



SCRAG/5 - REPORT

INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF

**THE FIFTH MEETING OF THE SADIS COST RECOVERY
ADMINISTRATIVE GROUP
(SCRAG/5)**

(Paris, 8 and 9 November 2004)

THE DESIGNATIONS AND THE PRESENTATION OF MATERIAL IN THIS PUBLICATION DO NOT IMPLY THE EXPRESSION OF ANY OPINION WHATSOEVER ON THE PART OF ICAO CONCERNING THE LEGAL STATUS OF ANY COUNTRY, TERRITORY, CITY OR AREA OF ITS AUTHORITIES, OR CONCERNING THE DELIMITATION OF ITS FRONTIERS OR BOUNDARIES.

TABLE OF CONTENTS

	<i>Page</i>
Introduction	2
Place and duration	2
Attendance	2
Officers and Secretariat	2
Agenda	2
Agenda Item 1: Review of SCRAG's Terms of Reference, Composition and Working Arrangements	2
Agenda Item 2: Consideration of issues relevant to the SCRAG's work addressed by the SADIS Operations Group (SADISOPSG)	3
Agenda Item 3: Review of actual SADIS costs and cost shares for the period 1 January to 31 December 2003	4
Agenda Item 4: Review of estimated SADIS costs and cost shares for the period 1 January to 31 December 2005	6
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	8
Agenda Item 6: Future work and arrangements for the SCRAG/6 Meeting	8
Agenda Item 7: Other business	9
Appendix A: List of participants	A-1
Appendix B: List of SCRAG/5 working papers	B-1
Appendix C: Inventory of assets as at 31 December 2004 employed by the United Kingdom to provide SADIS services	C-1
Appendix D: Status of accession to the SADIS Agreement as at 1 November 2004	D-1
Appendix E: Actual costs shares for the period 1 January to 31 December 2003	E-1
Appendix F: Audit of the UK Met Office SADIS costs for the calendar year 2003	F-1
Appendix G: SADIS cost estimates for 2005 to 2008 for SADIS services provided by the United Kingdom Meteorological Office	G-1
Appendix H: Status of payment of the assessment for 2003 and of balances for years prior to 2003 as at 12 October 2004	H-1
Appendix I: Estimated cost shares and assessments for the period 1 January to 31 December 2005	I-1
Appendix J: Amendment to Annex II, SADIS Inventory, to the SADIS Agreement	J-1

INTRODUCTION

Place and duration

i.1 The Fifth Meeting of the SADIS Cost Recovery Administrative Group (SCRAG) was held in the European and North Atlantic (EUR/NAT) ICAO Regional Office, Paris, on 8 and 9 November 2004.

Attendance

i.2 The Meeting was attended by two 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. Björn Hellroth**, Regional Officer.

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 2003

Agenda Item 4: Review of estimated SADIS costs and cost shares for the period 1 January to 31 December 2005

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/6 Meeting.

Agenda Item 7: Other business.

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

1.1 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.

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

“The SADIS Cost Allocation and Recovery (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.”

1.3 The Group was informed that ICAO had received a formal notification of accession to the SADIS Agreement from 44 States, that 10 States had informed ICAO of their intention to accede to the SADIS Agreement but had not yet sent a formal notification of accession and that 30 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 30 States, 18 are Least Developed Countries (LDCs), which are exempted from payment of SADIS cost share, and that the SADIS cost share for the year 2003 of 11 other ones had been paid. (See **Appendix D**).

1.4 The Group agreed that a reminder be sent by the Secretariat to those States receiving the SADIS service, which have not yet acceded to the SADIS Agreement.

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 Ninth Meeting of the SADIS Operations Group (SADISOPSG/9, Dakar, 1 to 4 June 2004) 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 Ninth meeting (SADISOPSG/9, Dakar, 1 to 4 June 2004) to SCRAG that the operational efficacy of the SADIS had continued to be satisfactory meeting all operational requirements since the SADISOPSG/8 Meeting (Bangkok, 7 to 10 July 2003).

2.3 The Group noted Conclusion 9/7 of SADISOPSG/9 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 paragraphs 5.1, 5.2 and **Appendix J**).

2.4 The Group noted the proposal to make WAFS forecasts and OPMET data available through an Internet-based FTP service as a primary components of the SADIS service in parallel with the satellite broadcast and to include the components of the SADIS FTP service in the SADIS inventory with the understanding that the users of the FTP service would continue to be considered SADIS users and would have to contribute to the mandatory cost recovery in accordance with the SCAR arrangement.

2.5 The Group noted Conclusion 9/15 a) of SADISOPSG/9 instructing the Chairman of SADISOPSG to advise the Chairman of SCRAG that the second-generation prototype (SADIS 2G) would be implemented on 1 September 2004 and that the SADIS 1G will remain operational until 31 December 2008 to cater to those States and SADIS users which will not be in a position to purchase new receivers until 2008. Taking into account the foreseen difficulties for the LDCs to bear the costs for SADIS 2G receivers, it was suggested that this period should if possible be shortened in order to

reduce the additional costs related to the operation of the dual services and the savings be used to support the LDCs in purchasing the 2G receivers. The Secretary however pointed out that the use of the savings to finance the purchasing of receivers would not be compliant with the provisions of the SCAR arrangement.

AGENDA ITEM 3: REVIEW OF ACTUAL SADIS COSTS AND COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003

Review of the 2003 Actual SADIS Costs

3.1 The Group reviewed the actual costs provided by the United Kingdom of providing the SADIS services in the year 2003. These actual costs are presented in **Appendix E** and total £461,133. A summary of these costs is presented in **Table 1**.

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

Cost Item	Actual Costs (UK £)
UK Meteorological Office	349 602
UK NATS Gateway	78 449
UK administrative costs	17 787
Sub-total UK	445 838
ICAO support services costs	15 295
TOTAL	461 133

3.2 The Group noted that the 2003 actual costs incurred by the UK Met Office for the provision of the SADIS service were audited as requested by the SCRAG/4 Meeting. The audit report in **Appendix F** confirmed that the costs charged by the UK Met Office under the SADIS Agreement are allocated in accordance with the SADIS Agreement and its annexes. The Group agreed that such audit be conducted every third year in future under normal circumstances.

Review of the 2003 Actual SADIS Cost Shares

3.3 The Group noted that three States, Indonesia, Morocco and the Russian Federation, which were assessed for the year 2003 by the SCRAG/3 Meeting, have had the SADIS service withdrawn on 6 August 2002 due to the fact they had not paid their estimated SADIS cost share for 2001. The service to these States was not reinstated in 2003. Consequently, their respective share of the actual costs for 2003 is nil.

3.4 The Group noted that one State, Pakistan, which was not assessed for the year 2003 by the SCRAG/3 Meeting, has had the SADIS service withdrawn on 13 August 2001 but reinstated on 9 April 2003. Consequently, the share of the actual costs for 2003 for Pakistan was calculated based on 8 full months of service in 2003.

3.5 The Group noted that one State, Turkmenistan, which was assessed for the year 2003 by the SCRAG/3 Meeting, has had the service withdrawn on 1 October 2003 due to the fact they it did not pay its SADIS cost share for prior years. Consequently, the share of the actual costs for 2003 for

Turkmenistan was calculated based on 9 full months of service in 2003.

3.6 The Group determined the actual cost shares 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 their number of ATKs in scheduled services for 2003, 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 5/1 -

The actual cost shares for 2003 as shown in Appendix E to the SCRAG/5 Report for the States participating in the SCAR Arrangement are approved by the SCRAG/5 Meeting, in view of the adjustments to be made by the CAA of the United Kingdom in its billing of these States.

3.7 The Group received information from the observer from the United Kingdom on the status of payment of the cost shares of 2003 as at 12 October 2004. It noted that a total amount of £455,675 was collected and a total amount of credit balance from 2001 of £22,476 was applied against the assessments for 2003, both amounts representing 93.3% of the original assessments for 2003 as approved by the SCRAG/3 Meeting and of the additional assessments for 2003 as approved by the SCRAG/4 Meeting.

3.8 Having noted the information in Table 1 and paragraphs 3.3 to 3.7 above, the Group agreed that the net amount of the over-recovery of SADIS cost shares for the year 2003 amounts to £5,801 as shown in **Table 2**. This over-recovery is the difference between the actual costs for 2003 (£461,133), to which the under-recovery for 2001 is added (£47,971) in order to obtain the amount subject to collection for 2003, and the collections from States for 2003 (£455,675 as shown in **Appendix H - Table 1**) plus the collections from States for years prior to 2003 after 1 October 2003 (£59,230 as shown in **Appendix H - Table 2**), and it formulated the following Conclusion:

Conclusion 5/2 -

A net over-recovery, amounting to £5,801 of the SADIS cost shares for the year 2003 will be taken into account in the calculation of the SADIS cost shares for the year 2005, in accordance with Article XI, paragraph 4 of the SADIS Agreement.

Depreciated Assets

3.9 The Group noted the information presented by the UK regarding the depreciated assets as at 31 December 2004 (see **Appendix C**).

TABLE 2
OVER-RECOVERY FOR 2003

		(UK £)	References
(1)	Actual costs for 2003	461 133	Table 1
(2)	Under-recovery for 2001	47 971	SCRAG/3 Report, Table 3
(3)	Subject to collection for 2003	509 104	(1) + (2)
(4)	Collected from States for 2003 (as at 12 October 2004)	455 675	Paragraph 3.8
(5)	Collected from States for years prior to 2003 after 1 October 2003 (as at 12 October 2004)	59 230	Paragraph 3.8
(6)	Over-recovery for 2003	(5 801)	(3) – (4) – (5)

**AGENDA ITEM 4: REVIEW OF ESTIMATED SADIS COSTS AND COST SHARES FOR THE PERIOD
1 JANUARY TO 31 DECEMBER 2005**

Review of the 2005 Estimated SADIS Costs

4.1 The Group reviewed the cost estimates provided by the United Kingdom for providing the SADIS services in the year 2005. These cost estimates are detailed in **Appendix G** and total £ 525,365. A summary of these costs is presented in **Table 3** below.

TABLE 3
SUMMARY OF ESTIMATED SADIS COSTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2005

Cost Item	Estimated Costs (UK £)
UK Meteorological Office	345 065
UK NATS Gateway	140 300
UK administrative costs	20 000
Sub-total UK	505 365
ICAO support services costs	20 000
TOTAL	525 365

4.2 The Group considered the over-recovery in **Table 2** above in the calculation of the amount to be assessed under the SADIS Agreement for 2005. The calculation of the amount to be assessed is presented in **Table 4**.

TABLE 4
AMOUNT TO BE ASSESSED UNDER THE SADIS AGREEMENT FOR 2005

		(UK £)	References
(1)	Over-recovery for 2003	(5 801)	Table 2
(2)	Estimated costs for 2005	525 365	Table 3
(3)	Amount to be assessed for 2005	519 564	(1) + (2)

Review of the 2005 Estimated SADIS Cost Shares

4.3 The Group determined the cost shares for the period 1 January to 31 December 2005 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, on the basis of the number of available tonne-kilometres (ATKs) in scheduled services for 2003, in accordance with Article XI, paragraph 3 of the SADIS Agreement. The Group noted that two States, Morocco and Turkmenistan, which were assessed for the year 2003 by the SCRAG/3 Meeting and which have had the service withdrawn for failure of payment of their SADIS cost shares, are not included in the calculation of the assessment of cost shares for 2005. The cost share in percentage terms and the share in £ sterling, including the share of over-recovery for 2003, to be borne by each State are shown in **Appendix I**.

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 I**. Accordingly the Group formulated the following Conclusion:

Conclusion 5/3 -

The estimated cost shares for 2005 as shown in Appendix I to the SCRAG/5 Report for each State participating in the SCAR Arrangement are approved by the SCRAG/5 Meeting for collection by the United Kingdom.

Cost estimates for the years 2006 to 2008

4.5 The Group considered the estimates provided by the United Kingdom (see **Appendix G**) and summarised in **Table 5** of providing the SADIS services for the years 2006 to 2008 as well as the estimates for the United Kingdom administrative costs and the costs of ICAO support services.

TABLE 5
SUMMARY OF ESTIMATED SADIS COSTS
FOR THE YEARS 2006, 2007 AND 2008*

Cost Item	Estimated Costs 2006 (UK £)	Estimated Costs 2007 (UK £)	Estimated Costs 2008 (UK £)
UK Meteorological Office	425 819	425 819	425 819
UK NATS Gateway	139 907	136 381	101 622
UK administrative costs	20 000	20 000	20 000
Sub-total UK	585 726	582 200	547 441
ICAO support services costs	20 000	20 000	20 000
TOTAL	605 726	602 200	567 441

* Estimates based on 2004 prices.

4.6 The Group noted the information provided by the Secretary to the effect that the ICAO support services costs might increase as of 1 January 2006, by an amount of approximately £ 22 000 per year, to cover the costs incurred by the Air Navigation Bureau of ICAO to support the SADISOPSG, subject to an amendment to Article VIII of the SADIS Agreement.

4.7 The Group noted that the main reasons for the increase as compared with the estimated costs presented at the SGRAG/4 Meeting are related to the costs associated with the satellite segment, the FTP service via Internet and the SADIS 2G.

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 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 implementation of the SADIS FTP service as of 1 July 2005.

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

Conclusion 5/4 -

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 J to the SCRAG/5 Report.

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

6.1 The Group agreed that, subject to confirmation, its Sixth Meeting should be held in the ICAO Middle East Regional Office, Cairo (Egypt) on 15-16 November 2005.

AGENDA ITEM 7: OTHER BUSINESS

7.1 The Group expressed its appreciation and thanks to the staff of the European and North Atlantic (EUR/NAT) ICAO Regional Office for their hospitality and excellent support received during the meeting.

APPENDIX A

LIST OF PARTICIPANTS

Members

Mr. L.J.N. Rolvink

International Policy
Air Traffic Control
P.O. Box 75200
1117 ZT Luchthaven Schipol
Kingdom of the Netherlands
Tel.: +31 20 406 3210
Fax: +31 20 406 3648
Email: l.j.n.rolvink@lvnl.nl

Dr. Erland Lorenzen

Aviation MET Department
Head Customer Relation and Sales
Deutscher Wetterdienst
Kaiserleistraße 42
63067 Offenbach
Germany
Tel : +49 69 8062 26 94
Fax : +49 69 8062 20 14
Email : erland.lorenzen@dwd.de

Observers

United Kingdom as SADIS provider

Mr. Graham P. Stevens

Policy Adviser
Civil Aviation Authority
3W Aviation House
Gatwick Airport South
West Sussex, RH6 0YR
United Kingdom
Tel: +44 1293 573434
Fax: +44 1293 573820
Email: graham.stevens@caa.co.uk

Advisors

Mr. Bernard Perry

Head of Met Authority
Civil Aviation Authority
CAA House (K6G1)
45-59 Kingsway
London WC2B 6TE
United Kingdom
Tel: +44 207 453 6526
Fax: +44 207 453 6565
Email: bernard.perry@dap.caa.co.uk

Mr. Nigel Gait

International Aviation Manager
Met Office
Fitzroy Road, Exeter
EX1 3PB
United Kingdom
Tel: +44 1392 886268
Fax: +44 1392 885681
Email: nigel.gait@metoffice.gov.uk

Mr. Richard Orrell

Senior International Aviation Analyst
Met Office
Fitzroy Road, Exeter
EX1 3PB
United Kingdom
Tel: +44 1392 884892
Fax: +44 1392 885681
Email : richard.orrell@metoffice.gov.uk

SADIS Operations Group

Dr. Theo van Stijn

Royal Netherlands Meteorological Institute (KNMI)
P.O Box 201
3730 AE DE BILT
Netherlands
Tel: +31 302 20 6471
Fax: +31 302 21 0407
Email: stijnv@knmi.nl

ICAO Secretariat

Mr. Jean-Claude Bugnet

Chief, Joint Financing Section
International Civil Aviation Organization
999 University Street
Montreal, QC, Canada H3C 5H7
Tel: + 1 514 954 8053
Fax: + 1 514 954 6744
Email: jcbugnet@icao.int

Mr. Björn Hellroth

Regional Officer
International Civil Aviation Organization
European and North Atlantic Office
bis Villa Émile-Bergerat
92522 Neuilly-sur-Seine (Cedex)
France
Tel : +33 1 46 41 85 22
Fax : +33 1 46 41 85 00
Email : bhellroth@paris.icao.int

APPENDIX B**LIST OF SCRAG/5 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	Reports on Conclusions of the SADISOPSG/9 Meeting	Chairman, SADISOPSG
4	3	2003 UK actual SADIS costs	United Kingdom
5	3	2003 ICAO actual SADIS administrative costs	Secretariat
6	3&4	Status of payments for the year 2003	United Kingdom & Secretariat
7	3	Summary of actual costs and cost shares for the year 2003	Secretariat
8	4	Depreciated assets: SADIS costs	United Kingdom
9	4	Estimated SADIS Costs: 2 to 5 years	United Kingdom
10	4	Summary of estimated costs and assessments for the year 2005	Secretariat
11	5	Amendment to Annex II, Inventory, to the SADIS Agreement	Secretariat
12	3	Audit of MET Office SADIS costs	United Kingdom

APPENDIX C

**INVENTORY OF ASSETS AS AT 31 DECEMBER 2004
EMPLOYED BY THE UNITED KINGDOM TO PROVIDE SADIS SERVICES**

(1) Inventory of Assets: 2004	(2) Original Value	(3) Depreciated charges in 2004	(4) Total accumulated depreciation	(5) Net depreciated values at end of 2004
Original HUB Investment, Trial Systems and Capitalized Operation Asset	£713 769	£0	£713 769	£0
Two-Way Hub enhancement, VSATS and development	£375 000	£0	£375 000	£0
SADIS 2G Operational System	£87 428	£17 485	£17 485	£69 943
Total UKMO	£1 176 197	£17 485	£1 106 254	£69 943
SADIS Gateway	£227 462	£45 492	£77 987	£149 475

D - 1
APPENDIX D
STATES WHICH FORMALLY ACCEDED
TO THE SADIS AGREEMENT

States	LDC's Exempted
Austria	
Bahrain	
Belgium	
Botswana	
Cameroon	
China	
Congo	
Côte d'Ivoire	
Croatia	
Cyprus	
Czech Republic	
Democratic People's Republic of Korea	
Democratic Republic of the Congo	X
Denmark	
Egypt	
Estonia	
Finland	
Gabon	
Georgia	
Germany	
Hungary	
Italy	
Jordan	
Madagascar	X
Mauritius	
Mongolia	
Morocco	
Netherlands	
Oman	
Pakistan	
Portugal	
Republic of Moldova	
Romania	
Russian Federation	
Senegal	
Sweden	
Switzerland	
Thailand	
Tunisia	
Turkmenistan	
United Arab Emirates	
United Kingdom	
United Republic of Tanzania	X
Viet Nam	

APPENDIX D (cont'd)
STATES WHICH SENT A LETTER OF INTENTION
TO ACCEDE TO THE SADIS AGREEMENT

States	LDC's Exempted
Armenia	
Azerbaijan	
Greece	
Kenya	
Kuwait	
Malta	
Saudi Arabia	
Serbia and Montenegro	
Turkey	
Ukraine	

APPENDIX D (cont'd)
STATES WHICH HAVE NOT YET REPLIED
TO THE INVITATION TO ACCEDE TO THE SADIS AGREEMENT

States	LDC's Exempted
Algeria	
Bangladesh	X
Benin	X
Bulgaria	
Burkina Faso	X
Chad	X
Equatorial Guinea	X
Ethiopia	X
Gambia	X
Ghana	
Guinea	X
India	
Indonesia	
Lao People's Democratic Republic	X
Lebanon	
Maldives	X
Malaysia	
Mozambique	X
Nepal	X
Niger	X
Nigeria	
Rwanda	X
Seychelles	
South Africa	
Sri Lanka	
Swaziland	
Togo	X
Uganda	X
Yemen	X
Zambia	X

APPENDIX E
ACTUAL COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003*

STATES	2003 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2003 Actual Costs (£ Sterling)
Algeria	488 542	0.229%	1 054.75
Armenia	113 673	0.053%	245.42
Austria	2 814 497	1.318%	6 076.44
Azerbaijan	313 697	0.147%	677.27
Bahrain	1 211 226	0.567%	2 615.01
Belgium	1 962 579	0.919%	4 237.17
Botswana	16 989	0.008%	36.68
Bulgaria	16 237	0.008%	35.06
Cameroon	99 980	0.047%	215.85
China **	42 331 982	19.819%	91 393.86
Congo	13 493	0.006%	29.13
Côte d'Ivoire	0	0.000%	0.00
Croatia	160 379	0.075%	346.25
Cyprus	645 743	0.302%	1 394.15
Czech Republic	751 021	0.352%	1 621.44
Democratic People's Republic of Korea	8 345	0.004%	18.02
Denmark	1 347 439	0.631%	2 909.09
Egypt	2 022 611	0.947%	4 366.77
Estonia	88 554	0.041%	191.19
Finland	2 167 954	1.015%	4 680.57
Gabon	357 951	0.168%	772.81
Georgia	41 408	0.019%	89.40
Germany	29 764 956	13.936%	64 261.92
Ghana	222 527	0.104%	480.43
Greece	1 438 474	0.673%	3 105.64
Hungary	664 037	0.311%	1 433.64
India	5 492 646	2.572%	11 858.51
Indonesia ***		0.000%	0.00
Italy	7 407 097	3.468%	15 991.77
Jordan	1 004 999	0.471%	2 169.77
Kenya	894 006	0.419%	1 930.14
Kuwait	1 383 053	0.648%	2 985.98
Lebanon	540 515	0.253%	1 166.96
Malaysia	8 300 906	3.886%	17 921.48
Malta	357 014	0.167%	770.79
Mauritius	1 162 517	0.544%	2 509.85

APPENDIX E (cont'd)
ACTUAL COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2003*

STATES	2003 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2003 Actual Costs (£ Sterling)
Mongolia	130 490	0.061%	281.73
Morocco ***		0.000%	0.00
Netherlands	14 738 860	6.901%	31 820.89
Nigeria	78 802	0.037%	170.13
Oman	1 351 723	0.633%	2 918.34
Pakistan ***	1 625 147	0.761%	3 508.66
Portugal	2 489 262	1.165%	5 374.26
Republic of Moldova	39 417	0.018%	85.10
Romania	415 653	0.195%	897.39
Russian Federation ***		0.000%	0.00
Saudi Arabia	5 382 875	2.520%	11 621.51
Senegal	74 614	0.035%	161.09
Serbia and Montenegro	272 960	0.128%	589.31
Seychelles	229 652	0.108%	495.81
South Africa	5 875 259	2.751%	12 684.56
Sri Lanka	1 248 385	0.584%	2 695.24
Swaziland	0	0.000%	0.00
Sweden	2 068 576	0.968%	4 466.01
Switzerland	5 798 042	2.715%	12 517.85
Thailand	8 881 944	4.158%	19 175.93
Tunisia	426 908	0.200%	921.69
Turkey	3 222 686	1.509%	6 957.71
Turkmenistan ***	183 062	0.086%	395.23
Ukraine	478 912	0.224%	1 033.96
United Arab Emirates	10 136 258	4.746%	21 883.97
United Kingdom	31 493 880	14.745%	67 994.63
Viet Nam	1 338 036	0.626%	2 888.79
TOTAL	213 588 450	100.000%	461 133.00

* 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 SAR: 14 695 632 000 ATKs corresponding to a share of 2003 actual costs of £ 31 727.56
- Macau SAR: 294 444 000 ATKs corresponding to a share of 2003 actual costs of £ 635.70

*** The shares of Indonesia, Morocco and the Russian Federation were nil in 2003 since they did not receive the service in 2003. The share of Pakistan and Turkmenistan were calculated for only 8 and 9 months respectively in 2003, based on the number of full months of operation of the service to these States in 2003. In order to properly calculate their share of the 2003 actual costs, only 8/12th and 9/12th respectively of their ATKs for 2003 were included in the second column.

- - - - -

APPENDIX F

AUDIT OF THE UK MET OFFICE SADIS COSTS FOR THE CALENDAR YEAR 2003



Accountants and business advisors

Farringdon Place 20 Farringdon Road London EC1M 3AP Telephone 020 7065 0000 Facsimile 020 7065 0650
Web site <http://www.pkf.co.uk>

Mr N Gait
International Aviation Manager
Met Office
Fitzroy Road
Exeter

EX1 3PB

22 October 2004

Dear Sir

AUDIT OF MET OFFICE (UK) SADIS COSTS

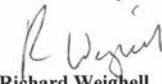
We have carried out our audit of the UK Met Office statement of costs for the calendar year 2003 in respect of SADIS as set out in Tables 1, 2 and 3 supported by the notes and annexes a to P. Our work has been undertaken so that we might identify and report material non compliances with the SADIS agreement and for no other purpose.

We planned and performed our audit so as to obtain all information and explanations which we consider necessary in order to provide us with sufficient evidence to give reasonable assurance that the statement of costs is free from material misstatement.

Based on the audit work carried out we are satisfied that the costs charged by the UK Met Office under the SADIS agreement are allocated in accordance with the SADIS agreement and its annexes. We can also confirm that we have checked the calculation of the capitation rates and are satisfied that they are appropriate and supported.

I trust that this is sufficient for your needs.

Yours faithfully


Richard Weighell
Partner

APPENDIX G

**SADIS COST ESTIMATES FOR 2005 TO 2008 FOR SADIS SERVICES PROVIDED BY THE
UNITED KINGDOM METEOROLOGICAL OFFICE**

Table 1	Year 2005 Projected Costs at 2004 prices	Year 2006 Projected Costs at 2004 prices	Year 2007 Projected Costs At 2004 prices	Year 2008 Projected Costs at 2004 prices
Inventory ref.				
1. Equipment				
ii) Principally procured for SADIS				
b) communications between Whitehill and MET Office:				
- Comms EGRR-Whitehill	4 709	4 709	4 709	4 709
- ISDN Back-up link	372	372	372	372
Not procured principally for SADIS				
a) message switch (TROPICS/FROST):				
- Message Switch-1G	14 630	14 630	14 630	14 630
- Message Switch-2G	14 630	14 630	14 630	14 630
- Message Switch FTP	5 720	11 440	11 440	11 440
- Bandwidth-FTP-ISP	13 000	26 000	26 000	26 000
c) Communication Link SADIS Gateway and Met Office:				
- NATS Links	3 340	3 340	3 340	3 340
- FTP Equipment Running Costs	11 000	22 000	22 000	22 000
Equipment sub total	67 401	97 121	97 121	97 121
2. Procured services				
a) space segment annual lease:				
- Satellite segment	78 264	121 957	121 957	121 957
b) annual maintenance				
- 1G C&W maintenance	9 816	9 816	9 816	9 816
- 1G facilities management	6 300	6 300	6 300	6 300
- 2G maintenance	16 750	16 750	16 750	16 750
- 2G facilities management	6 300	6 300	6 300	6 300
Procured services sub total	117 430	161 123	161 123	161 123

3. Annual Staff Requirements				
Help Desk	25 519	25 519	25 519	25 519
Additional Support:				
Systems Integration Team – Network Comp Eng Administrator:	12 685	12 685	12 685	12 685
- Executive Officer	55 640	55 640	55 640	55 640
- Aviation Manager	13 712	13 712	13 712	13 712
Development & enhanced two-way field trial support and other projects				
Data Traffic Manager	3 823	3 823	3 823	3 823
Staff sub total	111 379	111 379	111 379	111 379
Sub total	296 210	369 623	369 623	369 623
Cost of depreciated capital				
SADIS 2G	17 485	17 485	17 485	17 485
Sub Total	313 695	387 108	387 108	387 108
Cost of Capital	31 370	38 711	38 711	38 711
Total UKMO SADIS	345 065	425 819	425 819	425 819

TABLE 2	Year 2005	Year 2006	Year 2007	Year 2008
<u>NATS GATEWAY</u>	Projected Costs at 2004 prices			
Operational Staff Support: Air Traffic Services Assistant	48 793	48 793	48 793	48 793
Engineering Staff Support: Systems Engineer	19 775	19 775	19 775	19 775
SADIS Administration Support	13 287	13 287	13 287	13 287
SUB TOTAL	81 855	81 855	81 855	81 855
Communication Link to UKMO	0	0	0	0
System maintenance	3 132	6 264	6 264	6 264
SUB TOTAL	3 132	6 264	6 264	6 264
<u>COST OF DEPRECIATED CAPITAL</u>				
OPMET Gateway Function	45 492	45 492	45 492	12 999
Cost of capital	9 821	6 296	2 770	504
<u>TOTAL FOR GATEWAY</u>	140 300	139 907	136 381	101 622
CAA Admin	20 000	20 000	20 000	20 000
ICAO Admin	20 000	20 000	20 000	20 000
TOTAL Costs	525 365	605 726	602 200	567 441

APPENDIX H

TABLE 1
STATUS OF PAYMENT OF THE ASSESSMENT FOR 2003
AS AT 12 OCTOBER 2004

STATES	Share of 2003 Assessment (£ Sterling)	Amount Collected as at 12 October 2004 (£ Sterling)	Application of credit balance (or part of) from 2001 (£ Sterling)	Unpaid amount as at 12 October 2004 (£ Sterling)
Algeria	1 292.83	1 292.83		
Armenia	365.19	355.38	9.81	
Austria	6 614.07	6 614.07		
Azerbaijan	595.41	595.41		
Bahrain	1 838.00	1 838.00		
Belgium	10 739.51	10 739.51		
Botswana	37.45	37.45		
Bulgaria	181.17	181.17		
Cameroon	245.25	191.19	54.06	
China *	88 975.33	88 975.33		
Congo	132.68	21.71	110.97	
Côte d'Ivoire	103.80		103.80	
Croatia	361.27	361.27		
Cyprus	1 191.70	1 179.29	12.41	
Czech Republic	1 350.53	1 350.53		
Democratic People's Republic of Korea	18.80		18.80	
Denmark	3 351.23	3 351.23		
Egypt	4 957.71	4 149.71	808.00	
Estonia	146.85	146.85		
Finland	4 322.38	3 915.46	406.92	
Gabon	824.47	578.72	245.75	
Georgia	100.17	60.00	40.17	
Germany	61 374.86	61 374.86		
Ghana	952.80	952.80		
Greece	4 326.22	4 326.22		
Hungary	1 637.64	1 608.65	28.99	
India	10 915.80	10 618.91	296.89	
Indonesia	8 068.67			8 068.67
Italy	19 205.51	16 837.89	2 367.62	
Jordan	2 111.38	1 765.81	345.57	
Kenya	1 624.78	1 624.78		
Kuwait	3 180.89	2 874.07	306.82	
Lebanon	1 244.23	1 191.59	52.64	
Malaysia	19 171.14	19 171.14		
Malta	945.74	817.88	127.86	
Mauritius	2 523.75	2 523.75		

APPENDIX H (cont'd)

TABLE 1 (cont'd)
STATUS OF PAYMENT OF THE ASSESSMENT FOR 2003
AS AT 12 OCTOBER 2004

STATES	Share of 2003 Assessment (£ Sterling)	Amount Collected as at 12 October 2004 (£ Sterling)	Application of credit balance (or part of) from 2001 (£ Sterling)	Unpaid amount as at 12 October 2004 (£ Sterling)
Mongolia	229.32	229.32		
Morocco	3 319.86			3 319.86
Netherlands	35 284.43	31 785.12	3 499.31	
Nigeria	146.65		146.65	
Oman	1 990.77	1 990.77		
Pakistan	3 920.64	3 920.64		
Portugal	5 100.90	5 033.54	67.36	
Republic of Moldova	68.55	68.55		
Romania	1 177.29	1 095.89	81.40	
Russian Federation	21 675.37			21 675.37
Saudi Arabia	12 589.17	10 574.35	2 014.82	
Senegal	104.31		104.31	
Serbia and Montenegro	429.94	429.94		
Seychelles	596.71			596.71
South Africa	12 409.42	10 841.29	1 568.13	
Sri Lanka	3 121.11	3 121.11		
Swaziland	27.07			27.07
Sweden	5 249.28	5 249.28		
Switzerland	17 670.20	15 943.01	1 727.19	
Thailand	19 855.39	19 855.39		
Tunisia	1 071.55	906.83	164.72	
Turkey	8 141.26	8 141.26		
Turkmenistan	558.61			558.61
Ukraine	763.10	652.48	110.62	
United Arab Emirates	14 197.13	14 197.13		
United Kingdom	75 321.90	67 667.45	7 654.45	
Viet Nam	2 348.50	2 348.50		
TOTAL	512 397.64	455 675.31	22 476.04	34 246.29

* China's share includes:

- Hong Kong SAR: assessment of £ 32 745.47
- Macau SAR: assessment of £ 726.48

APPENDIX H (cont'd)

TABLE 2
STATUS OF PAYMENT OF BALANCES FOR YEARS PRIOR TO 2003
AS AT 12 OCTOBER 2004

STATES	Balance due for years prior to 2003 (£ Sterling)	Amount Collected as at 12 October 2004 (£ Sterling)	Application of credit balance (or part of) from 2001 (£ Sterling)	Unpaid amount as at 12 October 2004 (£ Sterling)
Algeria	29.06	29.06		
Armenia	7.30	7.30		
Austria				
Azerbaijan	202.70	202.70		
Bahrain				
Belgium				
Botswana	1.45	1.45		
Bulgaria				
Cameroon				
China *	20 689.64	9 594.14		11 095.50
Congo				
Côte d'Ivoire				
Croatia	20.35	20.35		
Cyprus	74.04	74.04		
Czech Republic	25.15	25.15		
Democratic People's Republic of Korea				
Denmark	68.96	68.96		
Egypt				
Estonia				
Finland				
Gabon				
Georgia				
Germany				
Ghana				
Greece				
Hungary				
India				
Indonesia	13 128.79	8 057.67		5 071.12
Italy				
Jordan				
Kenya	435.29	435.29		
Kuwait	124.46	124.46		
Lebanon				
Malaysia				
Malta	152.34	152.34		
Mauritius	191.69	191.69		

APPENDIX H (cont'd)

TABLE 2 (cont'd)
STATUS OF PAYMENT OF BALANCES FOR YEARS PRIOR TO 2003
AS AT 12 OCTOBER 2004

STATES	Balance due for years prior to 2003 (£ Sterling)	Amount Collected as at 12 October 2004 (£ Sterling)	Application of credit balance (or part of) from 2001 (£ Sterling)	Unpaid amount as at 12 October 2004 (£ Sterling)
Mongolia	79.53	45.01		34.52
Morocco	4 601.37			4 601.37
Netherlands				
Nigeria	164.26		164.26	
Oman				
Pakistan				
Portugal	203.97			203.97
Republic of Moldova	5.91	5.91		
Romania				
Russian Federation	33 240.08	33 240.08		
Saudi Arabia				
Senegal	9.18		9.18	
Serbia and Montenegro	6.76	6.76		
Seychelles	385.61			385.61
South Africa				
Sri Lanka				
Swaziland	13.66			13.66
Sweden				
Switzerland				
Thailand	1 969.44	1 969.44		
Tunisia				
Turkey				
Turkmenistan	780.42			780.42
Ukraine	64.64	64.64		
United Arab Emirates	4 177.94	4 177.94		
United Kingdom				
Viet Nam	735.18	735.18		
TOTAL	81 589.17	59 229.56	173.44	22 186.17

* China's share includes:
- Hong Kong SAR: no unpaid balance
- Macau SAR: no unpaid balance

APPENDIX I
ESTIMATED COST SHARES AND ASSESSMENTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2005 *

STATES	2003 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2005 Estimated Costs (£ Sterling)	Share of Over-recovery for 2003 (£ Sterling)	Amount to be Assessed for 2005 (£ Sterling)
Algeria	488 542	0.214%	1 124.54	-12.42	1 112.12
Armenia	113 673	0.050%	261.66	-2.89	258.77
Austria	2 814 497	1.233%	6 478.48	-71.53	6 406.95
Azerbaijan	313 697	0.137%	722.08	-7.97	714.11
Bahrain	1 211 226	0.531%	2 788.03	-30.79	2 757.24
Belgium	1 962 579	0.860%	4 517.51	-49.88	4 467.63
Botswana	16 989	0.007%	39.11	-0.43	38.68
Bulgaria	16 237	0.007%	37.37	-0.41	36.96
Cameroon	99 980	0.044%	230.14	-2.54	227.60
China **	42 331 982	18.547%	97 440.83	-1 075.93	96 364.90
Congo	13 493	0.006%	31.06	-0.34	30.72
Côte d'Ivoire	0	0.000%	0.00	0.00	0.00
Croatia	160 379	0.070%	369.16	-4.08	365.08
Cyprus	645 743	0.283%	1 486.39	-16.41	1 469.98
Czech Republic	751 021	0.329%	1 728.72	-19.09	1 709.63
Democratic People's Republic of Korea	8 345	0.004%	19.21	-0.21	19.00
Denmark	1 347 439	0.590%	3 101.57	-34.25	3 067.32
Egypt	2 022 611	0.886%	4 655.70	-51.41	4 604.29
Estonia	88 554	0.039%	203.84	-2.25	201.59
Finland	2 167 954	0.950%	4 990.25	-55.10	4 935.15
Gabon	357 951	0.157%	823.94	-9.10	814.84
Georgia	41 408	0.018%	95.31	-1.05	94.26
Germany	29 764 956	13.041%	68 513.73	-756.52	67 757.21
Ghana	222 527	0.097%	512.22	-5.66	506.56
Greece	1 438 474	0.630%	3 311.12	-36.56	3 274.56
Hungary	664 037	0.291%	1 528.50	-16.88	1 511.62
India	5 492 646	2.407%	12 643.11	-139.60	12 503.51
Indonesia	4 198 186	1.839%	9 663.49	-106.70	9 556.79
Italy	7 407 097	3.245%	17 049.84	-188.26	16 861.58
Jordan	1 004 999	0.440%	2 313.33	-25.54	2 287.79
Kenya	894 006	0.392%	2 057.85	-22.72	2 035.13
Kuwait	1 383 053	0.606%	3 183.55	-35.15	3 148.40
Lebanon	540 515	0.237%	1 244.17	-13.74	1 230.43
Malaysia	8 300 906	3.637%	19 107.24	-210.98	18 896.26
Malta	357 014	0.156%	821.78	-9.07	812.71
Mauritius	1 162 517	0.509%	2 675.91	-29.55	2 646.36

APPENDIX I (cont'd)
ESTIMATED COST SHARES AND ASSESSMENTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2005 *

STATES	2003 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2005 Estimated Costs (£ Sterling)	Share of Over-recovery for 2003 (£ Sterling)	Amount to be Assessed for 2005 (£ Sterling)
Mongolia	130 490	0.057%	300.37	-3.32	297.05
Netherlands	14 738 860	6.458%	33 926.28	-374.61	33 551.67
Nigeria	78 802	0.035%	181.39	-2.00	179.39
Oman	1 351 723	0.592%	3 111.43	-34.36	3 077.07
Pakistan	2 437 720	1.068%	5 611.21	-61.96	5 549.25
Portugal	2 489 262	1.091%	5 729.85	-63.27	5 666.58
Republic of Moldova	39 417	0.017%	90.73	-1.00	89.73
Romania	415 653	0.182%	956.76	-10.56	946.20
Russian Federation	9 822 289	4.304%	22 609.19	-249.65	22 359.54
Saudi Arabia	5 382 875	2.358%	12 390.44	-136.81	12 253.63
Senegal	74 614	0.033%	171.75	-1.90	169.85
Serbia and Montenegro	272 960	0.120%	628.31	-6.94	621.37
Seychelles	229 652	0.101%	528.62	-5.84	522.78
South Africa	5 875 259	2.574%	13 523.82	-149.33	13 374.49
Sri Lanka	1 248 385	0.547%	2 873.56	-31.73	2 841.83
Swaziland	0	0.000%	0.00	0.00	0.00
Sweden	2 068 576	0.906%	4 761.50	-52.58	4 708.92
Switzerland	5 798 042	2.540%	13 346.08	-147.37	13 198.71
Thailand	8 881 944	3.892%	20 444.68	-225.75	20 218.93
Tunisia	426 908	0.187%	982.67	-10.85	971.82
Turkey	3 222 686	1.412%	7 418.06	-81.91	7 336.15
Ukraine	478 912	0.210%	1 102.37	-12.17	1 090.20
United Arab Emirates	10 136 258	4.441%	23 331.89	-257.63	23 074.26
United Kingdom	31 493 880	13.799%	72 493.37	-800.44	71 692.93
Viet Nam	1 338 036	0.586%	3 079.93	-34.01	3 045.92
TOTAL	228 238 436	100.000%	525 365.00	-5 801.00	519 564.00

* 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 SAR: 14 695 632 000 ATKs corresponding to a share of 2005 assessments of £ 33 453.27
- Macau SAR: 294 444 000 ATKs corresponding to a share of 2005 assessments of £ 670.27

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 FROST~~) consists of a number of units developed in conjunction with Astrium and other suppliers. These are installed either at ~~Bracknell Exeter~~ or at the uplink site at Whitehills, Oxfordshire, UK. ~~The components of the original inventory changed when the Two Way enhancement project was fully implemented.~~

i) Solely procured for SADIS

- a) ~~2 two way enhanced VSATs for enhanced two way capability;~~
- b) ~~SADIS gateway function 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
 - 1) Product display console, including software
- b) Communications between Whitehills and Met Office
 - 1) 2 Fibre Optic 64 Kbps circuits in support of SADIS 1G service: and
 - 2) 2 Fibre Optic 64 Kbps circuits in support of SADIS 2G service
- 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); and
 - 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 C; Lease represents only a very small part of this large aperture

- d) Communication link (SVC) between SADIS Gateway and Met Office in support of SADIS 1G service; and
- e) Communication link (SVC) between SADIS Gateway and Met Office in support of SADIS 2G service.

iii) **Not procured principally for SADIS**

- a) Message switch (FROST): Total investment £1.5 1.1M of which 4.76 1.33 per cent is attributable to SADIS usage: switching data to operational (1G) broadcast service;
- b) Message switch (FROST): Total investment £1.1M of which 1.04 per cent is attributable to SADIS FTP usage: switching data to operational FTP service;
- c) Message switch (FROST): Total investment £1.1M of which 1.33 per cent is attributable to SADIS usage: switching data to 2G service;
- d) Allocated bandwidth between server and Internet Service Provider (ISP) in support of the SADIS FTP service; and
- b) e) Message switch (CoreMet System).
- e) — Communication link (SVC) between SADIS Gateway and Met Office.

Note. — 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**

C. Hub equipment and services located at Exeter and Whitehill

<i>Item</i>	<i>Description</i>	<i>Quantity</i>
1.	Bracknell Exeter 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. Braeknell Exeter Equipment (Spare)

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 / Braeknell~~

3.1	Fibre optic 64 Kbps circuits	2 *
----------------	---	----------------

4.3. Whitehill earth station (uplink equipment)

4.3.1	Telecoms controller Megapac V rack assembly	2
4.3.2	Station interface unit (SIU)	2
4.3.3	8360 Modulator	2 *
4.3.4	8471 Receive Demodulators	12
4.3.5	8550 Modem Switch	1 *
4.3.6	140 - L band upconverter	2
4.3.7	X Term NMS simulator	1
4.3.8	Equipment Rack Assembly (Chain 1)	1 *
4.3.9	Equipment Rack Assembly (Chain 2)	1

5.4. Whitehill earth station (spares)

5.4.1	8471 Receive Demodulators	1
5.4.2	Station interface unit (SIU)	1
5.4.3	Megapac V rack assembly	2
5.4.4	Mega PACV Frad units	2
5.4.5	140 - L band upconverter	1
5.4.6	8360 Modulator	1
5.4.7	8550 Modem Switch	1

6.5. Whitehill services (leased from Astrium under contract to Cable & Wireless)

6.5.1	70 MHz to 140 MHz converters	2 *
6.5.2	140 MHz to C band converter	2 *
6.5.3	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 6. Test Rig at Poynton

8 6.1	Enhanced (SADIS 1G) Simulator	1
-------	-------------------------------	---

9 7. Communications equipment for SADIS second generation (2G) trial

9 7.1	FROST or TROPICS port	1
9 7.2	Megapac	4
9 7.3	QPSK Modulator (Comtech EFD)	1
9 7.4	QPSK De-Modulator/Receivers (Comtech EFD and Radyne Comstream)	2
9 7.5	Modem running Viterbi or Turbo coding with concatenated Reed Solomon coding	1
9 7.6	ISDN service between Bracknell Exeter and Whitehill	1
9 7.7	ISDN call charges for the duration of the trial	

Note. — One QPSK De-modulator/Receiver (Comtech EFD) and MegaPAC located in Zurich for use in the SADIS 2G trial.

8 ISDN back-up service to Washington (NWSTG)

8.1	Mega PAC 2003 router (MP-2003)	1
8.2	Mega PAC 2003 router plus expansion (MP-2003-3-B)	1
8.3	ISDN 2e circuit	1
8.4	A/B switch	1
8.5	Interface cables	1

Note. — Hardware listed items under Section 8 are located at Whitehill.

9. SADIS FTP service provision

9.1	HP L2000 servers with 2Gb RAM	2
9.2	18 Gb internal disk drives	2
9.3	DVD-ROM	2
9.4	Processors	2

Note. — The SADIS FTP service as of 1 July 2005.

10. Operational SADIS 2G Infrastructure

10.1	Frost port	1
10.2	MegaPAC V	3*
10.3	MegaPAC 2003	3*
10.4	Uplink modem	3
10.5	Communications cabinet and lease	1
10.6	Network Management System and licenses	1
10.7	MegaWatch and PC	1
10.8	Corobor comparator software and PC	1
10.9	SMS-301 Switch	1

** Note. — Includes one unit stored as a cold spare.*

(*) Denotes equipment reused from original broadcast system.

2. PROCURED SERVICES

- A. Space segment annual lease: 900 MHz radio 1.2 Mhz wide frequency band 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; and
- C. Gateway function:
 - i) Communication link between Met Office and NATS infrastructure site; and
 - ii) System maintenance.

3. ANNUAL STAFF REQUIREMENTS

A. Met Office of the UK

i) 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>Normal working hours</i>	<i>Grade and skill</i>
1. Help desk (first point of contact)	Scientific supervisor

Note. — Outside normal working hours, the helpdesk facility is provided by the 24-hour positions below.

<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
1. Operations systems analyst	Systems analyst
2. Production systems analyst	Systems analyst
3. Networks and services engineer	Computer engineer
4. Networks and systems supervisor	Technical supervisor

Note.—The total support for SADIS is considered as 10% 1 per cent of the total support offered by the four posts provided by the help desk and operational support function. These four posts are directly involved with SADIS operations and form part of a total roster of eight different skills and functions comprise 4 X 24-hour rosters of six staff each and a three-man team providing the normal working-hour help desk.

ii) Additional support

<i>Additional support</i>	<i>Grade and skill</i>
1. Systems integration team	2% of engineer
2. Administrator	20% per cent of network computer engineer 55% 75 per cent of executive officer 70% of support specialist and meteorologist (providing support to ICAO Regions, SADIS users and SADIS User Guide)
3. International aviation management	15 per cent of manager
4. Data traffic	5 per cent communications engineer

Note. — As a result of the audit of SADIS costs required by SCRAG, the help desk costs have been re-assessed and reduced to a level of 1 per cent of the total support offered.

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.)

iii) SADIS second generation (2G) trial

<i>Second generation trial</i>	<i>Grade and skill</i>
1. Manpower	5% per cent of engineer 5% per cent of specialist
2. Budgets	Engineering consultancy

iv) SADIS second generation (2G) operational implementation project

<i>Second generation roll-out</i>	<i>Grade and skill</i>
1. Manpower	15 per cent project manager 15 per cent network computer engineer 5 per cent engineering consultancy for systems support and maintenance
2. Budgets	Engineering consultancy

B. NATS infrastructure site (OPMET Gateway function)

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

24-hour support

Grade and skill

- | | |
|---------------------------------|--|
| 1. Operational staff support | 50% per cent of air traffic services assistant
(providing 24 hours x 7 days cover)
(H24/365) |
| 2. Engineering staff support | 20% 10 per cent of systems engineer
75 per cent of day support engineer |
| 3. SADIS administration support | 50% per cent of administrative air traffic
services assistant (working 40 hour week) |

- END -