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**APPENDIX D****SADIS INVENTORY****1.2 SADIS Inventory**

1.2.1 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 which 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.

**1.2.2 EQUIPMENT****A. Hub Infrastructure & Communications Circuits**

The hub infrastructure connection to The Met Office message-switch (TROPICS) consist of a number of units developed in conjunction with Matra Marconi Space and other suppliers. These are installed either at Bracknell or at the up-link site at Whitehill, Oxford. The components of the inventory have changed as the Two-Way enhancement project is fully implemented.

**i) Solely procured for SADIS**

- a) 2 Two-Way VSATs for enhanced Two-Way capability (*note there are 3 original two-way VSATS now sited in Switzerland, South Africa and the United Kingdom. These will be re-configured by SADISOPSG/5 to enable them to communicate with the enhanced hub infrastructure*)
- b) Gateway function equipment

**ii) Principally procured for SADIS****At the UKMO**

Product display console, including software.

**Communications between Whitehill and UKMO**

2 Fibre Optic 64 Kbps circuits.

**At the Up-link Site (Whitehill)**

- a) Units forming part of a totally integrated rack structure, with back-up, referred to as Chain A and Chain B:

1 CX 1000 frame relay switch  
2 modulators  
1 Modem Switch

- b) Units and Services leased from Matra Marconi Space (under contract to CABLE & WIRELESS Communications Ltd):

1 (70 to 140 Mhz) Convertors  
Use of 1 (140 to C band) Convertors  
Use of Satellite Hub - Lease represents only on a very small part of this large aperture

iii) **Not procured principally for SADIS**

- a) Message-switch (TROPICS): Total Investment £2.3M of which 1.25 percent is attributable to SADIS usage.
- b) OPMET gateway function\*.

**B. ISCS Data Back-Up System**

ISCS VSAT system including, receiver, cables, break unit and X 25 frame relay switch.

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

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\*NATS infrastructure site: Operational core MET system, including installation, oversight, tests and training:  
1 700 000 of which 20 per cent is attributable to SADIS.



## SADIS TWO WAY DEVELOPMENT INVENTORY OF DELIVERABLE EQUIPMENT

Item	Description	Quantity
<b>1.</b>	<b>Bracknell Equipment</b>	
1.1	Network Management System (NMS Computer)	1 off
1.2	<a href="#">MemoTech PAD (for NMS)</a>	1 off *
1.3	Telecoms interface units Megabox	2 off
1.4	<a href="#">CX1000 Frame Relay Switch (for NMS)</a>	1 off *
1.5	<a href="#">Product display console including software (COROBOR)</a>	1 off *
<b>2.</b>	<b>Bracknell Equipment (Spares)</b>	
2.1	Telecoms interface units Megabox	2 off
2.2	NMS Spare CPU	
2.3	<a href="#">MemoTech PAD (for NMS)</a>	1 off *
<b>3.</b>	<b>Communication link Whitehill / Bracknell</b>	
3.1	<a href="#">Fibre optic 64 Kbps circuits</a>	2 off *
<b>4.</b>	<b>Whitehill earth station (uplink equipment)</b>	
4.1	Telecoms controller Megapac V rack assembly	2 off
4.2	Station interface unit (SIU)	2 off
4.3	<a href="#">8360 Modulator</a>	2 off *
4.4	8471 Receive Demodulators	12 off
4.5	<a href="#">8550 Modem Switch</a>	1 off *
4.6	140 - L band upconverter	2 off
4.7	X Term NMS simulator	1 off
4.8	<a href="#">Equipment Rack Assembly (Chain 1)</a>	1 off *
4.9	Equipment Rack Assembly (Chain 2)	1 off
<b>5.</b>	<b>Whitehill earth station (spares)</b>	
5.1	8471 Receive Demodulators	1 off
5.2	Station interface unit (SIU)	1 off
5.3	Megapac V rack assembly	2 off
5.4	Megabox Frad units	2 off
5.5	140 - L band upconverter	1 off
<b>6.</b>	<b>Whitehill services (leased from Matra Marconi Space under contract to Cable &amp; Wireless)</b>	

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6.1	70 Mhz to 140 Mhz converters	2 off *
6.2	140 Mhz to C band converter	2 off *
6.3	Satellite Hub leased bandwidth	1 off slot *

#### **7. TWO-WAY VSAT Systems (2 in number)**

7.1	Channel master 2.4 metre type approved antenna	2 off
7.2	5 watt C Band Outdoor unit assembly	2 off
7.3	Low noise block downconverter	2 off
7.4	RF Integration kit	2 off
7.5	Indoor unit rack assembly	2 off
7.6	Station interface unit (SIU	2 off
7.7	8471 Receive Demodulators	2 off
7.8	Telecoms interface units Megabox	2 off
7.9	8371 Modulator	2 off
7.10	Tool kit	2 off
7.11	Cross site cables set	2 off

#### **8. Test Rig at Poynton**

8.1	Enhanced Simulator	1 off
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**(\*) Denotes equipment reused from original broadcast system.**

### **1.2.3 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 UKMO and Whitehill site equipment which is not leased.
- c) Gateway function
  - i) communication link UKMO and NATS infrastructure site.
  - ii) system maintenance.

### 1.2.4 ANNUAL STAFF REQUIREMENT

#### A. United Kingdom Meteorological Office

##### Help Desk

Note.— The Help Desk acts as a first point of contact for all enquiries, including those concerning the OPMET gateway function. Complex enquiries 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.

##### 24-hour support

##### Grade & Skill

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| 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.

Additional support

##### Systems Integration Team

Grade & Skill

50% of engineer

5% of network computer engineer

30% data traffic manager (computer scientist)

Administrator 45% executive officer

Support to ICAO Regions & SADIS User Guide

25% of support specialist and meteorologist

##### 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)

#### B. NATS Infrastructure Site (OPMET gateway function) See also note under 3 A 'Help desk' above

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<b>24-hour support</b>	<b>Grade &amp; Skill</b>
1. Operational staff support	40% of air traffic services assistant
2. Engineering staff support	20% of systems engineer
3. SADIS administration support	100% of air traffic services assistant

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