

SADIS COST RECOVERY ADMINISTRATIVE GROUP (SCRAG)

SIXTEENTH MEETING

(London, 6 November 2015)

Agenda Item 5: Amendment to Annexes to the Agreement on the Sharing of Costs of the Satellite Distribution System relating to Air Navigation

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

(Presented by the Secretariat)

REFERENCES

SADIS Agreement
SCRAG/16-WP/3
METP-WG/MOG/1-WP/8
METP-WG/MOG/1-SD, Recommendation 1/5

1. Introduction

1.1 This paper presents a draft amendment to Annex II, SADIS Inventory, to the SADIS Agreement as a result of recommendations of the METP-WG/MOG, at its First Meeting (Gatwick, London, United Kingdom, 8 to 11 September 2015).

2. Discussion

2.1 The METP-WG/MOG reviewed the SADIS inventory and agreed upon some amendments to ensure that it would continue to meet the approved operational requirements. The amendments were made based on proposals by the SADIS Provider State.

2.2 The Attachment presents the revised text of Annex II, SADIS inventory, to the SADIS Agreement. Additions and deletions to the actual text of Annex II appear in outline and strikeout formats.

2.3 The proposed amendments have received the consent of the United Kingdom as the SADIS provider, in accordance with Article XVII, paragraph 5 of the SADIS Agreement.

3. **Action by the Group**

3.1 The Group is invited to review the proposed amendments to Annex II, SADIS inventory, to the SADIS Agreement.

SADIS INVENTORY

Editorial note. — Changes proposed by METP-WG/MOG are highlighted in tracked-change mode as deletions or additions

(2015-2016)

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 implementation of Secure SADIS FTP) and communications circuits, ISDN 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.

1. EQUIPMENT

A. Key components of Hub infrastructure and communications circuits

1. The SADIS 2G hub infrastructure connection to the Met Office message switch (MetSwitch) consists of a number of units developed in conjunction with AEP Networks and other suppliers. These are installed either at Exeter, Devon or at the uplink site at Whitehill, Oxfordshire, UK.
2. The Secure SADIS FTP hub infrastructure connection to the Met Office message switch (MetSwitch) consists of a number of units installed at Exeter.

i) Solely procured for SADIS (major components)

SADIS gateway function software (developed specifically for the gateway as part of the NATS CoreMet system; see items under “Not procured principally for SADIS”).

Dell Poweredge R900 servers to provide the Secure SADIS FTP service (see Section 1 C).

ii) Principally procured for SADIS

- a) At the Met Office;
See Section 1 C for itemized components
- b) Communications between Met Office Exeter and Whitehill uplink facility;
2 Fibre Optic 64 Kbit/sec circuits in support of SADIS 2G service
- c) At the uplink site (Whitehill);
 - 1) Units and services leased from **Vodafone Cable and Wireless Communications Ltd.** to support SADIS 2G **uplink** services:
 - 1 (70 to 140 MHz) converter;
 - Use of 1 (140 to C band) converter;

- Use of satellite hub (lease represents only a very small part of this large aperture) for SADIS 2G services; and
 - 2) Units forming part of a totally integrated rack structure to provide SADIS 2G service, with back-up (see the list under Section 1 C).
 - d) Dual contingent communication links (utilising WMO TCP/IP sockets protocol) between SADIS Gateway and Met Office in support of SADIS 2G service.
- iii) **Not procured principally for SADIS**

- a) Met Office Message switch (MetSwitch): Total investment £738K¹ of which 1.00 per cent is attributable to the Secure SADIS FTP service usage: switching data to operational FTP service;
- b) Met Office Message switch (MetSwitch): Total investment £738K² of which 0.74 per cent is attributable to SADIS 2G usage: switching data to operational (2G) broadcast service and to 2G monitoring system (MetSwitch Dev);
- c) Allocated bandwidth 16 Mbit/sec bursting to 24 Mbit/sec between server and Internet Service Provider (ISP) in support of the Secure SADIS FTP service. Individual client connections have a maximum throughput of ~~512~~ 1024 Kbit/sec.
- d) NATS Message switch (CoreMet System);

Note. — Some elements of the CoreMet System are exclusively for the support of the SADIS gateway function.

- e) Secure SADIS FTP equipment running costs;

Note. — This comprises support and maintenance of the servers underpinning the Secure SADIS FTP services, a share of the cost for the underlying storage capacity on which the Secure SADIS FTP services are reliant, and operational monitoring of the Secure SADIS FTP services by Tivoli ensuring problems can be identified and resolved in a timely manner.

- f) Met Office Service Desk equipment; and

Note. — Equates to 3.5 per cent of the total share of Met Office IT Operations equipment.

- g) Met Office Serial Communications.

Note. — Equates to 20 per cent of total share of Met Office Serial Communications. Includes cost of switching serial data from MetSwitch Message Switch to SADIS 2G, comprising staff and equipment costs of supporting serial WAN, TTL Routers, Serial Modems and TTL matrix switches.

B. SADIS data back-up system

The SADIS Gateway (UK NATS) has procured a dedicated SADIS data backup arrangement with the WIFS Provider State. The backup infrastructure includes an ISDN connection between the National

¹ budgeted cost for providing MetSwitch service during the fiscal year ~~2014/2015~~2015/2016.

² budgeted cost for providing MetSwitch service during the fiscal year ~~2014/2015~~2015/2016.

Weather Service Telecommunications Gateway (NWSTG) and the SADIS Gateway, and an ISDN connection between the SADIS Gateway and Whitehill uplink facility, to provide SADIS data backup.

C. Hub equipment and services located at Exeter and Whitehill

<i>Item</i>	<i>Description</i>	<i>Quantity</i>
1.	Whitehill services (leased from Cable & Wireless)	
1.1	70 MHz to 140 MHz converter	1
1.2	140 MHz to C band converter	1
1.3	Satellite Hub leased bandwidth	1 slot
2.	ISDN back-up service to Washington (NWSTG)	
2.1	VadEDGE 4200	3*
2.2	ISDN 2e circuit	1
2.3	Interface cables	2
<i>Note. — Hardware listed under Section 2 is located at Whitehill.</i>		
3.	Secure SADIS FTP service	
3.1	Dell Poweredge R900 servers with 1 Gb RAM	2
3.2	Dell Poweredge R900 (4 core) servers with 32 Gb RAM *	2
3.3	Shared Storage Arrays (analogous to hard disk storage, but with dynamic upper limit)	2
3.4	VMWave Virtual Platform with Red Hat Linux 5.3 OS	2
3.5	Intel Xeon X7350, 2.93 GHz Processors	2
3.6	Licenses, misc. support and maintenance costs	1
<i>Note 1. — Item 3.2 relates to Digital Signing servers.</i>		
<i>Note 2. — Items listed under Section 3 are located at Exeter.</i>		
4.	SADIS 2G Infrastructure	
4.1	MetSwitch port	1
4.2	MegaPAC V-IX Base System Dual PSU including Chassis, 1 CP70006000, and 1 switch	2*
4.3	CP70006000 for use with MegaPAC V-IX	1*
4.4	VadEDGE 4200	4*
4.5	Uplink modem (Comtech EF Data SDM-300a)	3*
4.6	Communications cabinet and lease	1
4.7	MegaWatch including Enterprise Reports, and PC	1
4.8	Comtech SDM300L demodulator (NER5 downlink)	1
4.9	Corobor comparator software and PC MetSwitch Comparator functions	1
4.10	Communications rack floor space at Exeter in IT Hall 1 and IT Hall 2, and at Whitehill	3
4.11	Space in stores at Exeter to locate spare hardware	1
4.12	WAN Module	2
4.13	Comtech EF Data SMS 301 – redundancy switch	2*
4.14	BRI Module for VadEDGE 4200	2
4.15	Interface cabling	8

** Includes one unit/module stored as a cold spare and one unit as part of downlink that may also be used as a spare for the uplink circuit if necessary.*

Note. — Hardware listed under Section 4 is located at Exeter and Whitehill.

2. PROCURED SERVICES

- A. Space segment annual lease: Allocated frequency band to SADIS 2G, providing a 64 Kbit/sec data rate (less communications overhead);
- B. Annual maintenance of Met Office Exeter and Whitehill uplink site equipment (SADIS 2G and Secure SADIS FTP server); and
- C. Gateway function:
 - i) Communication circuits between Met Office and NATS infrastructure site; and
 - ii) System maintenance.

3. ANNUAL STAFF REQUIREMENTS

A. United Kingdom Met Office

i) Service Desk

Note.— The Service 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 limited on-call capability.

24-hour Weather Desk support

Skill

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <ol style="list-style-type: none"> 1. Service desk (first point of contact) 2. Additional Service Desk operator | Incident Management
Customer Enquiries |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|

Note. — Total support for SADIS provided by the Met Office Service Desk team equates to 0.3 per cent of the total Weather Desk budget.

24-hour IT Operations support

Skill

- | | |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <ol style="list-style-type: none"> 1. Technical Team Leader (TTL) 2. Networks and Systems Supervisor (NSS) | Technical Supervisor
Service Continuity |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|

Note. — Total support for SADIS provided by the Met Office IT Operations team equates to 3.5 per cent of the total IT Operations budget.

Normal working hours support

Skill

- | | |
|---------------------------------------------------------------------------------------|--------------------|
| <ol style="list-style-type: none"> 1. Change and problem manager (CPM) | Process Specialist |
|---------------------------------------------------------------------------------------|--------------------|

ii) Additional support

Day support

Resource

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. Systems integration team 2. Message Switching Manager 3. Administrator 4. International aviation management 5. Data traffic 6. Contract procurement and management 7. Message switching Team 8. Invoice Administration | 14 staff-days of network computer engineer
15 staff-days of MSS manager
15060 staff-days of executive officer
1530 staff-days of manager
5 staff-days of communications engineer
4 staff-days of senior procurement officer
15 staff-days of technical officer
20 staff-days of invoicing officer and
15 staff-days of business accountant |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

B. NATS infrastructure site – CACC (OPMET Gateway function)

Note 1. — The CACC provides the OPMET Gateway function, which is provided from a single operational site, but with a full capability at an alternative site. Staff are available either on a 24-hour basis, or as a daytime support with on-call capability.

Note 2. — The resource demand of 610 days required to provide the SADIS Gateway service comprises 6 watches of 1 ATSA4 and 1 ATSA3 each (Operations), 1 ATCE4 (Engineering Watchkeeping) and 3 ATCE4 (Engineering Day Support).

<i>24-hour support</i>	<i>Resource</i>
1. Air Traffic Services Assistant	576 staff-days per annum
2. Maintenance Engineer	24 staff-days per annum
<i>Day Support</i>	<i>Resource</i>
3. Administration	10 staff-days per annum

C. Bought-in services

Additional support and maintenance agreements with third parties are in place to provide third line support of the SADIS 2G service.

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