



SCRAG/4 - REPORT

INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT OF

**THE FOURTH MEETING OF THE SADIS COST RECOVERY
ADMINISTRATIVE GROUP
(SCRAG/4)**

(Bangkok, 4 and 5 November 2003)

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INTRODUCTION

Place and duration

i.1 The Fourth Meeting of the SADIS Cost Recovery Administrative Group (SCRAG) was held in the Asia and Pacific (ASIA/PAC) ICAO Regional Office, Bangkok on 4 and 5 November 2003. The meeting was opened at 0900 by Mr. S. Ali, Deputy Regional Director who extended a welcome to the participants on behalf of the Asia and Pacific Regional Office, and emphasized the importance of the SADIS service and its contribution to improving the safety of civil aviation.

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 **Dr. Paul G. Hooper**, Regional Officer, Air Transport and **Mr. Dimitar H. Ivanov**, Regional Officer, Aeronautical Meteorology.

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 2002

Agenda Item 4: Review of estimated SADIS costs and cost shares for the period 1 January to 31 December 2004

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/5 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 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, that six States had denied their accession to the SADIS Agreement, 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 2002 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 Eighth Meeting of the SADIS Operations Group (SADISOPSG/8, Bangkok, 7 to 10 July 2003) 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 Eighth meeting (SADISOPSG/8, Bangkok, 7 to 10 July 2003) to SCRAG that the operational efficacy of the SADIS had continued to be satisfactorily meeting all operational requirements since the SADISOPSG/7 Meeting (Cairo, 9 to 13 June 2002). In this context the Group was informed about some problems experienced by users of the Astrium receiver, and noted that the new supplier of VSAT hardware, BURS Limited, has commenced business. The Group noted the discussion by SADISOPSG/8 Meeting regarding the SADIS receiving stations which would become obsolete and that action had been taken to inform States accordingly.

2.3 The Group noted the proposal to reduce costs for the States through bulk purchasing of work station software and that the States were consulted on this matter. The results of this consultation process are expected to be available at SCRAG/5.

2.4 The Group noted Conclusion 8/5 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 paragraphs 5.1, 5.2 and Appendix I).

2.5 With regard to the implementation of the SADIS second-generation prototype (SADIS 2G), the Group noted that the SADISOPSG agreed that it should be implemented in view of its undeniable benefits, i.e. an element of future proofing for the SADIS service; an improvement in satellite performance; a future reduction in required bandwidth and cost; and a wider market for the supply of cost-effective receiving equipment. The SADISOPSG also indicated that all the VSAT stations would have to be changed over the next few years; therefore it was essential that endorsement for this proposal be sought from all the PIRGs concerned. Also, considering that there would be cost implications at the system level, mainly related to the establishment of an operational infrastructure, the SCRAG had to be informed as of this year. The Group was informed that the cost incurred for the SADIS 2G trials are estimated to cost £43,000.

2.6 The Group was informed that the first generation two-way programme should be

discontinued. With regard to the SADIS second generation two-way programme (SADIS 2G+), the Group noted that if the operational concept was endorsed by the SADISOPSG/9 Meeting, the implementation plan of the SADIS 2G+ would be circulated to the SCRAG (November 2004) and to all the PIRGs concerned (second half of 2004) for final endorsement. It is foreseen that prior to the implementation of the 2G+ simple tests of the new equipment could be necessary and the possible financial aspects could be discussed by SCRAG.

2.7 The Group also noted that the SADIS Gateway Function was now fully operational.

AGENDA ITEM 3: REVIEW OF ACTUAL SADIS COSTS AND COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2002

Review of the 2002 Actual SADIS Costs

3.1 The Group reviewed the actual costs provided by the United Kingdom of providing the SADIS services in the year 2002. These actual costs are presented in **Appendix E** and total £441,082. A summary of these costs is presented in **Table 1**.

3.2 The Group noted that 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. It also noted that a cost of £700 was incurred for staff time in association with the two-way trial during 2002. This comprises two days of effort at a cost of £350 per day.

**TABLE 1
SUMMARY OF ACTUAL SADIS COSTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2002**

Cost Item	Actual Costs (UK £)
UK Meteorological Office	405 666
UK administrative costs	19 573
Sub-total UK	425 239
ICAO support services costs	15 843
TOTAL	441 082

Review of the 2002 Actual SADIS Cost Shares

3.3 The Group noted that one State, Namibia, which was assessed for the year 2002 by the SCRAG/2 Meeting and denied its accession to the SADIS Agreement, was not considered in the final calculation of the shares of the actual costs for 2002.

3.4 The Group noted that three States, Malaysia, the Republic of Moldova and Thailand, which were not assessed for the year 2002 by the SCRAG/2 Meeting, have been receiving the SADIS service during the period 1 January to 31 December 2002. It was noted by the SCRAG/3 Meeting, a provisional cost share for 2002 has been invoiced to each of these three States for an amount respectively of £17,986.38, £63.51 and £17,027.21 on the basis of the number of available tonne-kilometres (ATKs) in scheduled services (international and domestic) in 2000 by air carriers based in the territory of these States, in accordance with Article XI, paragraph 1 of the SADIS Agreement. These three States have paid the amount that had been invoiced to them and Malaysia has also paid an

amount of £18,941.81 representing its share of the 2001 estimated costs.

3.5 The Group noted that four States, India, Indonesia, Morocco and the Russian Federation, which were assessed for the year 2002 by the SCRAG/2 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 India was reinstated on 4 October 2002 after it had paid its share of the estimated costs for 2001. Consequently, the shares of the actual costs for 2002 for Indonesia, Morocco and the Russian Federation were calculated based on 7 full months of service in 2002, while the share of India was calculated based on 9 full months of service in 2002.

3.6 The Group determined the actual cost shares for the period 1 January to 31 December 2002 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 2002, 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 4/1 -

The actual cost shares for 2002 as shown in Appendix E for the States participating in the SCAR Arrangement are approved by the SCRAG/4 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 2002 as at 1 October 2003. It noted that a total amount of £445,505 was collected, representing 93.5% of the original assessments for 2002 as approved by the SCRAG/2 Meeting and of the additional assessments for 2002 as approved by the SCRAG/3 Meeting.

3.8 As mentioned in paragraph 3.3 above, one State, Namibia, which was assessed for the year 2002 by the SCRAG/2 Meeting has denied its accession to the SADIS Agreement after this meeting. The corresponding under-recovery for 2002 amounts to £544.86.

3.9 As mentioned in paragraph 3.5 above, four States, India, Indonesia, Morocco and the Russian Federation, which were assessed for the year 2002 by the SCRAG/2 Meeting, have not paid their SADIS cost shares for 2001 and consequently had the SADIS service withdrawn. The service to India was reinstated on 4 October 2002 after it had paid its share of the estimated costs for 2001. The corresponding under-recovery for 2002 amounts to £29,424.08.

3.10 Having noted the information in Table 1 and paragraphs 3.7 to 3.9 above, the Group agreed that the net amount of the over-recovery of SADIS cost shares for the year 2002 amounts to £34,707, which is the difference between the actual costs for 2002 (£441,082) and the collections from States for 2002 as at 1 October 2003 (£445,505) plus the collections from States for 2001 after 15 October 2002 (£30,284 as shown in Appendix G), and it formulated the following Conclusion:

Conclusion 4/2 -

A net over-recovery, amounting to £34,707 of the SADIS cost shares for the year 2002 will be taken into account in the calculation of the SADIS cost shares for the year 2004, in accordance with Article XI, paragraph 4 of the SADIS Agreement.

3.11 The Group noted the comments of the observers from the UK concerning the current arrangements for terminating the SADIS service to States that had not paid their assessments by 31 December. Although the Group recognized that this offers the incentive to pay promptly, any change

to the cut-off date would require an amendment to the SADIS Agreement. In view of the encouraging results in 2003, the Group agreed to review the situation at its next meeting.

AGENDA ITEM 4: REVIEW OF ESTIMATED SADIS COSTS AND COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2004

Review of the 2004 Estimated SADIS Costs

4.1 The Group reviewed the cost estimates provided by the United Kingdom for providing the SADIS services in the year 2004. These cost estimates are detailed in **Appendix F** and total £ 565,184. A summary of these costs is presented in **Table 2**.

**TABLE 2
SUMMARY OF ESTIMATED SADIS COSTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2004**

Cost Item	Estimated Costs (UK £)
UK Meteorological Office	357 761
UK NATS Gateway	167 423
UK administrative costs	20 000
Sub-total UK	545 184
ICAO support services costs	20 000
TOTAL	565 184

4.2 The Group considered the over-recovery in paragraph 3.10 above in the calculation of the amount to be assessed under the SADIS Agreement for 2004. The calculation of the amount to be assessed is presented in **Table 3**.

**TABLE 3
AMOUNT TO BE ASSESSED UNDER THE SADIS AGREEMENT FOR 2004**

		(UK £)	References
(1)	Actual costs for 2002	441 082	TABLE 1
(2)	Collected from States for 2002 (as at 1 October 2003)	445 505	Paragraph 3.6
(3)	Collected from States for 2001 after 15 October 2002 (as at 1 October 2003)	30 284	Appendix G
(4)	Over-recovery for 2002	(34 707)	(1) – (2) – (3)
(5)	Estimated costs for 2004	565 184	TABLE 2
(6)	Amount to be assessed for 2004	530 477	(4) + (5)

Review of the 2004 Estimated SADIS Cost Shares

4.3 The Group determined the cost shares for the period 1 January to 31 December 2004 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 2002, in accordance with Article XI, paragraph 3 of the SADIS Agreement. The Group noted that four States, Indonesia, Morocco, the Russian Federation and Turkmenistan, which were assessed for the year 2002 by the SCRAG/2 Meeting and which have actually 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 2004. The cost share in percentage terms and the share in £ sterling, including the share of over-recovery for 2002, to be borne by each State are shown in **Appendix H**.

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

Conclusion 4/3 -

The estimated cost shares for 2004 as shown in Appendix H for each State participating in the SCAR Arrangement are approved by the SCRAG/4 Meeting for collection by the United Kingdom.

Depreciated Assets

4.5 The Group noted the information presented by the UK regarding the depreciated assets as at 31 December 2003 (see **Appendix C**).

Cost estimates for the years 2005 to 2007

4.6 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 2005 to 2007 as well as the estimates for the United Kingdom administrative costs and the costs of ICAO support services.

TABLE 4
SUMMARY OF ESTIMATED SADIS COSTS
FOR THE YEARS 2005, 2006 AND 2007*

Cost Item	Estimated Costs 2005 (UK £)	Estimated Costs 2006 (UK £)	Estimated Costs 2007 (UK £)
UK Meteorological Office	357 879	347 879	347 879
UK NATS Gateway	162 852	158 282	97 025
UK administrative costs	20 000	20 000	20 000
Sub-total UK	540 731	526 161	464 904
ICAO support services costs	20 000	20 000	20 000
TOTAL	560 731	546 161	484 904

* Estimates based on 2003 prices.

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.

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

Conclusion 4/4 -

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/5 MEETING

6.1 The Group agreed that, subject to confirmation, its Fifth Meeting should be held in the ICAO Middle East Regional Office, Cairo (Egypt) on 16 and 17 November 2004.

AGENDA ITEM 7: OTHER BUSINESS

7.1 Audit of Actual Costs

7.1.1 At its Third Meeting, the Group had 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 that routinely provides internal audit services to the Met Office, before being presented to the SCRAG. However, the implementation of this procedure was subject to approval of the costs involved and terms of reference of such audits by the SCRAG/4 meeting.

7.1.2 The Group reviewed a proposal presented by the Observer from the United Kingdom, including draft terms of reference, to meet the requirements of such audits. The UK MET Office was proposing to provide as much information as possible about the SADIS costs to facilitate such an assessment. They were proposing in particular to supply copies of contracts or invoices where any third party arrangements apply (e.g. Satellite lease, maintenance contracts) and secondly, where staff costs are involved, to provide details of the tasks carried out by the respective posts, justification for the proportion of time used, and relate the actual costs to the agreed capitation rates used for each grade of staff in the UK Met Office. PKF would be able to substantiate that the capitation rates that have been used are reasonable.

7.1.3 The UK Met Office was not proposing to make any charge for carrying out the work proposed. However, if this were to be required on an annual basis with appropriate adjustments to their accounting system then an additional cost might be incurred. The Met Office was suggesting that SCRAG/5 review the relevant documentation and satisfy themselves of the efficacy of the data provided under the following terms of reference:

- Met Office to provide detailed cost information relating to the operational and development costs of running SADIS, utilising invoices, contracts and staff capitation rates where applicable for the calendar year 2003. Note this spans two financial years used by the Met Office.
- To request the Met Office auditors, PKF, to verify the staff capitation rates used.
- Present the results of the analysis to SCRAG/5.

7.1.4 During the discussion on this proposal, it was pointed out that the terms of reference should explicitly mention the objective of such audits which are to ensure that the costs charged by the UK

Met Office under the SADIS Agreement are properly allocated. A reference should also be added to the compliance with the Annexes to the SADIS Agreement. In addition, confirmation from the UK NATS of the cost of providing the GATEWAY function should be obtained.

7.1.5 As a result of its deliberations on this issue, the Group agreed that the 2003 actual costs incurred by the UK Met Office for the provision of the SADIS service be audited by PKF before being presented to the SCRAG. The UK MET office offered to make no additional charge for this. The Group adopted the following Terms of Reference for the audits:

Conclusion 4/5 -

The actual costs incurred by the UK Met Office for the provision of the SADIS service in 2003 will be submitted to an audit by the Met Office auditors, PKF, before being presented to the SCRAG. The objective of this audit is to ascertain that the costs charged by the UK Met Office under the SADIS Agreement are allocated in conformity with the SADIS Agreement and its Annexes. In view of this objective, the UK Met Office is requested to:

- Provide detailed cost information relating to the operational and development costs of providing the SADIS service, utilising invoices, contracts and staff capitation rates where applicable for the calendar year 2003;

- Request the UK Met Office auditors, PKF, to verify the staff capitation rates used; and

- Present the results of the analysis to the SCRAG at its Fifth Meeting.

7.2 Rules of Assessments

7.2.1 The Group received a proposal presented by the Member from China proposing that the SADIS Agreement be amended to change the method of cost allocation. The member from China noted that the provision of the SADIS service to civil aviation, especially users in developing countries, greatly enhances the safety, regularity and efficiency of flight operations. However, China informed the Group that meteorological authorities in some developing countries in Asia have expressed concerns that they do not have the financial resources to meet the service costs of SADIS in addition to the expenditure they incur on equipment investment and maintenance while at the same time they are expected to contribute their observation data and forecasts.

7.2.2 The proposal raised for consideration was to change the basis of calculating the assessment of the Parties from the percentage of the total number of ATKs in scheduled services (international and domestic) performed by air carriers based in the territory of the State of a Party, to the scale of assessments of the ICAO Contracting States.

7.2.3 During the discussion of this proposal, the following points were pointed out:

a) From a procedural point of view, the SCRAG has the authority to amend the Annexes to the SADIS Agreement, but Article XVII of the Agreement establishes that any amendment to the main body of the Agreement must have the support of two-thirds of all the Parties that have paid their share of the costs of providing the SADIS service.

b) When adopting the revised SADIS Agreement on 24 November 2000, the Council of ICAO established the SADIS cost sharing mechanism on the basis of recommendations of the Air Transport Committee and a Study Group of experts which had been especially convened for this purpose. The cost sharing formula proposed in the paper of the Member from China was one of the four options which had been considered but unanimously rejected, owing to the limited extent capacity to pay reflects the extent of usage, and equity

amongst States.

c) Diffusion of the SADIS service, the cost of which is shared amongst the Parties to the SADIS Agreement, is directly related to the provision of air navigation services by the States.

d) Article XIV of the Agreement includes a specific reference to the possibility for each Party to recover its assessments from the users (aircraft operators) in conformity with the principles and practices set out in the Convention on International Civil Aviation (ICAO Doc 7300) and ICAO's Policies on Charges for Airports and Air Navigation Services (ICAO Doc 9082).

e) In most States, and particularly those with developing economies, the problem with securing the necessary funds for their SADIS shares results from practical difficulties in implementing cost recovery for the meteorological services through air navigation charges. It was noted that this issue has been addressed by the 14th meeting of the APANPIRG, held in Bangkok from 4 to 8 August 2003, which through its Conclusion 14/29 encouraged the States to include the costs for the utilization of World Area Forecast System (WAFS) products, including the mandatory SADIS shares, the cost for maintenance and replacement of the SADIS VSAT equipment and workstations into the cost recovery for the meteorological services provided in their territory via the air navigation service charges. This approach could be used in the forthcoming transition to SADIS 2G, when all States would have to replace their first generation SADIS receivers.

f) Noting the above considerations and in the absence of any change in circumstances since November 2000, it is unlikely that the proposal to change the method of assessment would be supported. It was noted in this regard that no concerns have been raised by any participants in the deliberations of the two worldwide meetings of ICAO and WMO which took place in September 2002: ICAO MET Divisional Meeting 2002 and Twelfth Session of the Commission for Aeronautical Meteorology of WMO (9 to 27 September 2002).

7.2.4 The Group noted the matters raised by the member from China. Having thoroughly examined the issues involved, the Group considered it could not support the proposed change of the SADIS assessment method and that the appropriate way to address the financial difficulties faced by the national MET services in meeting their annual costs for SADIS should be through implementing cost recovery mechanisms.

7.3 The Group expressed its appreciation and thanks to the staff of the ICAO Asia and Pacific Regional Office for their hospitality and excellent support received during the meeting.

APPENDIX A

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APPENDIX B**LIST OF SCRAG/4 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/8 Meeting	Chairman, SADISOPSG
4	3	2002 UK actual SADIS costs	United Kingdom
5	3	2002 ICAO actual SADIS administrative costs	Secretariat
6	3&4	Status of payments for the year 2002	United Kingdom
7	3	Summary of actual costs and cost shares for the year 2002	Secretariat
8	4	Depreciated assets: SADIS costs	United Kingdom
9	4	Estimated SADIS Costs: 2 to 5 years	United Kingdom
10 Revised	4	Summary of estimated costs and assessments for the year 2004	Secretariat
11	5	Amendment to Annex II, Inventory, to the SADIS Agreement	Secretariat
12	7	Audit of MET Office SADIS costs	United Kingdom
13	7	Sharing costs of SADIS	Member from China

APPENDIX C

**INVENTORY OF ASSETS AS AT 31 DECEMBER 2003
EMPLOYED BY THE UNITED KINGDOM TO PROVIDE SADIS SERVICES**

(1) Inventory of Assets: 2003	(2) Original Value	(3) Depreciated charges in 2003	(4) Total accumulated depreciation	(5) Net depreciated values at end of 2003
<u>UNITED KINGDOM</u> HUB Investment	£191 928	£0	£191 928	£0
New Two-Way Hub enhancement	£250 000	£0	£250 000	£0
New Development & project Management	£75 000	£0	£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	£0	£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
	£206 400	£29 484	£29 484	£176 916
GATEWAY FUNCTION				
	£920 079	£29 484	£743 163	£176 916
TOTAL (original) investment)	£375 000	£0	£375 000	£0
New Investment				

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 D (cont'd)
STATES WHICH DENIED THEIR ACCESSION
TO THE SADIS AGREEMENT

States	LDC's Exempted
Australia	
Brunei Darussalam	
France	
Namibia	
Singapore	
Slovakia	

APPENDIX E
ACTUAL COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2002*

STATES	2002 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2002 Actual Costs (£ Sterling)
Algeria	484,146	0.233%	1,027.10
Armenia	131,989	0.063%	280.01
Austria	2,679,239	1.289%	5,683.94
Azerbaijan	302,541	0.146%	641.83
Bahrain	803,787	0.387%	1,705.21
Belgium	1,915,578	0.921%	4,063.85
Botswana	16,138	0.008%	34.24
Bulgaria	10,662	0.005%	22.62
Cameroon	109,125	0.052%	231.51
China **	41,687,227	20.050%	88,438.38
Congo	12,411	0.006%	26.33
Côte d'Ivoire	0	0.000%	0.00
Croatia	157,742	0.076%	334.65
Cyprus	531,847	0.256%	1,128.30
Czech Republic	598,636	0.288%	1,269.99
Democratic People's Republic of Korea	8,181	0.004%	17.36
Denmark	1,447,536	0.696%	3,070.91
Egypt	2,144,329	1.031%	4,549.14
Estonia	56,458	0.027%	119.77
Finland	1,951,541	0.939%	4,140.14
Gabon	342,539	0.165%	726.69
Georgia	40,596	0.020%	86.12
Germany	26,122,648	12.564%	55,418.52
Ghana	250,117	0.120%	530.62
Greece	1,644,155	0.791%	3,488.03
Hungary	651,017	0.313%	1,381.12
India ***	3,755,309	1.806%	7,966.79
Indonesia ***	2,380,334	1.145%	5,049.82
Italy	7,063,469	3.397%	14,984.97
Jordan	960,504	0.462%	2,037.68
Kenya	836,728	0.402%	1,775.10
Kuwait	1,455,911	0.700%	3,088.68
Lebanon	517,499	0.249%	1,097.86
Malaysia	7,698,105	3.703%	16,331.33
Malta	512,059	0.246%	1,086.32
Mauritius	1,109,554	0.534%	2,353.89

APPENDIX E (cont'd)
ACTUAL COST SHARES FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2002*

STATES	2002 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2002 Actual Costs (£ Sterling)
Mongolia	118,018	0.057%	250.37
Morocco ***	602,063	0.290%	1,277.26
Netherlands	14,516,071	6.982%	30,795.47
Nigeria	77,425	0.037%	164.26
Oman	849,150	0.408%	1,801.45
Portugal	2,275,515	1.094%	4,827.45
Republic of Moldova	32,724	0.016%	69.42
Romania	410,835	0.198%	871.58
Russian Federation ***	5,438,210	2.616%	11,537.02
Saudi Arabia	5,286,525	2.543%	11,215.23
Senegal	92,584	0.045%	196.41
Serbia and Montenegro	202,865	0.098%	430.37
Seychelles	336,611	0.162%	714.11
South Africa	5,269,273	2.534%	11,178.63
Sri Lanka	1,121,327	0.539%	2,378.87
Swaziland	0	0.000%	0.00
Sweden	2,144,249	1.031%	4,548.97
Switzerland	6,420,347	3.088%	13,620.60
Thailand	8,954,457	4.307%	18,996.65
Tunisia	437,011	0.210%	927.11
Turkey	3,254,032	1.565%	6,903.34
Turkmenistan	244,584	0.118%	518.88
Ukraine	390,207	0.188%	827.81
United Arab Emirates	7,500,279	3.607%	15,911.65
United Kingdom	30,399,002	14.621%	64,490.68
Viet Nam	1,149,951	0.553%	2,439.59
TOTAL	207,912,972	100.000%	441,082.00

* 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: 14 610 258 000 ATKs corresponding to a share of 2002 actual costs of £ 30 995.28
- Macau: 331 461 000 ATKs corresponding to a share of 2002 actual costs of £ 703.19

*** The shares of Indonesia, Morocco and the Russian Federation were calculated for only 7 months in 2002 and the share of India was calculated for only 9 months in 2002, based on the number of full months of operation of the service to these States in 2002. In order to properly calculate their share of the 2002 actual costs, only 7/12th and 9/12th respectively of their ATKs for 2002 were included in the second column.

APPENDIX F

**SADIS COST ESTIMATES FOR 2004 TO 2007 FOR SADIS SERVICES PROVIDED BY THE
UNITED KINGDOM METEOROLOGICAL OFFICE**

Table 1	Year 2004 Projected Costs at 2003 prices	Year 2005 Projected Costs at 2003 prices	Year 2006 Projected Costs At 2003 prices	Year 2007 Projected Costs at 2003 prices
() resource in man/yr				
<u>ANNUAL STAFF COSTS</u>				
Help Desk (see note)	40 926 (0.25)	49 111 (0.30)	49 111 (0.30)	49 111 (0.30)
Engineer	3 273 (0.02)	3 273 (0.02)	3 273 (0.02)	3 273 (0.02)
Network Computer Engineer	32 740 (0.20)	32 740 (0.20)	32 740 (0.20)	32 740 (0.20)
Executive Officer	34 652 (0.55)	34 652 (0.55)	34 652 (0.55)	34 652 (0.55)
Support Specialist	44 103 (0.70)	44 103 (0.70)	44 103 (0.70)	44 103 (0.70)
2G Trial	20 000			
<i>STAFF COST SUB- TOTAL</i>	175 694	163 879	163 879	163 879
<u>SERVICES</u>				
Satellite Segment	96 067	90 000	80 000	80 000
Annual Maintenance	30 000	35 000	35 000	35 000
Message-Switch	40 000	53 000	53 000	53 000
SUB TOTAL	166 067	178 000	168 000	168 000
<u>COST OF DEPRECIATED CAPITAL</u>				
2G	16 000	16 000	16 000	16 000
SUB-TOTAL	16 000	16 000	16 000	16 000
<u>TOTAL FOR UKMO SADIS</u>	£357 761	£357 879	£347 879	£347 879
TABLE 2	Year 2004	Year 2005	Year 2006	Year 2007

	Projected Costs at 2003 prices			
<u>NATS GATEWAY</u>				
Operational Staff Support: Air Traffic Services Assistant	47 280	47 280	47 280	47 280
Engineering Staff Support: Systems Engineer	15 450	15 450	15 450	15 450
SADIS Administration Support	12 875	12 875	12 875	12 875
SUB TOTAL	75 605	75 605	75 605	75 605
Communication Link to UKMO	7 140	7 140	7 140	7 140
System maintenance	14 280	14 280	14 280	14 280
SUB TOTAL	21 420	21 420	21 420	21 420
<u>COST OF DEPRECIATED CAPITAL</u>				
OPMET Gateway Function	58 972	58 972	58 972	0
Cost of capital	11 426	6 855	2 285	0
<u>TOTAL FOR GATEWAY</u>	167 423	162 852	152 282	97 025
CAA Admin	20 000	20 000	20 000	20 000
ICAO Admin	20 000	20 000	20 000	20 000
TOTAL Costs	565 184	560 731	546 161	484 904

Note. 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.

APPENDIX G
STATUS OF PAYMENT OF THE BALANCE DUE FOR 2001
AS AT 1 OCTOBER 2003

STATES	Balance for 2001 as at 15 October 2002 (£ Sterling)	Amount Collected after 15 October 2002 up to 1 October 2003 (£ Sterling)	Balance for 2001 as at 1 October 2003 (£ Sterling)
Algeria	254.57	254.57	
Armenia	-9.81		-9.81
Austria	-176.85		-176.85
Azerbaijan	81.65	81.65	
Bahrain	244.77	244.77	
Belgium	1,528.76	1,528.76	
Botswana	6.36	6.36	
Bulgaria	-695.90		-695.90
Cameroon	-54.06		-54.06
China *	9,521.09	1,033.39	8,487.70
Congo	-110.97		-110.97
Côte d'Ivoire	-215.44		-215.44
Croatia	41.06	41.06	
Cyprus	-12.41		-12.41
Czech Republic	20.31	20.31	0.00
Democratic People's Republic of Korea	-123.07		-123.07
Denmark	145.58	145.58	
Egypt	-808.00		-808.00
Estonia	-56.27		-56.27
Finland	-406.92		-406.92
Gabon	-245.75		-245.75
Georgia	-43.73		-43.73
Germany	1,065.84	1,065.84	
Ghana	96.90	96.90	
Greece	-304.64		-304.64
Hungary	-28.99		-28.99
India	-296.89		-296.89
Indonesia	8,078.97		8,078.97
Italy	-2,367.62		-2,367.62
Jordan	-345.57		-345.57
Kenya	424.16	424.16	
Kuwait	-306.82		-306.82
Lebanon	-52.64		-52.64
Malaysia	19,195.64	19,195.64	
Malta	-127.86		-127.86
Mauritius	262.68	262.68	

APPENDIX G (cont'd)
STATUS OF PAYMENT OF THE BALANCE DUE FOR 2001
AS AT 1 OCTOBER 2003

STATES	Balance for 2001 as at 15 October 2002 (£ Sterling)	Amount Collected after 15 October 2002 up to 1 October 2003 (£ Sterling)	Balance for 2001 as at 1 October 2003 (£ Sterling)
Mongolia	45.01		45.01
Morocco	3,324.11		3,324.11
Netherlands	-3,499.31		-3,499.31
Nigeria	-331.16		-331.16
Oman	183.68	183.68	
Pakistan			
Portugal	-67.36		-67.36
Republic of Moldova			
Romania	-81.40		-81.40
Russian Federation	21,703.06		21,703.06
Saudi Arabia	-2,014.82		-2,014.82
Senegal	-123.67		-123.67
Serbia and Montenegro	256.71	256.71	0.00
Seychelles	133.64		133.64
South Africa	-1,574.13		-1,574.13
Sri Lanka	605.43	605.43	
Swaziland	13.66		13.66
Sweden	-221.05		-221.05
Switzerland	-1,727.19		-1,727.19
Thailand	715.66	715.66	
Tunisia	-164.72		-164.72
Turkey	354.99	354.99	
Turkmenistan	261.54		261.54
Ukraine	-110.62		-110.62
United Arab Emirates	3,254.04	3,254.04	
United Kingdom	-7,654.45		-7,654.45
Viet Nam	511.45	511.45	
TOTAL	47,971.23	30,283.63	17,687.60

* The balance due for China's as at 1 October 2003 is as follows:

- China - Beijing: £ 8 487.70
- Hong Kong: £ 0
- Macau: £ 0

APPENDIX H
ESTIMATED COST SHARES AND ASSESSMENTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2004 *

STATES	2002 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2004 Estimated Costs (£ Sterling)	Share of Over-recovery for 2002 (£ Sterling)	Amount to be Assessed for 2004 (£ Sterling)
Algeria	484,146	0.239%	1,349.79	-82.89	1,266.90
Armenia	131,989	0.065%	367.98	-22.60	345.38
Austria	2,679,239	1.322%	7,469.66	-458.70	7,010.96
Azerbaijan	302,541	0.149%	843.48	-51.80	791.68
Bahrain	803,787	0.396%	2,240.94	-137.61	2,103.33
Belgium	1,915,578	0.945%	5,340.59	-327.96	5,012.63
Botswana	16,138	0.008%	44.99	-2.76	42.23
Bulgaria	10,662	0.005%	29.73	-1.83	27.90
Cameroon	109,125	0.054%	304.24	-18.68	285.56
China **	41,687,227	20.564%	116,223.01	-7,137.06	109,085.95
Congo	12,411	0.006%	34.60	-2.12	32.48
Côte d'Ivoire	0	0.000%	0.00	0.00	0.00
Croatia	157,742	0.078%	439.78	-27.01	412.77
Cyprus	531,847	0.262%	1,482.78	-91.05	1,391.73
Czech Republic	598,636	0.295%	1,668.98	-102.49	1,566.49
Democratic People's Republic of Korea	8,181	0.004%	22.81	-1.40	21.41
Denmark	1,447,536	0.714%	4,035.70	-247.83	3,787.87
Egypt	2,144,329	1.058%	5,978.34	-367.12	5,611.22
Estonia	56,458	0.028%	157.40	-9.67	147.73
Finland	1,951,541	0.963%	5,440.85	-334.11	5,106.74
Gabon	342,539	0.169%	954.99	-58.64	896.35
Georgia	40,596	0.020%	113.18	-6.95	106.23
Germany	26,122,648	12.886%	72,829.33	-4,472.33	68,357.00
Ghana	250,117	0.123%	697.32	-42.82	654.50
Greece	1,644,155	0.811%	4,583.87	-281.49	4,302.38
Hungary	651,017	0.321%	1,815.02	-111.46	1,703.56
India	5,007,079	2.470%	13,959.62	-857.24	13,102.38
Italy	7,063,469	3.484%	19,692.79	-1,209.30	18,483.49
Jordan	960,504	0.474%	2,677.86	-164.44	2,513.42
Kenya	836,728	0.413%	2,332.78	-143.25	2,189.53
Kuwait	1,455,911	0.718%	4,059.05	-249.26	3,809.79
Lebanon	517,499	0.255%	1,442.78	-88.60	1,354.18
Malaysia	7,698,105	3.797%	21,462.14	-1,317.95	20,144.19
Malta	512,059	0.253%	1,427.61	-87.67	1,339.94
Mauritius	1,109,554	0.547%	3,093.41	-189.96	2,903.45

APPENDIX H (cont'd)
ESTIMATED COST SHARES AND ASSESSMENTS
FOR THE PERIOD 1 JANUARY TO 31 DECEMBER 2004 *

STATES	2002 Available Tonne-Kilometres in Scheduled Services (000)	Percentage Cost Share	Share of 2004 Estimated Costs (£ Sterling)	Share of Over-recovery for 2002 (£ Sterling)	Amount to be Assessed for 2004 (£ Sterling)
Mongolia	118,018	0.058%	329.03	-20.21	308.82
Netherlands	14,516,071	7.161%	40,470.47	-2,485.22	37,985.25
Nigeria	77,425	0.038%	215.86	-13.26	202.60
Oman	849,150	0.419%	2,367.41	-145.38	2,222.03
Pakistan	2,222,379	1.096%	6,195.94	-380.48	5,815.46
Portugal	2,275,515	1.122%	6,344.08	-389.58	5,954.50
Republic of Moldova	32,724	0.016%	91.23	-5.60	85.63
Romania	410,835	0.203%	1,145.40	-70.34	1,075.06
Saudi Arabia	5,286,525	2.608%	14,738.71	-905.08	13,833.63
Senegal	92,584	0.046%	258.12	-15.85	242.27
Serbia and Montenegro	202,865	0.100%	565.58	-34.73	530.85
Seychelles	336,611	0.166%	938.46	-57.63	880.83
South Africa	5,269,273	2.599%	14,690.61	-902.13	13,788.48
Sri Lanka	1,121,327	0.553%	3,126.23	-191.98	2,934.25
Swaziland	0	0.000%	0.00	0.00	0.00
Sweden	2,144,249	1.058%	5,978.12	-367.11	5,611.01
Switzerland	6,420,347	3.167%	17,899.78	-1,099.20	16,800.58
Thailand	8,954,457	4.417%	24,964.82	-1,533.05	23,431.77
Tunisia	437,011	0.216%	1,218.38	-74.82	1,143.56
Turkey	3,254,032	1.605%	9,072.17	-557.11	8,515.06
Ukraine	390,207	0.192%	1,087.89	-66.81	1,021.08
United Arab Emirates	7,500,279	3.700%	20,910.60	-1,284.08	19,626.52
United Kingdom	30,399,002	14.995%	84,751.67	-5,204.42	79,547.25
Viet Nam	1,149,951	0.567%	3,206.04	-196.88	3,009.16
TOTAL	202,721,930	100.000%	565,184.00	-34,707.00	530,477.00

* 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: 14 610 258 000 ATKs corresponding to a share of 2004 assessments of £ 38 231.70
- Macau: 331 461 000 ATKs corresponding to a share of 2004 assessments of £ 867.36

APPENDIX I**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 (FROST) 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 s, Oxford. The components of the original inventory changed when the Two-Way enhancement project was fully implemented. ~~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 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 s and Met Office
2 Fibre Optic 64 Kbps circuits

- c) At the uplink site (s)
- 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):
 - 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 FROST): Total investment ~~£2.3M~~ £1.5M of which ~~1.25~~ 1.76 per cent is attributable to SADIS usage;
- b) Message switch (CoreMet System);
- c) 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**

Item	Description	Quantity
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	Mega 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
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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 coding with concatenated Reed Soloman 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 Whitehill 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.

24-hour support

Grade and skill

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

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