



SCRAG/3 - REPORT

INTERNATIONAL CIVIL AVIATION ORGANIZATION

**REPORT OF
THE THIRD MEETING OF THE SADIS COST RECOVERY
ADMINISTRATIVE GROUP
(SCRAG/3)**

(Bracknell, 5 and 6 November 2002)

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INTRODUCTION

Place and duration

i.1 The Third Meeting of the SADIS Cost Recovery Administrative Group (SCRAG) was held, at the invitation of the UK Met Office, at the UK Met premises in Bracknell on 5 and 6 November 2002.

Attendance

i.2 The Meeting was attended by three of the five Members of the Group and two of the three Observers. The list of participants is in **Appendix A** and a list of working papers issued for the Meeting is in **Appendix B**.

Officers and Secretariat

i.3 **Mr. L.J.N. Rolvink**, from the Netherlands, was Chairman of the Meeting. **Mr. J.C. Bugnet**, Chief, Joint Financing Section, ICAO Headquarters, Montreal, acted as Secretary of the Meeting, assisted by **Mr. B. Hellroth**, Regional Officer Meteorology/Aeronautical Information Services, of the European and North Atlantic Office of ICAO in Paris.

Agenda

i.4 The following agenda was adopted:

Agenda Item 1: Review of SCRAG's Terms of Reference, Composition and Working Arrangements

Agenda Item 2: Consideration of issues relevant to the SCRAG's work addressed by the SADIS Operations Group (SADISOPSG)

Agenda Item 3: Review of actual SADIS costs and cost shares for the period 1 January to 31 December 2001

Agenda Item 4: Review of estimated SADIS costs and cost shares for the period 1 January to 31 December 2003

Agenda Item 5: Amendment to Annex II, SADIS Inventory, to the Agreement on the Sharing of Costs of the Satellite Distribution System relating to Air Navigation

Agenda Item 6: Future work and arrangements for SCRAG/4 Meeting.

Agenda Item 7: Other business.

Visit of the UK Met Facilities

i.5 The group visited the Satellite Earth Station at Whitehill and the National Meteorological Center in Bracknell, from where the SADIS services are provided.

AGENDA ITEM 1: REVIEW OF SCRAG'S TERMS OF REFERENCE, COMPOSITION AND WORKING ARRANGEMENTS

1.1 The Group was informed that Mr. Lars Wedbäck had left the Swedish administration and consequently had to step down as Chairman of the SCRAG and as SCRAG member.

1.2 The Group noted that the Parties to the SADIS Agreement from the European Region still represent in the aggregate more than 50% of the total assessments, which results in the nomination of two SCRAG members from this Region, in accordance with Article VII, paragraph 2 of the SADIS Agreement.

1.3 The Group was informed that the European Air Navigation Planning Group (EANPG) had agreed that Germany should replace Sweden as member of the SCRAG and that the chairmanship should be taken over by the Netherlands. Germany had subsequently nominated Dr. Erland Lorenzen, and the current member from the Netherlands, Mr. L.J.N. Rolvink, had been nominated as the Chairman of the Group.

1.4 The Group was also informed that M. Ahmed Hesmth Abdel Kawy, from the Egyptian Civil Aviation Authority, was replacing Mr. Mohamed Muktar Mousa, who retired, as SCRAG member from the Middle East Region and that Messrs. Xu Jianliang, from China, Amadou Mamadou Watt, from Senegal, and Nicolas Zvenguintzoff, from IATA, apologized for not being able to participate in this meeting.

1.5 The Group expressed its sincere appreciation to Mr. Wedbäck for the outstanding job that he did steering the SCRAG Group through its first years of existence.

1.6 The Group noted its Terms of Reference assigned by Article VII of the SADIS Agreement, which reads:

“The SCAR arrangement shall be administered by a group, the *SADIS Cost Recovery Administrative Group* (SCRAG) which shall:

- a) assess the annual cost share attributable to each Party, including re-assessments arising from new Parties adhering to this Agreement; and
- b) audit the costs of the SADIS provision and any related financial activities, incurred by the provider State and subject to cost sharing.”

1.7 The Group was informed that ICAO had received a formal notification of accession to the SADIS Agreement from 41 States, that 11 States had informed ICAO of their intention to accede to the SADIS Agreement but had not yet sent a formal notification of accession, that seven States had denied their accession to the SADIS Agreement, and that 31 other States receiving the SADIS service had not yet replied to the letter of the Secretary General of ICAO inviting the States receiving the SADIS service to accede to the SADIS Agreement. It was also informed that from these last 31 States, 18 are Least Developing Countries (LDCs), which are exempted from payment of SADIS cost share, and that the SADIS cost share for the year 2001 of 11 other ones had been paid. (See Appendix D).

AGENDA ITEM 2: CONSIDERATION OF ISSUES RELEVANT TO THE SCRAG'S WORK ADDRESSED BY THE SADIS OPERATIONS GROUP (SADISOPSG)

2.1 The Group was informed of the main conclusions of the Seventh Meeting of the SADIS Operations Group (SADISOPSG/7, Cairo, 9 to 13 June 2002) provided by the Chairman of SADISOPSG in the Executive Summary of Discussions of this meeting.

2.2 The Group noted the Statement of SADIS operational efficacy received from the Chairman of SADISOPSG relaying the advice from the Group at its seventh meeting (SADISOPSG/7, Cairo, 9 to 13 June 2002) to SCRAG that the operational efficacy of the SADIS had continued to be satisfactorily meeting all operational requirements since the SADISOPSG/6 Meeting (Paris, 28 May to 1 June 2001).

2.3 The Group noted Conclusion 7/5 of SADISOPSG/7 instructing the Chairman of SADISOPSG to forward to the Chairman of SCRAG an updated SADIS Inventory. This proposal is dealt with under Agenda Item 5 (See below). The Group noted that SADISOPSG/7 agreed that there would be no need to carry on with the two-way programme beyond the life time of the current systems.

2.4 The Group noted Conclusion 7/16 of SADISOPSG/7 regarding the consequences of the switching off of SADIS receiving equipment, which reads:

“That the Chairman of the SADIS Operations Group inform the Chairman of SCRAG that the SADIS Operations Group expected that, in States where SADIS is switched off, it would be the responsibility of the State concerned to ensure that adequate alternative arrangements were made for obtaining the necessary data and products.”

The Group also noted in this respect that both ICAO and the CAA of the United Kingdom had reminded in writing the responsibility mentioned above to the States concerned before withdrawing, in August 2002, the SADIS service to four States which had not paid their SADIS cost share for 2001.

AGENDA ITEM 3: REVIEW OF ACTUAL SADIS COSTS AND COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2001

3.1 The Group reviewed the actual costs provided by the United Kingdom of providing the SADIS services in the year 2001. These actual costs are presented in **Appendix E** and total £ 509,058. A summary of these costs is presented in **Table 1**.

3.2 The Group noted that the increased costs for maintenance were due to renewal of the maintenance contract and rental of additional rack floor spacing at the Whitehill Station. The breakdown of maintenance costs for 2001 are as follows: £6,300 (rental and electric supply to second SADIS communications rack at Whitehill), £31,746 (on-going contracted maintenance support), and £5,860 (non-routine repair of hub infrastructure equipment and technical management meetings). In 2002, the annual maintenance cost of £52,000 comprises £40,500 for fixed maintenance charge, £6,300 for rental of additional rack floor spacing, and £5,200 for repair of redundant equipment by Astrium.

TABLE 1
SUMMARY OF ACTUAL SADIS COSTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2001

Cost Item	Actual Costs (UK £)
UK Meteorological Office	467 569
UK CAA administrative costs	19 196
<i>Sub-total UK</i>	<i>486 765</i>
ICAO support services costs	22 293
TOTAL	509 058

3.3 The Group noted that three States, Brunei Darussalam, Namibia and Pakistan, which were assessed for the year 2001 by the SCRAG/1 Meeting, denied their accession to the SADIS Agreement. Therefore, these States were not considered in the final calculation of the shares of the actual costs for 2001.

3.4 The Group noted that one State, Malaysia, which was not assessed for the year 2001 by the SCRAG/1 Meeting, has been receiving the SADIS service during the period 1 January to 31 December 2001. A provisional cost share for 2001 has been invoiced for an amount of £18,941.81 on the basis of the number of available tonne-kilometres (ATKs) in scheduled services (international and domestic) in 1999 by air carriers based in the territory of this State, in accordance with Article XI, paragraph 1 of the SADIS Agreement. The Group was also informed that three States which had not been assessed for 2002 by the SCRAG/2 Meeting have been billed for the 2002 estimated cost shares calculated on the basis of their number of ATK's in 1999: Malaysia (£17,986.38), the Republic of Moldova (£63.51) and Thailand (£17,027.21). Corresponding payments have been received from the Republic of Moldova and Thailand but not from Malaysia. The necessary adjustments will be dealt with by the SCRAG/4 Meeting.

3.5 The Group determined the actual cost share for the period 1 January to 31 December 2001 to be borne by the States parties to the SADIS Agreement which are not exempted because they are on the list of the Least Developed Countries or because they denied their accession to the SADIS Agreement, on the basis of their number of ATKs in scheduled services for 2001, in accordance with Article XI, paragraph 3 of the SADIS Agreement. The cost share in percentage terms and the share in £ sterling to be borne by each State participating in the SADIS Cost Allocation and Recovery (SCAR) Arrangement are shown in **Appendix E**. Accordingly the Group formulated the following Conclusion:

Conclusion 3/1 -

The actual cost shares for 2001 as shown in Appendix E for the States participating in the SCAR Arrangement are approved by the SCRAG/3 Meeting, in view of the adjustments to be made by the CAA of the United Kingdom in its billing of these States.

3.6 The Group received information from the observer from the United Kingdom on the status of payment of the cost shares of 2001 as at 15 October 2002. It noted that 57 States of 63 States which were assessed for 2001 had paid their cost share (£461,087) representing 91.6% of the original assessments as approved by the SCRAG/1 Meeting.

3.7 The Group noted that, in accordance with the provisions of article XIII of the SADIS Agreement, the SADIS service had been withdrawn as of August 2002 to four States which had not paid their SADIS cost share for 2001 in spite of a number of reminders. Since then, the SADIS service has been reinstated to one of these States which has paid its 2001 arrears.

3.8 As mentioned in paragraph 3.3 above, three States which were assessed for the year 2001 by the SCRAG/1 Meeting have denied their accession to the SADIS Agreement after this meeting: Brunei Darussalam (£1,722.89), Namibia (£314.75) and Pakistan (£6,371.90). The corresponding under-recovery for 2001 amounts to £8,409.54.

3.9 The Group noted that, in addition to the three States mentioned in paragraph 3.8 above, three other States, Indonesia, Morocco and the Russian Federation, which were assessed for the year 2001 by the SCRAG/1 Meeting, have not paid their SADIS cost shares for this year and consequently had the SADIS service withdrawn. The corresponding under-recovery for 2001 amounts to £33,975.81.

3.10 Having noted the information in Table 1 and paragraphs 3.6 to 3.9 above, the Group agreed that the net amount of the under-recovery of SADIS cost shares for the year 2001 amounts to £47,971, which is the difference between the actual costs for 2001 (£509,058) and the collections from States for 2001 as at 15 October 2002 (£461,087), and it formulated the following Conclusion:

Conclusion 3/2 -

A net under-recovery, amounting to £47,971 of the SADIS cost shares for the year 2001 will be taken into account in the calculation of the SADIS cost shares for the year 2003, in accordance with Article XI, paragraph 4 of the SADIS Agreement.

AGENDA ITEM 4: REVIEW OF ESTIMATED SADIS COSTS AND COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003

4.1 The Group reviewed the cost estimates provided by the United Kingdom for providing the SADIS services in the year 2003. These cost estimates are detailed in **Appendix F** and total £ 460,506. A summary of these costs is presented in **Table 2**. The Group agreed that a maximum amount of £40,000 be allocated to 2G trial in 2003. The Group also agreed that, in period of high inflation, it might be more appropriate to show the estimated costs inclusive of forecast inflation.

**TABLE 2
SUMMARY OF ESTIMATED SADIS COSTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003**

Cost Item	Estimated Costs (UK £)
UK Meteorological Office	367 162
UK NATS Gateway	53 344
UK CAA administrative costs	20 000
<i>Sub-total UK</i>	<i>440 506</i>
ICAO support services costs	20 000
TOTAL	460 506

4.2 The Group considered the under-recovery in paragraph 3.10 above in the calculation of the amount to be assessed under the SADIS Agreement for 2003. The calculation of the amount to be assessed is presented in **Table 3**.

TABLE 3
AMOUNT TO BE ASSESSED UNDER THE SADIS AGREEMENT FOR 2003

		(UK £)	References
(1)	Actual costs for 2001	509 058	TABLE 1
(2)	Collected from States for 2001 (as at 15 October 2002)	461 087	Paragraph 3.6
(3)	Under-recovery for 2001	47 971	(1) – (2)
(4)	Estimated costs for 2003	460 506	TABLE 2
(5)	Amount to be assessed for 2003	508 477	(3) + (4)

4.3 The Group determined the cost share for the period 1 January to 31 December 2003 to be borne by the States parties to the SADIS Agreement which are not exempted because they are on the list of the Least Developed Countries or because they denied their accession to the SADIS Agreement, on the basis of the number of available tonne-kilometres (ATKs) in scheduled services for 2001, in accordance with Article XI, paragraph 3 of the SADIS Agreement. The cost share in percentage terms and the share in £ sterling, including the share of under-recovery for 2001, to be borne by each State are shown in **Appendix G**.

4.4 The Group then agreed that the United Kingdom, would proceed to bill each of the States party to the SADIS Agreement for the share attributable to it as shown in **Appendix G**. Accordingly the Group formulated the following Conclusion:

Conclusion 3/3 -

The estimated cost shares for 2003 as shown in Appendix G for each State participating in the SCAR Arrangement are approved by the SCRAG/3 Meeting for collection by the United Kingdom.

4.5 Appendix H recapitulates the amounts due by the States participating in the SCAR arrangement as at 1 January 2003, subject for each State to adjustments to take into account the payments received after 15 October 2002.

Depreciated Assets

4.6 The Group noted the information presented by the UK regarding the depreciated assets as at 31 December 2002 (see **Appendix C**).

Cost estimates for the years 2004 to 2006

4.7 The Group considered the estimates provided by the United Kingdom (see **Appendix F**) and summarised in **Table 4** of providing the SADIS services for the years 2004 to 2006 as well as the estimates for the United Kingdom administrative costs and the costs of ICAO support services. The Group noted that increased costs in the years 2004 to 2006 were due to the gateway function, of which the planned operational date is 1 September 2003.

TABLE 4
SUMMARY OF ESTIMATED SADIS COSTS
FOR THE YEARS 2004, 2005 AND 2006

Cost Item	Estimated Costs 2004 (UK £)	Estimated Costs 2005 (UK £)	Estimated Costs 2006 (UK £)
UK Meteorological Office	335 000	335 000	335 000
UK NATS Gateway	172 838	167 916	162 994
UK CAA administrative costs	20 000	20 000	20 000
<i>Sub-total UK</i>	<i>527 838</i>	<i>522 916</i>	<i>517 994</i>
ICAO support services costs	20 000	20 000	20 000
TOTAL	547 838	542 916	537 994

AGENDA ITEM 5: AMENDMENT TO ANNEX II, SADIS INVENTORY, TO THE AGREEMENT ON THE SHARING OF COSTS OF THE SATELLITE DISTRIBUTION SYSTEM RELATING TO AIR NAVIGATION

5.1 The Group reviewed the amendments to Annex II, SADIS Inventory, to the SADIS Agreement as proposed by the SADISOPSG Group and agreed upon by the United Kingdom as the SADIS provider State. These amendments were necessary to ensure that the Inventory would continue to meet the approved operational requirements and take account of the complementary second SADIS carrier.

5.2 The additions and deletions to the existing text of Annex II appear in outline and strikeout formats in **Appendix I**. As a result of its review, the group adopted the following Conclusion:

Conclusion 3/4 -

With the consent of the United Kingdom as the SADIS provider State, in accordance with Article XVII, paragraph 5, of the SADIS Agreement, Annex II, SADIS Inventory of the SADIS Agreement is amended as indicated in Appendix I.

AGENDA ITEM 6: FUTURE WORK AND ARRANGEMENTS FOR THE SCRAG/4 MEETING

6.1 The Group agreed that its next meeting should normally be held in the ICAO Regional Office of Bangkok (Thailand) on 4 and 5 November 2003.

AGENDA ITEM 7: OTHER BUSINESS

7.1 The group agreed in principle that the actual costs of providing the SADIS services by the UK Met Office be audited on an annual basis by PKF, a substantial firm of auditors who routinely provide internal audit services to the Met Office, before being presented to the SCRAG. However, the implementation of this procedure is subject to approval of the costs involved and terms of reference of such audits by the SCRAG/4 meeting.

7.2 Two proposals which had been presented in flimsies by the United Kingdom at the opening of the SCRAG/3 Meeting, on the basis of the intention expressed by Astrium in September 2002 to withdraw from the services which they provided in support of the SADIS programme, were withdrawn by the United Kingdom without being discussed. The first proposal was to consider the benefits of the SADIS provider owning the intellectual property rights (IPR) associated with the SADIS service. The second proposal was to consider a maintenance facility of SADIS receiver equipment, with the costs shared between all SADIS users, in order to guarantee an agreed level of support from the receiver provider for an agreed cost. These two proposals were withdrawn by the United Kingdom as a result of a new communication received from Astrium during the Meeting on 5 November 2002. The SCRAG were informed that further discussions will be taking place with Astrium over the IPR and other issues and the SADISOPSG will be kept informed of any new developments in this respect.

7.3 The Group expressed its sincere appreciation to the UK Met Office for the excellent meeting arrangements and hospitality extended, as well as for the fine arrangements made for the visit to the SADIS provision locations.

APPENDIX A

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APPENDIX B

LIST OF SCRAG/3 WORKING PAPERS

Working Paper No.	Agenda Item	Subject	Presented by
1	1 to 7	Provisional agenda	Secretariat
2	1, 3 &4	Status of accession to the SADIS Agreement	Secretariat
3	2&5	Report on Conclusions of the SADISOPSG/7 Meeting	Chairman, SADISOPSG
4 Rev.	3	2001 UK actual SADIS costs	United Kingdom
5	3	2001 ICAO actual SADIS administrative costs	Secretariat
6	3&4	Status of payments	United Kingdom
7	3	Summary of actual costs and cost shares for the year 2001	Secretariat
8	4	Depreciated assets: SADIS costs	United Kingdom
9 Rev.	4	SADIS Costs: 2 to 5 years	United Kingdom
10 Rev.	4	Summary of estimated costs and assessments for the year 2003	Secretariat
11	5	Amendment to Annex II, Inventory to the SADIS Agreement	Secretariat

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APPENDIX C

**INVENTORY OF ASSETS AS AT 31 DECEMBER 2002
EMPLOYED BY THE UNITED KINGDOM TO PROVIDE SADIS SERVICES**

(1) Inventory of Assets: 2002	(2) Original Value	(3) Depreciated charges in 2002	(4) Total accumulated depreciation	(5) Net depreciated values at end of 2002
<u>UNITED KINGDOM</u> HUB Investment	£191 928	£0	£191 928	£0
New Two-Way Hub enhancement	£250 000	£50 000	£250 000	£0
New Development & project Management	£75 000	£15 000	£75 000	£0
Communication UKMO to Whitehill	£30 896	£0	£30 896	£0
<u>TRIAL SADIS PROGRAMME SYSTEMS</u>				
SADIS VSAT Seven One-Way VSAT and spares	£44 988	£0	£44 988	£0
Three Two-Way VSATS and spares	£98 958	£0	£98 958	£0
ISCS VSAT back-up system	£8 453	£0	£8 453	£0
New 2*Two-Way enhanced VSATS	£50 000	£10 000	£50 000	£0

Trials & Support for ICAO Training	£35 456	£0	£35 456	£0
CAPITALIZED OPERATION ASSET (see appendix B to ESCRAG/1 report)	£303 000	£0	£303 000	£0
TOTAL (original) investment	£713 679	£0	£713 679	£0
New Investment	£375 000	£75 000	£375 000	£0

APPENDIX D

STATES WHICH FORMALLY ACCEDED TO THE SADIS AGREEMENT

States	Status of Payment of the 2001 Cost Shares as at 15 October 2002 (£ Sterling)			
	LDC's Exempted	Share of 2001 Estimated Costs	Amount Paid	Balance
Austria		6 799.37	6 799.37	
Bahrain		1 595.58	1 595.58	
Belgium		9 224.47	9 224.47	
Botswana		31.14	31.14	
Cameroon		299.63	299.63	
China (1)		79 567.91	79 567.91	
Congo		243.81	243.81	
Côte d'Ivoire		319.38	319.38	
Croatia		320.67	320.67	
Cyprus		1 205.63	1 205.63	
Czech Republic		1 331.94	1 331.94	
Democratic People's Republic of Korea		141.90	141.90	
Democratic Republic of the Congo	X	-		
Denmark		3 209.93	3 209.93	
Egypt		5 772.04	5 772.04	
Estonia		203.31	203.31	
Finland		4 734.82	4 734.82	
Gabon		1 071.28	1 071.28	
Georgia		144.02	144.02	
Germany		60 387.44	60 387.44	
Hungary		1 668.72	1 668.72	
Italy		21 597.66	21 597.66	
Jordan		2 459.65	2 459.65	
Madagascar	X	-		
Mauritius		2 264.29	2 264.29	
Mongolia		184.61	184.61	
Morocco		3 370.97		3 370.97
Netherlands		38 828.83	38 828.83	
Oman		1 809.64	1 809.64	
Portugal		5 174.78	5 174.78	
Republic of Moldova		-		
Romania		1 260.20	1 260.20	
Senegal		228.12	228.12	
Sweden		5 477.04	5 477.04	
Switzerland		19 419.97	19 419.97	
Thailand		19 165.09	19 165.09	
Tunisia		1 237.64	1 237.64	
United Arab Emirates		10 961.24	10 961.24	
United Kingdom		83 072.51	83 072.51	
United Republic of Tanzania	X	-		
Viet Nam		1 840.05	1 840.05	

APPENDIX D (cont'd)

STATES WHICH SENT A LETTER OF INTENTION TO ACCEDE TO THE SADIS AGREEMENT

States	Status of Payment of the 2001 Cost Shares as at 15 October 2002 (£ Sterling)			
	LDC's Exempted	Share of 2001 Estimated Costs	Amount Paid	Balance
Armenia		375.47	375.47	
Azerbaijan		514.53	514.53	
Federal Republic of Yugoslavia		173.78	173.78	
Greece		4 636.38	4 636.38	
Kenya		1 202.69	1 202.69	
Kuwait		3 491.78	3 491.78	
Malta		1 074.81	1 074.81	
Russian Federation		23 552.86		23 552.86
Saudi Arabia		14 620.08	14 620.08	
Turkey		7 796.67	7 796.67	
Ukraine		874.70	874.70	

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APPENDIX D (cont'd)

States	Status of Payment of the 2001 Cost Shares as at 15 October 2002 (£ Sterling)			
	LDC's Exempted	Share of 2001 Estimated Costs	Amount Paid	Balance
Algeria		1 039.79	1 039.91	-0.12
Bangladesh	X	-		
Benin	X	-		
Bulgaria		877.31	877.31	
Burkina Faso	X	-		
Chad	X	-		
Equatorial Guinea	X	-		
Ethiopia	X	-		
Gambia	X	-		
Ghana		857.11	857.11	
Guinea	X	-		
India		11 226.64	11 226.64	
Indonesia		7 051.98		7 051.98
Lao People's Democratic Republic	X	-		
Lebanon		1 298.47	1 298.47	
Maldives	X	-		
Malaysia (2)		-		
Mozambique	X	-		
Nepal	X	-		
Niger	X	-		
Nigeria		478.00	478.00	
Rwanda	X	-		
Seychelles		463.83	463.83	
South Africa		13 999.40	13 999.40	
Sri Lanka		2 519.67	2 519.67	
Swaziland		13.45	13.45	
Togo	X	-		
Turkmenistan		297.78	297.78	
Uganda	X	-		
Yemen	X	-		
Zambia	X	-		

APPENDIX D (cont'd)

STATES WHICH DENIED THEIR ACCESSION TO THE SADIS AGREEMENT

States	Status of Payment of the 2001 Cost Shares as at 15 October 2002 (£ Sterling)			
	LDC's Exempted	Share of 2001 Estimated Costs	Amount Paid	Balance
Australia		-		
Brunei Darussalam		1 722.89		1 722.89
France		-		
Namibia		314.75		314.75
Pakistan		6 371.90		6 371.90
Singapore		-		
Slovakia		-		

TOTAL ALL STATES		503 472.00	461 086.77	42 385.23
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Notes:

(1): China's share includes:

- Hong Kong: £ 31 885.98

- Macau: £ 595.33

(2): The estimated 2001 costs share of Malaysia that was not assessed by the SCRAG/1 Meeting, amounted to £18 941.81 and has not been paid.

APPENDIX E
ACTUAL COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2001*

STATES	2001 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2001 Actual Costs (£ Sterling)
Algeria	551 546	0.254%	1 294.48
Armenia	155 800	0.072%	365.66
Austria	2 821 682	1.301%	6 622.52
Azerbaijan	254 015	0.117%	596.18
Bahrain	784 123	0.362%	1 840.35
Belgium	4 581 672	2.112%	10 753.23
Botswana	15 978	0.007%	37.50
Bulgaria	77 292	0.036%	181.41
Cameroon	104 629	0.048%	245.57
China **	37 958 497	17.501%	89 089.00
Congo	56 601	0.026%	132.84
Côte d'Ivoire	44 284	0.020%	103.94
Croatia	154 124	0.071%	361.73
Cyprus	508 399	0.234%	1 193.22
Czech Republic	576 160	0.266%	1 352.25
Democratic People's Republic of Korea	8 021	0.004%	18.83
Denmark	1 429 697	0.659%	3 355.51
Egypt	2 115 049	0.975%	4 964.04
Estonia	62 650	0.029%	147.04
Federal Republic of Yugoslavia	183 421	0.085%	430.49
Finland	1 844 006	0.850%	4 327.90
Gabon	351 736	0.162%	825.53
Georgia	42 733	0.020%	100.29
Germany	26 183 635	12.072%	61 453.28
Ghana	406 480	0.187%	954.01
Greece	1 845 643	0.851%	4 331.74
Hungary	698 646	0.322%	1 639.73
India	4 656 881	2.147%	10 929.75
Indonesia	3 442 240	1.587%	8 078.97
Italy	8 193 418	3.778%	19 230.04
Jordan	900 756	0.415%	2 114.08
Kenya	693 158	0.320%	1 626.85
Kuwait	1 357 028	0.626%	3 184.96
Lebanon	530 815	0.245%	1 245.83

ACTUAL COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2001*

STATES	2001 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2001 Actual Costs (£ Sterling)
Malaysia	8 178 761	3.771%	19 195.64
Malta	403 470	0.186%	946.95
Mauritius	1 076 676	0.496%	2 526.97
Mongolia	97 833	0.045%	229.62
Morocco	1 416 315	0.653%	3 324.11
Netherlands	15 052 984	6.940%	35 329.52
Nigeria	62 563	0.029%	146.84
Oman	849 302	0.392%	1 993.32
Portugal	2 176 138	1.003%	5 107.42
Romania	502 255	0.232%	1 178.80
Russian Federation	9 247 108	4.263%	21 703.06
Saudi Arabia	5 370 770	2.476%	12 605.26
Senegal	44 503	0.021%	104.45
Seychelles	254 567	0.117%	597.47
South Africa	5 294 083	2.441%	12 425.27
Sri Lanka	1 331 522	0.614%	3 125.10
Swaziland	11 552	0.005%	27.11
Sweden	2 239 441	1.032%	5 255.99
Switzerland	7 538 431	3.476%	17 692.78
Thailand	8 470 668	3.905%	19 880.75
Tunisia	457 143	0.211%	1 072.92
Turkey	3 473 208	1.601%	8 151.66
Turkmenistan	238 312	0.110%	559.32
Ukraine	325 554	0.150%	764.08
United Arab Emirates	6 056 758	2.792%	14 215.28
United Kingdom	32 133 667	14.815%	75 418.06
Viet Nam	1 001 914	0.462%	2 351.50
TOTAL	216 896 313	100.000%	509 058.00

* Excludes Least Developed Countries exempted, States for which the access to SADIS is not operational and States which refused to accede to the SADIS Agreement.

** China's share includes:

- Hong Kong: 13 969 814 000 ATKs corresponding to a share of 2001 actual costs of £ 32 787.29
- Macau: 309 930 000 ATKs corresponding to a share of 2001 actual costs of £ 727.41

APPENDIX F

**SADIS COST ESTIMATES FOR 2003 TO 2006 FOR SADIS SERVICES PROVIDED BY THE
UNITED KINGDOM METEOROLOGICAL OFFICE**

Table 1	Year 2003 Projected Costs at 2002 prices	Year 2004 Projected Costs at 2002 prices	Year 2005 Projected Costs At 2002 prices	Year 2006 Projected Costs at 2002 prices
() resource in man/yr				
<u>ANNUAL STAFF COSTS</u>				
Help Desk (see note 1)	39 191 (0.25)	47 029 (0.30)	47 029 (0.30)	47 029 (0.30)
Engineer	3 135 (0.02)	3 135 (0.02)	3 135 (0.02)	3 135 (0.02)
Network Computer Engineer	31 352 (0.20)	31 352 (0.20)	31 352 (0.20)	31 352 (0.20)
Executive Officer	33 183 (0.55)	33 183 (0.55)	33 183 (0.55)	33 183 (0.55)
Support Specialist	42 234 (0.70)	42 234 (0.70)	42 234 (0.70)	42 234 (0.70)
2G Trial	40 000 (note 2)	(note 2)	(note 2)	(note 2)
<i>STAFF COST SUB- TOTAL</i>	189 095	156 933	156 933	156 933
<u>SERVICES</u>				
Satellite Segment	96 067	96 067	96 067	96 067
Annual Maintenance	52 000	52 000	52 000	52 000
Message-Switch	30 000	30 000	30 000	30 000
SUB TOTAL	178 067	178 067	178 067	178 067
<u>COST OF DEPRECIATED CAPITAL</u>				
- Two Way	0	0	0	0
SUB-TOTAL	0	0	0	0

<u>TOTAL FOR UKMO SADIS</u>	£367 162	£335 000	£335 000	£335 000
<u>TABLE 2</u>	Year 2003 Projected Costs at 2002 prices	Year 2004 Projected Costs at 2002 prices	Year 2005 Projected Costs At 2002 prices	Year 2006 Projected Costs at 2002 prices
<u>NATS GATEWAY</u>				
Operational Staff Support: Air Traffic Services Assistant	15 750	47 280	47 280	47 280
Engineering Staff Support: Systems Engineer	5 150	15 450	15 450	15 450
SADIS Administration Support	4 300	12 875	12 875	12 875
SUB TOTAL	25 200	75 605	75 605	75 605
Communication Link to UKMO	2 380	7 140	7 140	7 140
System maintenance	4 760	14 280	14 280	14 280
SUB TOTAL	7 140	21 420	21 420	21 420
<u>COST OF DEPRECIATED CAPITAL</u>				

OPMET Gateway Function	15 877	63 508	63 508	63 508
Cost of capital	5 127	12 305	7 383	2 461
<u>TOTAL FOR GATEWAY</u>	53 344	172 838	167 916	162 994
CAA Admin	20 000	20 000	20 000	20 000
ICAO Admin	20 000	20 000	20 000	20 000
TOTAL	460 506 (note 3)	547 838	542 916	537 994

Note 1. The introduction of BUFR coded SIGWX and SIGMETS, if required by the ICAO Regions to be sent to the UK message-Switch, will require some expansion to the help desk requirement, though this is likely to be small.

Note 2. The budgetary cost suggested in table 1 for implementing the SADIS 2G trial includes a cost for manpower plus hardware. If SADIS 2G is accepted by the SADISOPSG, then a separate project will be launched to provide an operational infrastructure for this programme. Additional on-going costs would be tied to this programme.

Note 3. This amount does not include the under-recovery and non payment from States for 2001.

APPENDIX G
ESTIMATED COST SHARES AND ASSESSMENTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003 *

STATES	2001 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2003 Estimated Costs (£ Sterling)	Share of Under-recovery for 2001 (£ Sterling)	Amount to be Assessed for 2003 (£ Sterling)
Algeria	551 546	0.254%	1 170.86	121.97	1 292.83
Armenia	155 800	0.072%	330.74	34.45	365.19
Austria	2 821 682	1.301%	5 990.08	623.99	6 614.07
Azerbaijan	254 015	0.117%	539.24	56.17	595.41
Bahrain	784 123	0.361%	1 664.60	173.40	1 838.00
Belgium	4 581 672	2.112%	9 726.32	1 013.19	10 739.51
Botswana	15 978	0.007%	33.92	3.53	37.45
Bulgaria	77 292	0.036%	164.08	17.09	181.17
Cameroon	104 629	0.048%	222.11	23.14	245.25
China **	37 958 497	17.498%	80 581.17	8 394.16	88 975.33
Congo	56 601	0.026%	120.16	12.52	132.68
Côte d'Ivoire	44 284	0.020%	94.01	9.79	103.80
Croatia	154 124	0.071%	327.19	34.08	361.27
Cyprus	508 399	0.234%	1 079.27	112.43	1 191.70
Czech Republic	576 160	0.266%	1 223.12	127.41	1 350.53
Democratic People's Republic of Korea	8 021	0.004%	17.03	1.77	18.80
Denmark	1 429 697	0.659%	3 035.07	316.16	3 351.23
Egypt	2 115 049	0.975%	4 489.99	467.72	4 957.71
Estonia	62 650	0.029%	133.00	13.85	146.85
Federal Republic of Yugoslavia	183 421	0.085%	389.38	40.56	429.94
Finland	1 844 006	0.850%	3 914.60	407.78	4 322.38
Gabon	351 736	0.162%	746.69	77.78	824.47
Georgia	42 733	0.020%	90.72	9.45	100.17
Germany	26 183 635	12.070%	55 584.60	5 790.26	61 374.86
Ghana	406 480	0.187%	862.91	89.89	952.80
Greece	1 845 643	0.851%	3 918.07	408.15	4 326.22
Hungary	698 646	0.322%	1 483.14	154.50	1 637.64
India	4 656 881	2.147%	9 885.98	1 029.82	10 915.80
Indonesia	3 442 240	1.587%	7 307.45	761.22	8 068.67
Italy	8 193 418	3.777%	17 393.61	1 811.90	19 205.51
Jordan	900 756	0.415%	1 912.19	199.19	2 111.38
Kenya	693 158	0.320%	1 471.49	153.29	1 624.78
Kuwait	1 357 028	0.626%	2 880.80	300.09	3 180.89
Lebanon	530 815	0.245%	1 126.85	117.38	1 244.23

**ESTIMATED COST SHARES AND ASSESSMENTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003 ***

STATES	2001 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2003 Estimated Costs (£ Sterling)	Share of Under-recovery for 2001 (£ Sterling)	Amount to be Assessed for 2003 (£ Sterling)
Malaysia	8 178 761	3.770%	17 362.49	1 808.65	19 171.14
Malta	403 470	0.186%	856.52	89.22	945.74
Mauritius	1 076 676	0.496%	2 285.65	238.10	2 523.75
Mongolia	97 833	0.045%	207.69	21.63	229.32
Morocco	1 416 315	0.653%	3 006.66	313.20	3 319.86
Netherlands	15 052 984	6.939%	31 955.61	3 328.82	35 284.43
Nigeria	62 563	0.029%	132.81	13.84	146.65
Oman	849 302	0.392%	1 802.96	187.81	1 990.77
Portugal	2 176 138	1.003%	4 619.67	481.23	5 100.90
Republic of Moldova	29 245	0.013%	62.08	6.47	68.55
Romania	502 255	0.232%	1 066.22	111.07	1 177.29
Russian Federation	9 247 108	4.263%	19 630.46	2 044.91	21 675.37
Saudi Arabia	5 370 770	2.476%	11 401.48	1 187.69	12 589.17
Senegal	44 503	0.021%	94.47	9.84	104.31
Seychelles	254 567	0.117%	540.41	56.30	596.71
South Africa	5 294 083	2.441%	11 238.68	1 170.74	12 409.42
Sri Lanka	1 331 522	0.614%	2 826.66	294.45	3 121.11
Swaziland	11 552	0.005%	24.52	2.55	27.07
Sweden	2 239 441	1.032%	4 754.05	495.23	5 249.28
Switzerland	7 538 431	3.475%	16 003.15	1 667.05	17 670.20
Thailand	8 470 668	3.905%	17 982.18	1 873.21	19 855.39
Tunisia	457 143	0.211%	970.46	101.09	1 071.55
Turkey	3 473 208	1.601%	7 373.19	768.07	8 141.26
Turkmenistan	238 312	0.110%	505.91	52.70	558.61
Ukraine	325 554	0.150%	691.11	71.99	763.10
United Arab Emirates	6 056 758	2.792%	12 857.74	1 339.39	14 197.13
United Kingdom	32 133 667	14.813%	68 215.79	7 106.11	75 321.90
Viet Nam	1 001 914	0.462%	2 126.94	221.56	2 348.50
TOTAL	216 925 558	100.000%	460 506.00	47 971.00	508 477.00

* Excludes Least Developed Countries exempted, States for which the access to SADIS is not operational and States which refused to accede to the SADIS Agreement.

** China's share includes:

- Hong Kong: 13 969 814 000 ATKs corresponding to a share of 2003 assessments of £ 32 745.47
- Macau: 309 930 000 ATKs corresponding to a share of 2003 assessments of £ 726.48

H - 1
APPENDIX H

AMOUNT DUE BY EACH STATE PARTICIPATING IN THE SCAR ARRANGEMENT AS AT 1 JANUARY 2003*

STATES	Share of 2001 Actual Costs (£ Sterling)	Amount Collected for 2001 as at 15 October 2002 (£ Sterling)	Balance for 2001 as at 15 October 2002 (£ Sterling)	Share of 2002 Estimated Costs (£ Sterling)	Amount Collected for 2002 as at 15 October 2002 (£ Sterling)	Balance for 2002 as at 15 October 2002 (£ Sterling)	Amount to be Assessed for 2003 (£ Sterling)	Total Amount Due as at 1 January 2003 (£ Sterling)
	(SCRAG/3-WP/7)	(SCRAG/3-WP/6)		(SCRAG/2-Report, App.F)			(SCRAG/3-WP/10)	****
			(2) - (3)	***		(5) - (6)		(4) + (7) + (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Algeria	1 294.48	1 039.91	254.57	998.04		998.04	1 292.83	2 545.44
Armenia	365.66	375.47	-9.81	272.71	272.71		365.19	355.38
Austria	6 622.52	6 799.37	-176.85	6 481.25	6 481.25		6 614.07	6 437.22
Azerbaijan	596.18	514.53	81.65	439.13	439.13		595.41	677.06
Bahrain	1 840.35	1 595.58	244.77	1 757.03	1 757.03		1 838.00	2 082.77
Belgium	10 753.23	9 224.47	1 528.76	12 135.00	12 135.00		10 739.51	12 268.27
Botswana	37.50	31.14	6.36	32.79		32.79	37.45	76.60
Bulgaria	181.41	877.31	-695.90	371.28	371.28		181.17	-514.73
Cameroon	245.57	299.63	-54.06	284.73		284.73	245.25	475.92
China **	89 089.00	79 567.91	9 521.09	76 236.44	76 236.44		88 975.33	98 496.42
Congo	132.84	243.81	-110.97	201.64		201.64	132.68	223.35
Côte d'Ivoire	103.94	319.38	-215.44	267.57		267.57	103.80	155.93
Croatia	361.73	320.67	41.06	314.30	314.30		361.27	402.33
Cyprus	1 193.22	1 205.63	-12.41	1 054.26	1 054.26		1 191.70	1 179.29
Czech Republic	1 352.25	1 331.94	20.31	1 244.84	1 244.84		1 350.53	1 370.84
Democratic People's Republic of Korea	18.83	141.90	-123.07	89.75		89.75	18.80	-104.27
Denmark	3 355.51	3 209.93	145.58	3 001.95	3 001.95		3 351.23	3 496.81
Egypt	4 964.04	5 772.04	-808.00	4 951.81		4 951.81	4 957.71	9 101.52
Estonia	147.04	203.31	-56.27	164.51	164.51		146.85	90.58
Federal Republic of Yugoslavia	430.49	173.78	256.71	423.61		423.61	429.94	1 110.26
Finland	4 327.90	4 734.82	-406.92	4 156.98	4 156.98		4 322.38	3 915.46
Gabon	825.53	1 071.28	-245.75	940.16		940.16	824.47	1 518.88
Georgia	100.29	144.02	-43.73	95.93		95.93	100.17	152.37
Germany	61 453.28	60 387.44	1 065.84	56 851.65	56 851.65		61 374.86	62 440.70
Ghana	954.01	857.11	96.90	768.78	768.78		952.80	1 049.70
Greece	4 331.74	4 636.38	-304.64	4 163.53		4 163.53	4 326.22	8 185.11
Hungary	1 639.73	1 668.72	-28.99	1 602.30	1 602.30		1 637.64	1 608.65
India	10 929.75	11 226.64	-296.89	9 990.99		9 990.99	10 915.80	20 609.90
Indonesia	8 078.97		8 078.97	6 737.25		6 737.25	8 068.67	22 884.89
Italy	19 230.04	21 597.66	-2 367.62	20 212.92		20 212.92	19 205.51	37 050.81
Jordan	2 114.08	2 459.65	-345.57	2 123.66	2 123.66		2 111.38	1 765.81
Kenya	1 626.85	1 202.69	424.16	1 339.81		1 339.81	1 624.78	3 388.75
Kuwait	3 184.96	3 491.78	-306.82	2 964.22	2 964.22		3 180.89	2 874.07
Lebanon	1 245.83	1 298.47	-52.64	1 118.82		1 118.82	1 244.23	2 310.41

AMOUNT DUE BY EACH STATE PARTICIPATING IN THE SCRAG ARRANGEMENT AS AT 1 JANUARY 2003*

STATES	Share of 2001 Actual Costs (£ Sterling)	Amount Collected for 2001 as at 15 October 2002 (£ Sterling)	Balance for 2001 as at 15 October 2002 (£ Sterling)	Share of 2002 Estimated Costs (£ Sterling)	Amount Collected for 2002 as at 15 October 2002 (£ Sterling)	Balance for 2002 as at 15 October 2002 (£ Sterling)	Amount to be Assessed for 2003 (£ Sterling)	Total Amount Due as at 1 January 2003 (£ Sterling)
	(SCRAG/3-WP/7)	(SCRAG/3-WP/6)		(SCRAG/2-Report, App.F)			(SCRAG/3-WP/10)	****
			(2) - (3)	***		(5) - (6)		(4) + (7) + (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Malaysia	19 195.64		19 195.64	17 986.38		17 986.38	19 171.14	56 353.16
Malta	946.95	1 074.81	-127.86	933.98	933.98		945.74	817.88
Mauritius	2 526.97	2 264.29	262.68	2 162.20		2 162.20	2 523.75	4 948.63
Mongolia	229.62	184.61	45.01	215.85	215.85		229.32	274.33
Morocco	3 324.11		3 324.11	3 161.59		3 161.59	3 319.86	9 805.56
Netherlands	35 329.52	38 828.83	-3 499.31	33 797.68		33 797.68	35 284.43	65 582.80
Nigeria	146.84	478.00	-331.16	233.30		233.30	146.65	48.79
Oman	1 993.32	1 809.64	183.68	1 912.65	1 912.65		1 990.77	2 174.45
Portugal	5 107.42	5 174.78	-67.36	4 623.48		4 623.48	5 100.90	9 657.02
Republic of Moldova				63.51	63.51		68.55	68.55
Romania	1 178.80	1 260.20	-81.40	1 300.35	1 300.35		1 177.29	1 095.89
Russian Federation	21 703.06		21 703.06	19 525.24		19 525.24	21 675.37	62 903.67
Saudi Arabia	12 605.26	14 620.08	-2 014.82	12 944.63		12 944.63	12 589.17	23 518.98
Senegal	104.45	228.12	-123.67	187.23		187.23	104.31	167.87
Seychelles	597.47	463.83	133.64	462.14	463.83	-1.69	596.71	728.66
South Africa	12 425.27	13 999.40	-1 574.13	11 797.59	11 797.59		12 409.42	10 835.29
Sri Lanka	3 125.10	2 519.67	605.43	3 131.46	3 131.46		3 121.11	3 726.54
Swaziland	27.11	13.45	13.66	0.00		0.00	27.07	40.73
Sweden	5 255.99	5 477.04	-221.05	4 847.51	4 847.51		5 249.28	5 028.23
Switzerland	17 692.78	19 419.97	-1 727.19	18 103.64	18 103.64		17 670.20	15 943.01
Thailand	19 880.75	19 165.09	715.66	17 027.21	17 027.21		19 855.39	20 571.05
Tunisia	1 072.92	1 237.64	-164.72	1 068.93	1 068.93		1 071.55	906.83
Turkey	8 151.66	7 796.67	354.99	7 816.27	7 816.27		8 141.26	8 496.25
Turkmenistan	559.32	297.78	261.54	534.70		534.70	558.61	1 354.85
Ukraine	764.08	874.70	-110.62	763.17	763.17		763.10	652.48
United Arab Emirates	14 215.28	10 961.24	3 254.04	11 733.71	11 733.71		14 197.13	17 451.17
United Kingdom	75 418.06	83 072.51	-7 654.45	73 868.79	73 868.79		75 321.90	67 667.45
Viet Nam	2 351.50	1 840.05	511.45	1 704.41		1 704.41	2 348.50	4 564.36
TOTAL	509 058.00	461 086.77	47 971.23	475 697.24	327 078.49	148 618.75	508 477.00	705 066.98

* Excludes Least Developed Countries exempted, States for which the access to SADIS is not operational and States which denied their accession to the SADIS Agreement.

** China's share includes:

- China - Beijing: balance due for 2001 is £8 487.70 (£55 574.30 - £47 086.60); amount assessed for 2002 paid; assessment for 2003 is £55 503.38; for a total due of £63 991.08 as at 1 January 2003.

- Hong Kong: balance due for 2001 is £901.31 (£32 787.29 - £31 885.98); amount assessed for 2002 paid; assessment for 2003 is £32 745.47; for a total due of £33 646.78 as at 1 January 2003.

- Macau: balance due for 2001 is £132.08 (£727.41 - £595.33); amount assessed for 2002 paid; assessment for 2003 is £726.48; for a total due of £858.56 as at 1 January 2003.

*** The shares of 2002 estimated costs correspond to the shares approved by the SCRAG/2 Meeting plus shares for Malaysia, the Republic of Moldova and Thailand which were calculated after that Meeting.

****The total amount due for each State as at 1 January 2003 should be adjusted to take into account the amounts collected after 15 October 2002.

APPENDIX I
AMENDMENT TO ANNEX II, SADIS INVENTORY, TO THE SADIS AGREEMENT

SADIS INVENTORY

The inventory items identified below cover the equipment and staffing required to provide, operate and maintain the SADIS. The inventory includes: hub infrastructure (including all additions following the completion of the hub enhancement project) and communications circuits, ISCS data back-up system, procured services, and staff. It should be noted that some equipment items are under lease and form part of a wider infrastructure. Costs of individual items cannot be separated from the required infrastructure that includes a significant part of the development of the software and technical configuration. The inventory is in accordance with the SADIS User Guide and as listed (in part) in the ICAO ESCRAG/7 Meeting Report.

1. EQUIPMENT

A. Hub infrastructure and communications circuits

The hub infrastructure connection to the MET Office message switch (TROPICS) consists of a number of units developed in conjunction with Astrium and other suppliers. These are installed either at Bracknell or at the uplink site at Whitehills, Oxford. The components of the original inventory have changed as when the Two-Way enhancement project is was fully implemented. ~~More specifically, the inventory of units or items includes those:~~ It should be noted that the Met Office is in the process of upgrading its message switch which will be known as FROST.

i) Solely procured for SADIS

- a) 2 two-way enhanced VSATs for enhanced two-way capability;
- b) SADIS Gateway function equipment software (developed specifically for the gateway as part of the NATS CoreMet system; see items under “Not procured principally for SADIS”).

ii) Principally procured for SADIS

- a) At the Met Office
 - Product display console, including software
- b) Communications between Whitehills and Met Office
 - 2 Fibre Optic 64 Kbps circuits

c) At the uplink site (Whitehills)

- 1) Units forming part of a totally integrated rack structure, with back-up, referred to as Chain A and Chain B (see the list at Sections 4 and 5):

~~1 CX1000 frame relay switches~~
~~2 modulators~~
~~1 modem switch~~

- 2) Units and services leased from Astrium under contract to Cable and Wireless Communications Ltd.:

1 (70 to 140 MHz) convertor
Use of 1 (140 to C band) convertor
Use of satellite hub — Lease represents only a very small part of this large aperture

iii) **Not procured principally for SADIS**

- a) Message switch (TROPICS): Total investment £2.3M of which 1.25 per cent is attributable to SADIS usage.

Note.— Migration of SADIS data feeds from TROPICS to FROST anticipated during June 2002. Item a) to be replaced by the following:

- b) ~~OPMET Gateway function — NATS infrastructure site: Operational core MET system, including installation, oversight, tests and training: £700 000 of which 20 per cent is attributable to SADIS.~~ Message switch (CoreMet System). Note that some elements of this are exclusively for the support of the SADIS gateway function.

B. ISCS data back-up system

ISCS VSAT system, including receiver, cables, break unit and X25 frame relay switch.

Note.— The equipment, including leases, listed above under A and B, are being capitalized over the SADIS contract period.

**SADIS TWO WAY DEVELOPMENT
INVENTORY OF DELIVERABLE EQUIPMENT**

<i>Description</i>	<i>Quantity</i>
1. Bracknell Equipment	
1.1 Network Management System (NMS Computer)	1
1.2 MemoTech PAD (for NMS)	1 *
1.3 Telecoms interface units Megabox	2
1.4 CX1000 Frame Relay Switch (for NMS)	1 *
1.5 Product display console including software (COROBOR)	1 *
2. Bracknell Equipment (Spares)	
2.1 Telecoms interface units Megabox	2
2.2 NMS Spare CPU	
2.3 MemoTech PAD (for NMS)	1 *
2.4 CX1000 Frame Relay Switch (for NMS)	1
3. Communication link Whitehill / Bracknell	
3.1 Fibre optic 64 Kbps circuits	2 *
4. Whitehill earth station (uplink equipment)	
4.1 Telecoms controller Megapac V rack assembly	2
4.2 Station interface unit (SIU)	2
4.3 8360 Modulator	2 *
4.4 8471 Receive Demodulators	12
4.5 8550 Modem Switch	1 *
4.6 140 - L band upconverter	2
4.7 X Term NMS simulator	1
4.8 Equipment Rack Assembly (Chain 1)	1 *
4.9 Equipment Rack Assembly (Chain 2)	1
5. Whitehill earth station (spares)	
5.1 8471 Receive Demodulators	1
5.2 Station interface unit (SIU)	1
5.3 Megapac V rack assembly	2
5.4 Megabox PACV Frad units	2
5.5 140 - L band upconverter	1
5.6 8360 Modulator	1
5.7 8550 Modem Switch	1

6.	Whitehill services (leased from Astrium under contract to Cable & Wireless)	
6.1	70 MHz to 140 MHz converters	2 *
6.2	140 MHz to C band converter	2 *
6.3	Satellite Hub leased bandwidth	1 slot *
7.	TWO-WAY VSAT Systems (2 in number)	
7.1	Channel master 2.4 metre type approved antenna	2
7.2	5 watt C Band Outdoor unit assembly	2
7.3	Low noise block downconverter	2
7.4	RF Integration kit	2
7.5	Indoor unit rack assembly	2
7.6	Station interface unit (SIU)	2
7.7	8471 Receive Demodulators	2
7.8	Telecoms interface units Megabox	2
7.9	8371 Modulator	2
7.10	Tool kit	2
7.11	Cross-site cables set	2
8.	Test Rig at Poynton	
8.1	Enhanced Simulator	1
9	Communications equipment for SADIS second generation trial	
9.1	FROST or TROPICS port	1
9.2	Megapac	1
9.3	QPSK Modulator	1
9.4	QPSK De-Modulator/Receivers	2
9.5	Modem running Viterbi or Turbo coding	1
9.6	ISDN service between Bracknell and Whitehill	
9.7	ISDN call charges for the duration of the trial	

(*) Denotes equipment reused from original broadcast system.

2. PROCURED SERVICES

- a) Space segment annual lease: 900 MHz radio frequency dedicated to SADIS with data rates at 38.4 Kbps for the one-way channel and 19.2 Kbps for the two-way channel;
- b) Annual maintenance of Met Office and Whitehills site equipment which is not leased;
- c) Gateway function:
 - i) Communication link between Met Office and NATS infrastructure site;
 - ii) System maintenance.

3. ANNUAL STAFF REQUIREMENTS

A. Met Office of the UK

Help Desk

Note.— The Help Desk acts as a first point of contact for all inquiries, including those concerning the OPMET Gateway function. Complex inquiries will be passed to a relevant expert. Experts are available either on a 24-hour rota basis, or as a daytime support with a call-out capability.

<i>24-hour support</i>	<i>Grade and skill</i>
1. Help desk (first point of contact)	Scientific supervisor
2. Operational supervisor	Technical meteorologist
3. Systems supervisor	Computer engineer
4. HQ maintenance support	Telecommunication technical officer

The total support for SADIS is considered as 10% of the total support offered by the four posts. These four posts are directly involved with SADIS operations and form part of a total roster of eight different skills and functions.

<i>Additional support</i>	<i>Grade and skill</i>
Systems integration team	2% of engineer 20% of network computer engineer
Administrator	55% of executive officer 70% of support specialist and meteorologist (providing support to ICAO Regions, SADIS users and SADIS User Guide)

Development & enhanced 2-Way Field Trial Support and other projects

Manpower	10% of engineer 10% of data traffic manager
Budgets	Travel/Expenses (Consultants fees etc.)

SADIS second generation trial

Manpower	5% of engineer 5% of specialist
Budgets	Engineering consultancy

B. NATS infrastructure site (OPMET Gateway function)

See also note under 3. A., “Help desk”, above.

<i>24-hour support</i>	<i>Grade and skill</i>
1. Operational staff support	40 50% of air traffic services assistant
2. Engineering staff support	20% of systems engineer
3. SADIS administration support	100 50% of air traffic services assistant

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