied by the number of processed platform-years for the programme number(s) concerned in each category. Funds for unused PTT-years under this agreement will be applied to offset these supplemental charges.

DISTRIBUTION OF PROCESSED DATA

(1) These Terms and Conditions do not cover the costs of special off-line arrangements made to provide the processed data back to the users. These must be made by the user directly with CLS;

(2) However, it is understood that CLS will continue to provide data from PTTs via the World Weather Watch Global Telecommunication System (WWW/GTS) of the World Meteorological Organization (WMO) according to procedures established by WMO.

PERIOD OF SYSTEM USE

When a location and/or data collection platform is initially received into the system in a 24-hour period, starting at 00.00 UTC, CLS will begin to accumulate the number of platform-days.

BILLING AND PAYMENT

(1) CLS will send a preliminary bill **for * (at least 70% of the total amount) in Euro**, in advance to the ROC, with the agreement to be signed. The indicated amount must include the additional 2,287 Euros required per Agreement for general and administrative costs. This latter cost will be waived if the number of platform-years initially agreed to is three or less. The number of active platforms charged by programme will be attached to the bill.

Final adjustment will be made after December 31, 2004**,** CLS will send a second bill to the **ROC for * Euro** with additional charges if necessary.

These bills should be sent to:

.....
.....
.....
.....
.....

(2) Payment by the ROC will be sent to:

CLS
8/10, rue Hermès - Parc Technologique du Canal
31526 RAMONVILLE Cedex
FRANCE
Account number : 30004 00762 00020666305 63
Bank : **BNP PARIBAS**

(3) Payment by USA ROC will be sent to:

Service Argos, Inc.
1801 McCormick Drive, Suite 10
Largo, Maryland 20774
USA

(4) Services which are charged directly to users as in paragraph (1) under "LIMITATIONS ON PTT's" and paragraph (1) under "DISTRIBUTION OF PROCESSED DATA" above require a purchase order directly between the individual user and CLS, as noted in paragraph (2) under "GENERAL CONDITIONS OF AGREEMENT" below.

GENERAL CONDITIONS OF AGREEMENT

(1) The designated ROC agrees to provide the initial list of users included in the Agreement and will update this list as appropriate.

(2) For services not provided within this Agreement, individual users under this Agreement must negotiate directly with CLS. Payments associated with these negotiations must be settled on receipt of the invoice. If these conditions are not met, CLS may stop the distribution of the user's processed data. Nevertheless, active platforms received by the system will be counted in the platform-year total. Should this situation occur, CLS will immediately notify the ROC.

(3) Authorized users are defined as those implementing PTTs which are government funded. However, other users of agencies or organizations which are considered "non-profit" may be authorized. PTTs funded partly or entirely by private companies or organizations cannot be included in the conditions of this Agreement, even if data are supplied free of charge to national or international organizations.

If these rules are not followed, CLS may stop the distribution of this user's data. Should this situation occur, CLS will immediately notify the ROC. Nevertheless, active PTTs received by the system will be counted in the platform-year total and data stored.

(4) All authorized users must sign a purchase order for each programme, either for the current year or for the duration of the programme, in order to clearly specify the services they request, whether these services are provided under this Agreement or not.

(5) The terms of this Agreement are based on a planned minimum purchase of **1,386platform-years** by all participants in the Global Agreement for the year 2004. Each ROC must finalize their commitment by **January 15, 2004**. Each ROC is responsible to assure that the signed Agreement for the amount committed on **January 15, 2004** is

received by CLS before **March 1, 2004**. On and after this date, CLS will not take into account other Agreements and will invoice according to the above conditions.

(6) As an incentive to encourage expansion of individual programmes, a bonus scheme will operate as follows:

a) Where the number of platform-years contracted by the country continues to equal or exceed the estimate confirmed and recorded at the **JTA-XVII** meeting**,** the contracted number will be increased by 82% for the purpose of calculating any excess use.

b) For countries not meeting the requirement in (a) above, but having benefited of a 35% bonus during the year preceding immediately that of these present Terms and Conditions, and whose number of platform-years contracted equals or exceeds the number signed under the preceding Terms and Conditions, the contracted number will be increased by 82% for the purpose of calculating any excess use.

c) For countries not meeting the requirements in (a) and (b) above, but whose number of platform-years contracted equals or exceeds the number signed under the preceding Terms and Conditions, the contracted number will be increased by 35% for the purpose of calculating any excess.

ROCs are responsible for the allocation of the bonus within their country, but shall not transfer PTT-years between themselves to take advantage of this allowance.

(7) Each participating country will be charged for excess use over and above the contracted number of PTT-years (inflated by the above bonus as appropriate):

a) at the tariff defined under "USER CHARGES PER PLATFORM-YEAR" divided by 1.35 (one point thirty five), if the participating country benefits of 82% bonus during the year;

b) at the tariff defined under "USER CHARGES PER PLATFORM-YEAR" in all other cases.

These charges will be applied to the second invoice sent at the end of the year.

(8) VAT will be charged to EU Members in accordance with EU rules.

NORMAL TARIFFS CHARGED BY CLS

As an indication of additional costs for services not covered by this Agreement, the normal tariffs charged will be provided by CLS to the ROC.

Signed by the designated ROC	(Date)	Signed by CLS	(Date)

NATIONAL REPORTS ON CURRENT AND PLANNED PROGRAMMES

The following national reports were received by the Secretariat :

Country
Australia
Canada
Finland
Korea (Republic of)
Netherlands (the)
New Zealand
South Africa
Sweden
Turkey
United Kingdom
USA

Country: **AUSTRALIA**

For the year 2004 it is anticipated that Australian participants will operate a total of approximately **20 Argos programs** (see below). Estimated system usage will exceed the **42 PTT-yr** threshold required for Australia to be eligible for the bonus. It is estimated that actual system usage may be as high as **50 PTT-yrs**.

A. Australian Bureau Of Meteorology

Program	**Description**	*Est. PTT-yr*
0085	Drifting Buoy (FGGE type)	7.0
9085	SVP-B drifters	10.0
0086	Automatic Weather Station (data only X/2)	1.00
30085	Expendable Bathythermograph (XBT)	0.95
2039	Argo floats	2.0
	Total PTT-yr requirement:	**20.95**

B. AAD

Program		
0366	Automatic Weather Station (data only X/2)	11.0
0973	Foraging Adelie Penguins	0.4
1155	Sea Ice Processes	2.0
2440	Marine Mammal Ecology	8.0
	Total PTT-yr requirement:	**21.4**

C. Animal trackers and Other Environmental Programs (excluding AAD)

Program		
1527	Seal tracking	0.7
2006	Seal tracking	1.0
2062	Flying Foxes	0.5
2763	Marine Science Transport Models	0.8
1747	Water Birds	2.5
TBA	Wild Dog Tracking	1.0
2544	Oceanic Cetacean Program in Indonesia	0.04
527	Dugong Tracking	0.3
10527	Dugong Foraging	0.8
	Total PTT-yr requirement:	**7.64**

Country: Canada

Year: 2003

A. Agency or programme: Institute of Ocean Sciences of Fisheries and Oceans Canada

Purpose of programme: 2442 ARGO floats to track ocean currents(Freeland)

Numbers and types of platforms: (a) Deployed current year: 52

(b) Planned next year: 53

Estimated number of PTT-years: (a) Current year:7.5 Equi

(b) Next year: 8.0

Purpose of programme: 704 Mooring tracking(Juhasz)

Numbers and types of platforms: (a) Deployed current year: 15

(b) Planned next year: 17

Estimated number of PTT-years: (a) Current year: 0.5

(b) Next year: 0.5

Purpose of programme: 496 Tracking moorings for chemical sampling(Wong)

Numbers and types of platforms: (a) Deployed current year: 1

(b) Planned next year: 1

Estimated number of PTT-years: (a) Current year: 0.1

(b) Next year: .1 Equi

Purpose of programme: 411, 30411, 9411 Witness buoy for moorings(Thomson)

Numbers and types of platforms: (a) Deployed current year: 1

(b) Planned next year: 1

Estimated number of PTT-years: (a) Current year: 0.1 Equi

(b) Next year: 0.1Equi

B. Agency or programme: Bedford Institute of Oceanography

Purpose of programme: 00076 Environment Monitoring: Ice research and salmon aquaculture

Numbers and types of platforms: (a) Deployed current year: 25 (data and location)

(b) Planned next year: 25 (data and location)

Estimated number of PTT-years: (a) Current year: 1.36

(b) Next year: 0.99

C. Agency or programme: Institut Maurice-Lamontagne

Purpose of programme: 00788 DPO Marine Mammal Research
09788 Marine Mammal Research LUS

Numbers and types of platforms: (a) Deployed current year:28(limited use)

(b) Planned next year: 164(limited use)

Estimated number of PTT-years: (a) Current year: 3.4

(b) Next year: 11.1

D. Agency or programme: Freshwater Institute
Purpose of programme: 01142 Beluga Telemetry

Numbers and types of platforms: (a) Deployed current year: 4

(b) Planned next year: 0

Estimated number of PTT-years: (a) Current year: 0.2

(b) Next year: 0.0

E. Agency or programme: Environment Canada
Purpose of programme: 00323 Pacific PAPA
00626 Pacific C-NOMAD

00627 International Arctic Buoy Program
00693 Atlantic Buoy Program
00633 Ice Floe Drift
09633 Ice Floe Drif (Sub-program)

Program 323	Pacific Region	16 b/u service
Program 627/693	Prairie Region	2 b/u 3 standard service
Program 633	Ice Branch	1 b/u and 15 standard service

Numbers and types of platforms: (a) Deployed current year: 25

(b) Planned next year: 26

Estimated number of PTT-years: (a) Current year: 26

(b) Next year: 8.2

F. Agency or programme: University of Saskatchewan

Purpose of programme: 00762 Polar Bears in NWT
08762 Caribou in NWT
09762 Polar Bears in NWT (Sub-Program)

Numbers and types of platforms: (a) Deployed current year: 8; no new collars.

(b) Planned next year: .0

Estimated number of PTT-years: (a) Current year: 1.0

(b) Next year: 0.0

G. Agency or programme: NFLD/Department of Forest Resource & Agr

Purpose of programme: 00561 Labrador DND Wildlife Studies
09561 Newfoundland Black Bear studies

Numbers and types of platforms: (a) Deployed current year: 7

(b) Planned next year: 7

Estimated number of PTT-years: (a) Current year: 3.0

(b) Next year: 2.5

H. Agency or programme: Parks Canada / Kluane National Park & Reserve

Programme Number: 01015

Purpose of programme: Grizzly Bear Monitoring

Numbers and types of platforms: (a) deployed current year: 1

(b) planned next year: 1

Estimated number of PTT-years: (a) current year: .20

(b) next year: .10

I. Agency or programme: National Defence Headquarters

Purpose of programme: 0959 Radio-Tracking of Migratory Caribou Herds
2497 Woodland Caribou Tracking
2593 Osprey/Bald Eagle Tracking

Numbers and types of platforms: (a) Deployed current year: 39

(b) Planned next year:

Estimated number of PTT-years: (a) Current year: 5

(b) Next year: 5 (est.)

J. Agency or programme: Government of Northwest Territories

Purpose of programme: 01572 Blue Nose Caribou Herd Ranger User - LUS
09572 Blue Nose Caribou Herd Ranger User - NON LUS
11572 NW Victoria Island - LUS
21572 Banks Island - LUS
2445 Grizzly Bear tracking

Numbers and types of platforms: (a) Deployed current year: 42, 30 collars on grizzly bears for 6 months, barren land caribou studies to continue

(b) Planned next year:

Estimated number of PTT-years: (a) Current year: 16

(b) Next year: 13 (est.)

K. Agency or programme: Government of Northwest Territories

Purpose of programme: 00606 Satellite Telemetry of Bathurst caribou
09606 Satellite Telemetry of Nahanni caribou
30606 Satellite Telemetry of Victoria Island Caribou

Program 30606 Victoria Island Caribou

Numbers and types of platforms: (a) Deployed current year: 3
(b) Planned next year: .6

Program 9606 Nahanni caribou

Numbers and types of platforms: (a) Deployed current year:16 PTT's

(b) Planned next year: 16

Program 00606 Bathurst caribou

Numbers and types of platforms: a) Deployed current year: 19

b) Planned next year:

Estimated number of PTT-years: a) Current year: 6.0
b) Next year: 5 (est.)

L. Agency or programme: Environment Canada

Purpose of programme: 01375 Seasonal Movements of Osprey Nesting

Numbers and types of platforms: a) Deployed current year: 0

b) Planned next year: 0

Estimated number of PTT~years: a) Current year: 0

b) Next year: 0

M. Agency or programme: GNWT - Resource & Wildlife Div.
Purpose of programme: 01709 NWT Wolf/Wolverine Studies

Numbers and types of platforms: a) Deployed current year: 0

b) Planned next year: 0 Unless small wolverine collar is developed.

Estimated number of PTT years: a) Current year: 0.0

b) Next year: .0

N. Agency or programme: Canadian Wildlife Service, Environment Canada

Purpose of programme: to track sea ducks from breeding grounds to wintering areas

Numbers and types of platforms: a) deployed current year(2003): 0

b) planned next year(2004): 0

Estimated number of PTT-years: a) current year: 0

b) next year: 0

O. Agency or programme: Defense Research Establishment Atlantic

Purpose of programme: (2176) Environmental Research

Numbers and types of platforms: a) Deployed current year: 1

b) Planned next year: 0

Estimated number of PTT-years: a) Current year: 0.1. Equi

b)Next year: 0.0 Equi

P. Agency or programme: GNWT / Resources & wildlife

Purpose of programme: 01816 Keewatin wildlife Monitoring Program

Numbers and types of platforms: a) Deployed current year: 20

b) Planned next year:

Estimated number of PTT-years: a) Current year: 6.0

b)Next year: 4.0 (est.)

Q. Agency or programme: University of Alberta, Canada Wildlife Service

Purpose of programme: 00947 Habitat Use by Polar Bears in Western Hudson Bay
08947 Habitat Use by Polar Bears in Western Hudson Bay
09947 Habitat Use by Polar Bears in Western Hudson Bay

Numbers and types of platforms: a) Deployed current year: 10

b) Planned next year: 0

Estimated number of PTT-years: a) Current year: 2

b) Next year: 0

R. Agency or programme: Government of Yukon

Purpose of programme:
This project will document seasonal range use and migration patterns of the Porcupine Caribou Herd (Rangifer tarandus granti) , numbering 123,000 animals. Annual herd movements cover an area of approximately 250,000 square kilometers, making frequent conventional radio telemetry locations expensive. With financial support of co-operating agencies, we've maintained satellite collars on the herd since October 1997. Location data have helped us document seasonal ranges used, timing of migration, and helped us determine the geographical areas we need to travel to in order to conduct our fieldwork. We maintain a web site that shows the locations of the satellite collared caribou and provides some background information on the herd and its management. The data is also serves as an educational tool for internet based school programs.

Programme Number: 1207

Numbers and types of platforms: (a) deployed current year(2003): 10

(b) planned next year(2004): 11

Estimated number of PTT-years: (a) current year: 1.504

(b) next year: 1.869

Programme Number: 9207

Purpose of programme: Porcupine Caribou Backup

Numbers and types of platforms: (a) deployed current year(2003): 3 (backup location)

(b) planned next year(2004): 3 (backup location)

Estimated number of PTT-years: (a) current year: 0.1

(b) next year: 0.1

Programme Number: 21207

Purpose of programme: Yukon North Slope Muskox

Numbers and types of platforms: (a) deployed current year(2003): 9 (standard location)

(b) planned next year(2004): 9 (standard location)

Estimated number of PTT-years: (a) current year: 1.5

(b) next year: 1.5

S. Agency or programme: Department of National Defence

Purpose of programme: 01194 Environmental Measurements in an Ocean Eddy

Numbers and types of platforms: a) Deployed current year: 0

b) Planned next year: :0

Estimated number of PTT-years: a) Current year: 0.0 Equi

b) Next year: 0.0

T. Agency or programme: Department of National Defence

Purpose of programme: 02019 Self Locating Datum Marker Buoy. Location of personnel in open water after a shipping disaster. The beacon allows rescue craft to focus their search patterns into specific areas by emulating the drift patterns of either a person floating in the water or a four-man life raft.

Numbers and types.of platforms: a) Deployed current year: 45 (if needed), standard service

b) Planned next year: 45 (if needed), standard service

Estimated number of PTT-years: a) Current year: 0.5 Equi

b) Next year: 0.617

U. Agency or programme: Government of Nunavut, Canada

Purpose of programme: 02080 Survival of Dolphin-Union Caribou

Numbers and types of platforms: a) Deployed current year: 25

b) Planned next year:

Estimated number of PTT-years: a) Current year: 5.0

b) Next year: 2.0 (est.)

V. Agency or programme: DFO Canadian Coast Guard

Purpose of programme: 01387 SAR DMB Development

Numbers and types of platforms: a) Deployed current year: 30

b) Planned next year:

Estimated number.of PTT-years: a) Current year: .5

b) Next year: .5

W. Agency or programme: Environment Canada

Purpose of programme: 02027 Great Black-backed gulls on the Great Lakes.

Numbers and types of platforms: a) Deployed current year: 2

b) Planned next year: 1

Estimated number of PTT-years: a) Current year: 1.3

b) Next year: 0.3

X. Agency or programme: Canadian Wildlife Service of Environment Canada

Purpose of programme: (2334)Eider Duck tracking.

Numbers and types of platforms: a) Deployed current year: 10

b) Planned next year:

Estimated number of PTT-years: a) Current year: .4 Equi

b)Next year: .4 (est.)

Y. Agency or programme: 02589 Fish an Wildlife Branch of the Yukon

Purpose of programme: (new program) Moose tracking

Numbers and types of platforms: a) Deployed current year: 10

b) Planned next year: 5

Estimated number of PTT-years: a) Current year: 1.6 Equi

b) Next year: 1.6 Equi

Y. Agency or programme: Alberta Fish and Wildlife Service

Purpose of programme: (2599) Grizzly bear management.

Numbers and types of platforms: a) Deployed current year: 5

b) Planned next year: 11

Estimated number of PTT-years: a) Current year: 0.4 Equi

b) Next year: 1.5 Equi

Z. Agency or programme: Ontario Ministry of Natural Resources

Purpose of programme: (2587) Kag Lake caribou tracking.

Numbers and types of platforms: a) Deployed current year: 2

b) Planned next year: 2

Estimated number of PTT-years: a) Current year: .1.48

b) Next year: 0.504

AA. Agency or programme: British Columbia Ministry of the Environment, Lands and Parks

Purpose of programme: (1743) Peregrine Falcon tracking.

Numbers and types of platforms: a) Deployed current year: 4

b) Planned next year: 0

Estimated number of PTT-years: a) Current year: .1

b) Next year: 0

AB. Agency or programme: Axys Environmental Systems Program # 1724

Purpose of programme: Oceanographic Observations

Numbers and types of platforms: (a) deployed current year: 3 Buoys

(b) planned next year: 3 buoys

Estimated number of PTT-years: (a) current year: .411

(b) next year: .3726

AC. Agency or programme: UBC Behaviour@Sea Project 2727

Purpose of programme: Marine mammal tracking

Numbers and types of platforms: (a) deployed current year: 6

(b) planned next year: 12 (including the 6 from 2003)

Estimated number of PTT-years: (a) current year: 0.49

(b) next year: 1.97

Country: Finland

Year: 2003/2004

A. Agency: FINNISH INSTITUTE OF MARINE RESEARCH

Purpose of programme: Meteorological observations (Program 815)

Numbers and types of platforms: (a) deployed current year: 3, drifting-buoy
(b) planned next year: -

Estimated number of PTT-years: (a) current year: 1,4
(b) next year: -

Purpose of programme: Wave studies (Program 1626)

Numbers and types of platforms: (a) deployed current year: 3, moored buoy
(b) planned next year: 2, moored buoy

Estimated number of PTT-years: (a) current year: 0,7
(b) next year: 0,7

B. Agency: MINISTRY OF ENVIRONMENT

Purpose of programme: Fjell goose migration (Program 1377)

Numbers and types of platforms: (a) deployed current year: 6, animal tracker
(b) planned next year: - , animal tracker

Estimated number of PTT-years: (a) current year: 0,1
(b) next year: -

C. Agency: FINNISH MUSEUM OF NATURAL HISTORY

Purpose of programme: Migration of Finnish ospreys (Program 2419)

Numbers and types of platforms: (a) deployed current year: 6, animal tracker
(b) planned next year: 6, animal tracker

Estimated number of PTT - years: (a) current year: 1,2
(b) planned next year: 0,8

Special comments (if any):

Country: **Republic of KOREA**

Year: 2003

A. Agency or programme: 2397(METRI, KMA)

Purpose of programme: To implement Argo project of METRI, KMA

Numbers and types of platforms: (a) deployed current year:31

(b) planned next year: 15

Estimated number of PTT-years: (a) current year: 2.7

(b) next year: 3.2

B. Agency or programme: 1002(KORDI)

Purpose of programme: To measure coastal currents and circulation in the Yellow and East China Seas

Numbers and types of platforms: (a) deployed current year: 13

(b) planned next year: 6

Estimated number of PTT-years: (a) current year: 1.0

(b) next year: 1.3

C. Agency or programme: 2096(KORDI)

Purpose of programme: Argo-KORDI and East Sea Circulation

Numbers and types of platforms: (a) deployed current year: 28

(b) planned next year: 15

Estimated number of PTT-years: (a) current year: 1.0

(b) next year: 2.0

Special comments (if any):

Country: The Netherlands

Year: 2003

A. Agency or programme: Royal Netherlands Meteorological Institute (KNMI)

Purpose of programme: EGOS Drifting Buoy Programme (0436)

Numbers and types of platforms: (a) deployed current year: 4 SVP-B drifters

(b) planned next year: 3 (4) SVP-B drifters

Estimated number of PTT-years: (a) current year: 3

(b) next year: 2.6

B. Agency or programme: Institute for Marine and Atmospheric Research (IMAU)

Purpose of programme: Land ice change and sea level change monitoring (1238)

As a contribution to the European Project on Ice Coring in Antarctica (EPICA) the IMAU has placed at one time a maximum of eight Automatic Weather Stations (AWS) in Dronning Maud Land, Antarctica. These AWSs were installed on a transsect ranging from the coast to the plateau Amundsenisen, along the Swedish research stations Wasa and Svea. The goal of this project is to extend the knowledge of the climatological conditions of this particular part of Antarctica and to obtain a better understanding of the surface energy and mass balance of the Antarctic ice sheet. Therefore surface and subsurface (bore holes up to 100 meters) temperatures, relative humidity, wind speed and direction, snow height, air pressure, short and long wave incoming and outgoing radiation is measured. Together with GPS positioning the data are transmitted as two hour averaged values through the ARGOS system. Four stations will be closed at the end of 2002. One of these stations might be reinstalled at the Norwegian basis Trol in 2003.

Numbers and types of platforms: (a) deployed current year: 4 Telonics PTTs

(b) planned next year: 4 Telonics PTTs

Estimated number of PTT-years: (a) current year: 3.6

(b) next year: 2.6

C **Agency or programme** ALTERRA, Dept. of Aquatic Ecology

Purpose of programme: Seals feeding I (1877)

The harbour seal population in the Dutch Wadden Sea has increased exponentially over the past 10 years. Mainly because of the difficulty of obtaining information, very little is known about the diet of these animals, let alone the potential effect this population growth has on the (commercial) fish stocks. This project, which is commissioned by the Ministry of Agriculture, nature management and fisheries of the Netherlands, is designed to obtain data on possible feeding locations of the seals and on the fish species present in these seas.

To achieve this, 8 harbour seals will be equipped with satellite tags to determine their location and dive data. Four animals are released during autumn and winter 2002 and four during spring and summer 2003. Concurrently, fish will be sampled in the areas where seals are located and assumed to feed (based on the diving data). This will yield a first insight in possible dietary preference, and mostly in preferred feeding locations. In addition to this, several ways to directly the diet of the seals will be explored.

Number and types of platforms:	(a) deployed current year:	4 Telonics ST-16 PTTs
	(b) planned next year:	10 Telonics ST-16 PTTs
Estimated number of PTT-years:	(a) current year:	0
	(b) next year:	0.6

D **Agency or programme:** Royal Netherlands Academy of Arts and Science (NIOO), Netherlands Institute of Ecology

Purpose of programme: Fluxes of Carbon and Nitrogen in Antarctic Terrestrial Ecosystems FATE (<number>)

Study of the relative importance of the various sources of carbon and nitrogen, the extent of the decomposition process, the rate of transport of matter into and through the terrestrial ecosystem and the water use efficiency. Argos will be used to transmit status information of the equipment.

Numbers and types of platforms:	(a)	deployed current year:	0
	(b)	planned next year:	1 SEIMAC tx
Estimated number of PTT-years:	(a)	current year:	0
	(b)	next year:	0.8

Special comments (if any):

Country **NEW ZEALAND** Year **2003**

A. Agency : **Meteorological Service of New Zealand Ltd (MSNZ)**

Purpose of programme: **Real-time Drifting Buoy data for weather forecasting**

Number and types of platforms: (a) deployed current year: 3 drifters
(b) planned next year: 3 drifters

Estimated number of PTT-years (a) current year: 7.6 PTT years
(b) next year: 7 PTT years

B. Agency : **Department of Conservation**

Purpose of programme: **New Zealand Sea Lion tracking**

Number and types of platforms: (a) deployed current year: 7 animal PTTs
(b) planned next year: 10 animal PTTs

Estimated number of PTT-years (a) current year: 0.5 PTT years
(b) next year: 2.0 PTT years

C. Agency: **Department of Conservation**

Purpose of programme: **Albatross Tracking**

Number and types of platforms: (a) deployed current year: 12 bird PTTs
(b) planned next year: Nil

Estimated number of PTT years- (a) current year: 2.7 PTT years
(b) next year: Nil PTT years

D. Agency: **NIWA Christchurch**

Purpose of programme: **Foraging habits of Buller's Mollymawks**

Number and types of platforms: (a) deployed current year: 3 bird PTTs
(b) planned next year: 4 bird PTTs

Estimated number of PTT-years (a) current year: 0.02 PTT years
(b) next year: 0.2 PTT years

E. Agency: **NIWA Christchurch**

Purpose of programme: **Eel Tracking with pop-up tags**

Number and types of platforms: (a) deployed current year: Nil
(b) planned next year: 2 tags

Estimated number of PTT-years (a) current year: Nil PTT years
(b) next year: 0.1 PTT years

F. Agency: **Massey University**

Purpose of programme: **NZ Falcon Tracking Programme**

Number and types of platforms: (a) deployed current year: 1 bird PTT
(b) planned next year: 1 bird PTT

Estimated number of PTT-years (a) current year: 0.3 PTT years
(b) next year: 0.3 PTT years

G. Agency: **NIWA Wellington**

Purpose of programme: **Ocean Fronts Drifter Buoys**

Number and types of platforms: (a) deployed current year: 3 buoys
(b) planned next year: 3 buoys

Estimated number of PTT-years (a) current year: 0.1 PTT years
(b) next year: 0.1 PTT years

Country: SOUTH AFRICA

Year: 2003

A. Agency or programme: South African Weather Service – Program 243

Purpose of programme: Deployment of drifters to provide real-time data for operational Weather Forecasting

Numbers and types of platforms:
(a) deployed current year: A total of 43
36 SVPB and 7 SVP drifters
17 Indian Ocean, 26 South Atlantic

(b) planned next year: A total of 48.
39 SVPB and 9 SVP drifters

Estimated number of PTT-years:
(a) current year: 26.2

(b) next year: 24.8

B. Agency or programme: Scripps Institute Oceanography/Benefit Program - 2065

Purpose of the programme: Deployment of drifters in coastal water off Namibia and Angola. Research program, directed at the circulation of Surface water in the Benguela system and its relevance to fisheries

Numbers and types of platforms:
(a) deployed current year: 6 SVP drifters

(b) planned next year: 6 SVP drifters

Estimated number of PTT years
(a) current year: 0,5 years

(b) next year: 1.0 years

C. Agency or programme: Marine and Coastal Management - Program 1237

Purpose of the programme: Tracking seals, dolphins

Number and types of platforms:
(a) deployed current year : 14 transmitters

(b) planned next year: 20 transmitters

Estimated number of PTT years
(a) current year : 1,5 years

(b) next year: 2 years

D Agency or programme: Marine and Coastal Management - Program 1323

Purpose of the programme: Tracking seabirds

Number and types of platforms: (a) deployed current year : 6 transmitters

(b) planned next year: 6 transmitters

Estimated number of PTT years (a) current year : 0,5 years

(b) next year: 1,0 years

Special comments (if any):

Country: Sweden

Year: 2004

A. Agency or programme: 1870 (Susanne Åkesson, Lund University)

Purpose of programme: Tracking migration of sea turtles

Numbers and types of platforms:	(a)	deployed current year: 0
	(b)	planned next year: 4
Estimated number of PTT-years:	(a)	current year: 0
	(b)	next year: 0.6

B. Agency or programme: 2398 (Susanne Åkesson, Lund University)

Purpose of programme: Tracking migration of albatrosses

Numbers and types of platforms:	(a)	deployed current year: 3
	(b)	planned next year: 3
Estimated number of PTT-years:	(a)	current year: 1.0
	(b)	next year: 1.0

C. Agency or programme: 1204 (Thomas Alerstam, Lund University)

Purpose of programme: Studies of bird migration and orientation

Numbers and types of platforms:	(a)	deployed current year: 7
	(b)	planned next year: 5-10
Estimated number of PTT-years:	(a)	current year: 1,5
	(b)	next year: about 2

Special comments (if any):

Country: UK National Report 2003

Organisation	**Purpose of programme**	**Platforms deployed in 2003**	**New platforms planned for 2004**	**Estimated PTT-yr usage for 2004**
British Antarctic Survey	Seabird tracking	21 Microwave 30g	21 Microwave 30g	1.0
	Krill transport	20 drifters	0	7.3
	Ice shelf studies	3 fixed stations	3 fixed stations	1.5
	Sea mammal and penguin tracking	10 Telonics ST10 9 Telonics ST18	6 Telonics ST10 6 Telonics ST18 9 Kiwisat 101 5 Wildlife SPOT3	2.9
Centre for Environment Fisheries and Aquaculture	Oceanographic research	10 drifters 2 tuna tags	6 drifters	2.7
Falklands Conservation	Penguin tracking	10 tags	10 tags	0.7
Met Office	Moored buoy network	11	11	11
	Drifting buoy network	26 SVP-B/BW drifters	34 SVP-B/BW drifters	39
	Argo float programme	70 Argo floats	40 Argo floats	10
Plymouth Marine Laboratory	Tracer patch monitoring	1 GPS/Argos drifter	1 GPS/Argos drifter	0.1
Royal Society for the Protection of Birds	Bird tracking	3 tags	3 tags	0.6
Scottish Association for Marine Science	Polar oceanographic research	1 float	1 float	0.1
	Mooring monitoring	2	1	0.1
Sea Mammal Research Unit	Sea mammal tracking	~40 tags	60 tags	15
University of Exeter	Turtle tracking	4 Sirtrack 8 Telonics 2 SMRU	7 Sirtrack 2 Telonics 1 SMRU	1.7
University of Leeds	Seabird tracking	5	0	0
University of Southampton	Oceanographic research	1 waverider 1 drifting sediment trap 2 floats 1 AUV	1 float	1.5
University of Wales	Turtle tracking	8 SMRU tags	2 SMRU tags	1.5
University of York	Whale shark tracking	5	5	2

Publications

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Country: United States of America

Year: CY 2004

The projection for JTA use in CY 2003 (with 9 months of actual use) is 1475 Ptt/yr, an increase of 5% over CY 2002. The service category breakdown for this estimate is as follows:

CY 2003 Total Projected Use 1475 Ptt/yr

- Standard Location 1090 Ptt/yr (74% of total)
- Standard Collection 70 Ptt/yr (5%)
- Limited Use 280 Ptt/yr (19%)
- Inactive Status 6 Ptt/yr (0%)
- Backup Location 25 Ptt/yr (2%)
- Backup Collection 4 Ptt/yr (0%)

CY 2004 Total Projected Use 1710 Ptt/yr

The projection for CY 2004 represents an increase of 16% over CY 2003. The United States plans to deploy over 5,400 platforms carrying Argos transmitters in nearly every ocean and other remote area of the world for over 500 meteorological, oceanographic, biological, and other scientific programs. The platforms include about 2,500 drifting buoys, 1,200 profiling floats, 300 moored buoys, 720 marine animals, 520 birds, 200 terrestrial animals, 20 land stations, and 10 balloons. The following is a list of agencies/organizations using the Argos System with a description of the purpose and the estimated Ptt/years, number of platforms, and type of platforms for CY 2004:

A. National Oceanic and Atmospheric Administration

1. Oceanic and Atmospheric Research -- Meteorological and oceanographic observations for monitoring and prediction of climate change. Study biological and physical oceanographic processes.

990 Ptt/yr -- 1710 Platforms: 900 profiling float, 665 drifting buoys, 120 moored buoys, 25 marine biology

2. National Weather Service -- Operational meteorological and oceanographic data.

43 Ptt/yr -- 108 Platforms: 92 moored buoys, 16 drifting buoys

3. National Marine Fisheries Service -- Determine the distribution, migration, and behavior of marine animals and study marine ecological systems.

45 Ptt/yr -- 275 Platforms: 250 marine biology, 20 moored buoys, 5 drifting buoys

4. National Environmental Satellite and Data Information Service -- Meteorological and oceanographic observations for Arctic analysis and forecasting.

12 Ptt/yr -- 17 Platforms: 17 drifting buoys

5. National Ocean Service -- Study ecological systems and oil spill response.

15 Ptt/yr -- 45 Platforms: 35 drifting buoys, 10 moored buoys

B. National Aeronautics and Space Administration -- Study ocean currents and birds.

5 Ptt/yr -- 20 Platforms: 10 balloons, 10 birds

C. Department of Transportation - U.S. Coast Guard -- To collect current and sea surface temperature data for iceberg movement and deterioration and search & rescue operations. To detect oil pollution from shipping.

40 Ptt/yr -- 920 Platforms: 920 drifting buoys

D. National Science Foundation –
Biological Oceanography Program -- Study marine ecological systems.
Physical Oceanography Program -- Provide meteorological and oceanographic observations for physical oceanographic and circulation studies.
Polar Programs -- Circulation, physical oceanography, meteorology, ecology, and ice studies.

90 Ptt/yr -- 900 Platforms: 500 drifting buoys, 300 profiling floats, 50 marine biology, 40 birds,
10 land stations

E. Department of Agriculture -- Study the daily activity and movements of American wildlife, e.g., reindeer, lynx, pelicans, goshawks, vultures, cormorants, etc.

18 Ptt/yr -- 55 Platforms: 40 birds, 15 terrestrial biology

F. Department of Energy - EML, Sandia/NMSU/SWTDI, LANL -- Air filter samples and monitoring airborne radon, cosmic rays, nuclear radiation, and meteorological conditions.

3 Ptt/yr -- 10 Platforms: 10 moored buoys

G. Department of Interior

1. USGS - Biological Resources Division - Monitor the movement and activities of various species of birds, terrestrial animals, and marine animals and the associated environmental variables that influence these patterns.

55 Ptt/yr -- 270 Platforms: 200 birds, 50 terrestrial biology, 20 marine biology

2. Fish and Wildlife Service -- Determine raptor and crane movements and habitat and marine and terrestrial animal tracking.

15 Ptt/yr -- 60 Platforms: 25 terrestrial biology, 20 birds, 15 marine biology

3. National Park Service -- Study the migration of marine and terrestrial biology

10 Ptt/yr -- 30 Platforms: 10 birds, 10 marine biology, 10 terrestrial biology

H. Department of Defense

1. Naval Oceanographic Office -- Collection of real-time meteorological and oceanographic data for operational analysis and forecasting.

100 Ptt/yr -- 250 Platforms: 250 drifting buoys

2. Office of Naval Research -- Measurements and studies of surface and subsurface oceanographic parameters and marine animal migrations.

40 Ptt/yr -- 100 Platforms: 45 drifting buoys, 5 moored buoys, 50 marine biology.

3. Other -- Measurements and studies of surface and subsurface oceanographic parameters and animal tracking.

5 Ptt/yr -- 10 Platforms: 4 drifting buoys, 2 birds, 2 marine biology, 2 terrestrial biology

I. Non - U.S. Government (state and local governments, universities, laboratories, institutions, and non-profit organizations) -- Monitor the movement and activities of various species of birds, terrestrial animals, and marine animals and the associated environmental variables that influence these patterns, oceanographic studies, and weather and climate observations.

225 Ptt/yr -- 750 Platforms: 90 drifting buoys, 50 moored buoys, 10 land stations, 300 marine biology, 200 birds, 100 terrestrial biology