

APPENDIX C**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 Astrium 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 Met Office**

Product display console, including software.

Communications between Whitehill and Met Office

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 Astrium (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.

SADIS TWO WAY DEVELOPMENT INVENTORY OF DELIVERABLE EQUIPMENT

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

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

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 Met Office and Whitehill site equipment which is not leased.
- c) Gateway function
 - i) communication link Met Office and NATS infrastructure site.
 - ii) system maintenance.

1.2.4 ANNUAL STAFF REQUIREMENT

A. Met Office of the UK

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% ~~2%~~ of engineer

5% ~~20%~~ of network computer engineer

30% ~~data traffic manager (computer scientist)~~

Administrator 45% ~~55%~~ executive officer

Support to ICAO Regions & SADIS User Guide 25% of support specialist and meteorologist

70% of support specialist – meteorologist (providing support to ICAO Regions, SADIS users & 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)

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

24-hour support

Grade & Skill

- | | |
|---------------------------------|--|
| 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 |
