SADIS COST RECOVERY ADMINISTRATIVE GROUP
(SCRAG)

TENTH MEETING

(Paris, 6 November 2009)

**Agenda Item 2:   Consideration of issues relevant to the SCRAG's work addressed by the
SADIS Operations Group (SADISOPSG)**

REPORTS ON CONCLUSIONS OF THE SADISOPSG/14 MEETING

(Presented by the Chairman of the SADIS Operations Group)

1.   Introduction

1.1   This paper includes the following Attachments received from the Chairman of the
SADISOPSG:

- **Attachment 1**: Executive Summary of the fourteenth meeting of the SADIS Operations Group
  (SADISOPSG/14, Bangkok, 15-17 July 2009);

- **Attachment 2**: Annual statement of operational efficacy of SADIS 2008/2009;

- **Attachment 3**: SADIS inventory 2009/2010;

- **Attachment 4**: Review of additional SADIS costs;

- **Attachment 5**: Update of Annex I to the SADIS Agreement; and

- **Attachment 6**: Follow-up of SADISOPSG/14 Conclusions 14/18 b), 14/19 b) and 14/23 b) on
  costs arising from the development of SADIS.

2.   Action by the Group

2.1   The Group is invited to review the information presented in this paper.

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FOURTEENTH MEETING

SADIS OPERATIONS GROUP
(Bangkok, Thailand, 15 to 17 July 2009)

EXECUTIVE SUMMARY[1]

1.   **INTRODUCTION**

1.1   The fourteenth meeting of the SADIS Operations Group (SADISOPSG/14) was held at the Asia and Pacific (APAC) Regional Office, Bangkok, 15 to 17 July 2009. The meeting was attended by eighteen experts from nine States (including the representative of the focal point of the EUR OPMET Bulletin Management Group (BMG)) and one international organization (the International Air Transport Association (IATA)).

1.2   The Chairman, Dr. Th. L. van Stijn (Netherlands), presided over the meeting throughout its duration. Mr. V. Ahago (Kenya) was elected Vice Chairman.

2.   **FOLLOW-UP OF SADISOPSG/13 CONCLUSIONS**

2.1   With regard to the follow-up of the SADISOPSG/13 conclusions, the group noted that action had been completed on all the issues except for Conclusion 13/27 related to the future utilization of the SADIS satellite bandwidth which was re-instated by the group (Conclusion 14/25).

3.   **OPERATION OF THE SADIS**

3.1   With regard to the list of SADIS operational focal points, the group concurred that it provided useful contacts for the SADIS Provider State and the ICAO Regional Offices to resolve operational issues, and agreed that ICAO should update the list in time for the dispatch of the SADIS efficacy questionnaire in December 2009 (Conclusion 14/2).

3.2   The group reviewed the operation of SADIS during 2008/2009 based on the annual management report from the SADIS Provider State and on responses from forty-four States to the annual questionnaire on the operational efficacy of the SADIS broadcast. Concerning the annual questionnaire, the group was pleased to note the positive developments that had taken place, in particular the successful implementation of the SADIS 2G reception and improvements on the availability of upper-air data in the GRIB code form. The group agreed that the format of the questionnaire should be updated to include questions related to the SADIS FTP service in future consultations (Decision 14/3). The group also agreed that the SADIS broadcast continued to meet the operational requirements during the period under review and that the SADIS Cost Recovery Administrative Group (SCRAG) be informed accordingly (Conclusion 14/4).

3.3   The group reviewed the SADIS inventory for 2009/2010. In order to ensure that SADIS continued to meet the approved operational requirements, amendments to the inventory were made based on proposals by the SADIS Provider State. The updated inventory would be forwarded to the Chairman

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[1] The full report is available at the following website: www.icao.int/anb/sadisopsg

of SCRAG (Conclusion 14/5). The group noted with some concern the increases in human resources included in the SADIS Inventory; however, based on information provided by the SADIS Provider State, it concurred that they were in accordance with current and future requirements for the SADIS service (Decision 14/6) and requested the Chairman of the SADISOPSG to inform the SCRAG accordingly (Conclusion 14/7).

3.4   To take into account the expansion of the SADIS FTP Service, the group felt that the SADIS Agreement should be updated and developed an appropriate draft amendment thereto in view of its formal amendment by the SCRAG (Conclusion 14/8). In order to moderate future increases in States' contributions for the SADIS programme, the group concurred with the SCRAG/9 Meeting that the long-term strategy for the SADIS service be thoroughly reviewed in view of finding savings which could compensate for the recent cost increases (Conclusion 14/9).

4.   CONTENT OF THE SADIS BROADCAST

4.1   OPMET information

4.1.1   The group noted with concern that certain States continued to issue two types of TAF for an aerodrome, in contradiction with Annex 3 — *Meteorological Service for International Air Navigation* ; it was therefore agreed that States should be reminded that only one type of TAF is to be issued for international aerodromes (Conclusion 14/10).

4.1.2   Regarding the recurrent requests for the modifications of TAF from the AOP aerodromes, it was recalled that such requests should be addressed to the ICAO regional office concerned, since the provision of TAF was subject to formal RAN agreement. Meanwhile, the group reviewed and endorsed the proposals made by IATA concerning OPMET information from non-AOP aerodromes and tasked the Secretariat to modify the requirements, subject to States' concurrence (Conclusion 14/11).

4.1.3   The group endorsed the efforts to complete the harmonization of the SADIS and ISCS broadcasts based on Annex 1 to the *SADIS User Guide* (SUG), as far as the content of OPMET information is concerned (Conclusion 14/12).

4.2   WAFS forecasts

4.2.1   With regard to Annex 4 to the SUG, listing the WAFS forecasts included in the SADIS broadcast, the group endorsed amendments thereto related, inter alia, to the introduction of WAFS forecasts in the GRIB 2 code form (Decision 14/13).

5.   DEVELOPMENT OF THE SADIS

5.1   Report of the SADISOPSG Gateway Development Team

5.1.1   The group noted that after the implementation of the new TAF code form (comprising the addition of the date to the time groups) the SADIS Gateway had received non-compliant TAF which had led to problems with the auto-correction functions. To address these problems, the group supported the action taken by the SADIS Provider State, i.e. the removal of the auto-correction function (Conclusion 14/14).

5.2   Report of the SADISOPSG Strategic Assessment Team

5.2.1   Based on a report provided by the Rapporteur of the SADISOPSG Strategic Assessment Team, the group reviewed the content of the strategic assessment tables and requested that ICAO forward copies of the tables to the PIRGs concerned so that they may form the basis for the next regional update in respect of future SADIS requirements (Conclusion 14/15).

5.3   Report of the SADISOPSG Technical Developments Team

5.3.1   The group noted that the issues dealt with by the SADISOPSG Technical Developments Team were related to the GRIB2 data transmission trial performed on 29 to 30 April 2009 and to the data loss problems experienced with some SADIS 2G users. With regard to the GRIB 2 data transmission trial, the group agreed that the SADIS Provider State should complete the trial of compressed GRIB 2 coded data by 30 September 2009; it should also present proposals, for endorsement by the SADISOPSG/15 Meeting, for further steps in view of introducing the transmission of GRIB 2 coded data on the SADIS 2G broadcast, as an operational procedure, with the understanding that the inclusion of GRIB 2 forecasts for CB clouds, icing and turbulence would have to be subject to endorsement by the WAFSOPSG (Conclusion 14/16).

5.3.2   Concerning the data losses, the group concluded that, for the time being, the SADIS Provider State would not need to take any specific measures; proactive administrative messages in the event of a data loss or service outage should continue to be issued, as part of the operational service desk procedures (Decision 14/17).

5.4   SADIS Internet-based FTP Service

5.4.1   The group was pleased to note that the SADIS FTP Enhanced service had been implemented in April 2009. It invited the SADIS Provider State to proceed with the development of a SADIS FTP Secure service which was expected to become operational by November 2010 (Conclusion 14/18). To enable the introduction of these services, the SADIS Provider State was invited to increase the SADIS FTP Internet bandwidth allocation to 4 Mbps bursting to 8 Mbps between server and Internet service provider (with individual client connections guaranteed at 64 kbps, bursting to 512 kbps), in time for the SADISOPSG/15 Meeting (Conclusion 14/19).

6.   LONG-TERM PLANNING OF SADIS

6.1.1   The group endorsed the five-year long-term plan for the years 2010 to 2014, based on updates by the SADIS Provider State (Decision 14/20).

7.   THE SADIS USER GUIDE

7.1   The group noted that amendments to the SUG had been made to take into account the planned introduction of the WAFS forecasts in the GRIB 2 code form. The group endorsed these changes (Decision 14/21).

8.   FUTURE WORK PROGRAMME

8.1   The group reviewed and updated the deliverables in its work programme for the years 2009 to 2013 (Decision 14/22).

9.   ANY OTHER BUSINESS

9.1   Evaluation of available SADIS workstation software

9.1.1   The group noted that, by 21 May 2009, eight out of nine listed software vendors on http://www.metoffice.gov.uk/sadis/about/manufacturers_full.html had had their software evaluated. Of the eight software packages assessed, seven can be considered compliant, providing visualization software that could depict global OPMET and WAFS data to the ICAO Standards and requirements.

9.2   Hardware refresh proposal for SADIS 2G uplink infrastructure

9.2.1   With regard to the need for hardware refresh, the group concurred with the SADIS Provider State that it should refresh the SADIS 2G hub equipment at Exeter and Whitehill based on simplified topology by 31 December 2009 (Conclusion 14/23). This would lead to reduced support and maintenance costs in 2010 onwards. The group also felt that in this context the SADIS Provider State should conduct an investigation into the most efficient protocol to transmit SADIS 2G data between the Met Office, Exeter and Whitehill uplink facility, considering promulgation of data over IP and increasing communication circuits to 128 kbps (Conclusion 14/24).

— END —

ATTACHMENT 2

Ref.: SWG 5/1.4.1   7 August 2009

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **Annual statement of operational efficacy of SADIS 2008/2009**

I wish to inform you that the SADISOPSG, in Conclusion 14/4, instructed me to advise you that the operational efficacy of the SADIS had continued to be satisfactory, meeting all operational requirements since the SADISOPSG/13 Meeting (27 to 29 May 2008).

Th. L. van Stijn

Ref.: SWG 5/1.4.1

7 August 2009

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **SADIS inventory 2009/2010**

        I wish to inform you that the SADISOPSG, in Conclusion 14/5, instructed me to forward to you the attached updated SADIS inventory.

Th. L. van Stijn

Enclosure:
   Updated SADIS inventory

SADIS INVENTORY 2009/2010
Changes highlighted

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.

1. EQUIPMENT

A. Key Components of Hub Infrastructure and Communications Circuits

~~The SADIS 1G hub infrastructure connection to the Met Office message switch (Frost) consists of a number of units developed in conjunction with EADS Astrium and other suppliers. These are installed either at Exeter or at the uplink site at Whitehill, Oxfordshire, UK.~~

~~Additional hub infrastructure has been installed at Exeter and Whitehill to provide resilient SADIS 2G service. This hardware is physically separate from the SADIS 1G infrastructure.~~

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

The SADIS FTP hub infrastructure connection to the Met Office message switch (Frost) 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").

~~Hewlett-Packard L-Class~~ Dell Poweredge R900 servers to provide SADIS FTP Service (see section 1C)

ii) Principally procured for SADIS

a) At the Met Office

See section 1C for itemised components

b) communications between ~~Whitehill and~~ Met Office Exeter and Whitehill uplink facility

~~1) 2 Fibre Optic 64 Kbps circuits in support of SADIS 1G service~~

2) 1) 2 Fibre Optic 64 Kbps circuits in support of SADIS 2G service.

c) the uplink site (Whitehill)

> ~~3) units forming part of a totally integrated rack structure to provide SADIS 1G service, with back-up, referred to as Chain A and Chain B (see the list under sections 1C);~~

> ~~4)~~1) units and services leased from Cable and Wireless Communications Ltd. to support SADIS ~~1G and~~ 2G services:

>> (a) 1 (70 to 140 MHz) convertor

>> (b) use of 1 (140 to C band) convertor

>> (c) use of satellite hub (lease represents only a very small part of this large aperture) for SADIS ~~1G and~~ 2G services; and

> ~~5)~~2) units forming part of a totally integrated rack structure to provide SADIS 2G service, with back-up, (see the list under sections 1C)

~~d) communication link (SVC) between SADIS Gateway and Met Office in support of SADIS 1G service; and~~

~~e)~~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) Message switch (FROST): Total investment, £1.34M[1] of which 2.40 per cent is attributable to SADIS usage: switching data to operational (1G) broadcast service and to 1G monitoring system — Corobor Comparitor.~~

> a) Met Office Message switch (FROST): Total investment, £~~1.34~~1.26M[1] of which ~~1.25~~1.22 per cent is attributable to SADIS FTP service usage: switching data to operational FTP service;

>> *Note. — The percentage attributable to the SADIS FTP service will increase as GRIB 2 WAFS data is routed to the server by FROST before the end of 2009.*

> b) Met Office Message switch (FROST): Total investment, £~~1.34~~1.26M[1] of which ~~0.60~~0.63 per cent is attributable to SADIS usage: switching data to operational (2G) broadcast service and to 2G monitoring system (Corobor Comparator);

>> *~~Note: The percentage attributable to the SADIS FTP service has increased, in part, due to the provision of the gridded icing/turbulence/CB data on SADIS FTP, and the provision of a contingent FTP feed to supply GRIB and BUFR data during a SADIS FTP service interruption in October 2007~~*

> c) Allocated bandwidth (2 Mbps bursting to 4 Mbps) between server and Internet Service Provider (ISP) in support of the SADIS FTP service; ~~and~~

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[1] budgeted cost for providing FROST service during the fiscal year 200~~89~~9/200~~910~~10.

d) NATS Message switch (CoreMet System).:

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

e) SADIS FTP equipment running costs;

> Note.— These costs are applied to all Met Office internet facing services and primarily relate to costs associated with ensuring high levels of IT security.

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% of total share of Met Office Serial Communications. Includes cost of switching serial data from FROST 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

ISCS VSAT receiving system, including TCP/IP receiver and cables, on SADIS Provider (UK Met Office) premises.

> Note 1.— This hardware is not currently used in an operational environment

> Note 2..— The SADIS Gateway (UK NATS) continues to procure an ISCS VSAT receiving system, a dedicated SADIS data backup arrangement with the ISCS Provider State. The backup infrastructure will include an ISDN connection between the NWS Telecommunications Gateway and the SADIS Gateway, and an including ISDN connection to between the SADIS Gateway and Whitehill uplink facility, to provision SADIS data backup.

C. Hub equipment and services located at Exeter and Whitehill

Item	Description	Quantity
1.	Exeter Equipment to support SADIS 1G	
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
1.6	Communications rack floor space in IT hall 1 and space in stores to locate spare equipment	1
2.	Exeter Equipment (Spares) to support SADIS 1G	
2.1	Telecoms interface units Megabox	2
2.2	NMS Spare CPU	1
2.3	MemoTech PAD (for NMS)	1
2.4	CX1000 Frame Relay Switch (for NMS)	1
	Note: communication links in support of SADIS 1G service are included in section 1.1 of Inventory.	
3.	Whitehill earth station (SADIS 1G uplink equipment)	
	Telecoms controller Megapac V rack assembly	
3.1	Station interface unit (SIU)	2
3.2	8360 Modulator	2
3.3	8471 Receive Demodulators	2
3.4	8550 Modem Switch	12
3.5	140 L band upconverter	1
3.6	X Term NMS simulator	2
3.7	Equipment Rack Assembly (Chain 1)	1
3.8	Equipment Rack Assembly (Chain 2)	1
3.9	Communications rack floor space for two communications	1
3.10	racks	2
4.	Whitehill earth station SADIS 1G (spares)	
4.1	8471 Receive Demodulators	1
4.2	Station interface unit (SIU)	1
4.3	MegaPAC V rack assembly	2
4.4	MegaPAC V Frad units	2
4.5	140 L band upconverter	1
4.6	8360 Modulator	1
4.7	8550 Modem Switch	1

~~5.~~1. **Whitehill services (leased from Cable & Wireless)**

~~5.1~~1.1 70 MHz to 140 MHz converters ~~21~~
~~5.2~~1.2 140 MHz to C band converter ~~21~~
~~5.3~~1.3 Satellite Hub leased bandwidth 1 slot
~~6.~~ **Test Rig at Poynton**

~~6.1~~ Enhanced (SADIS 1G) Simulator ~~1~~

~~7.~~2. **ISDN back-up service to Washington (NWSTG)**

~~7.1~~2.1 MegaPAC 2003 router (MP-2003) 1
~~7.2~~2.2 MegaPAC 2003 router plus expansion (MP-2003-3-B) 1
~~7.3~~2.3 ISDN 2e circuit 1
~~7.4~~2.4 A/B switch 1
~~7.5~~2.5 Interface cables 1

Note.— Hardware listed ~~items~~ under Section ~~7~~2 ~~are~~is located at Whitehill.

~~8.~~3. **SADIS FTP Service**

~~8.1~~3.1 ~~HP L2000~~Dell Poweredge R900 servers with ~~2~~1 Gb RAM 2
~~8.2~~3.2 ~~18~~26.8 Gb internal disk drives 2
~~8.3~~3.3 ~~DVD-ROM~~VMWave Virtual Platform with Red Hat Linux 2
        5.3 OS
3.4   Intel Xeon X7350, 2.93 GHz Processors 2
~~8.4~~3.5 Licenses, misc. support and maintenance costs 1

Note. — Hardware listed under Section 3 is located at Exeter.

~~9.~~4. ~~Operational~~ *SADIS 2G Infrastructure*

~~9.1~~4.1 FROST port 1
~~9.2~~4.2 MegaPAC V System Dual PSU 3*
~~9.3~~4.3 MegaPAC 2003 (Exeter) 3*
~~9.4~~4.4 Uplink modem (Comtech EF Data SDM-300a) 3*
~~9.5~~4.5 Communications cabinet and lease 1
~~9.6~~4.6 MegaWatch including Enterprise Reports, and PC 1
4.7   Comtech SDM300L demodulator (NER5 downlink) 1
~~9.7~~4.8 Corobor comparator software and PC
~~9.8~~4.9 XIO Modules 1
~~9.9~~4.10 SIO Modules 12**
~~9.10~~4.11 8Mb RAM Modules 3*
~~9.11~~4.12 Communications rack floor space at Exeter in IT hall 1 and 3*
        IT hall 2, and at Whitehill 3
~~9.12~~4.13 Space in stores at Exeter to locate spare hardware
~~9.13~~4.14 VadEGDE 4202 – 1U 1
~~9.14~~4.15 WAN module 2
~~9.15~~4.16 Comtech EF Data SMS 301 – redundancy switch 2
~~9.16~~4.17 Interface cabling 2*
                                                          15

*Includes one unit/module stored as a cold spare.
**Includes four modules stored as cold spares.
Note. — Hardware listed under section 4 is located at Exeter and Whitehill.

2. PROCURED SERVICES

A. Space segment annual lease: 1.5MHz wide frequency band of which 57% is utilised to support SADIS 1G and 2G, with minimum data rates at 38.4 Kbps for both services 64Kbps data rate (less communications overhead);

Note. — SADIS 1G was terminated on 5th January 2009. The percentage of satellite space segment has, however, remained unchanged because the SADIS 1G satellite bandwidth allocation was maintained in 2009 and 2010, as called for by SADISOPSG Decision 13/26.

B. Annual maintenance of Met Office Exeter and Whitehill uplink site equipment (1G, SADIS 2G and 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.

~~Normal working hours~~24-hour Weather Desk support	Skill
1. Service Desk (first point of contact)	Scientific supervisor
2. Additional Service Desk operator	Systems analyst

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

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
~~1. Operations Systems Analyst (OSA)~~	~~Systems analyst~~
~~2.~~1. Technical Team Leader (TTL)	Computer engineer
~~3.~~2. Networks and Systems Supervisor (NSS)	Technical supervisor
~~4. Operations Service Delivery (OSD) Service Assurance~~	~~Scientist~~

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
1. Change and problem manager (CPM)	Systems analyst
~~2. Additional Service Desk operator~~	~~Systems analyst~~

*~~Note. — The total support for SADIS is considered as 1 percent of the total support provided by the Service Desk and operational support function. These functions comprise 4 * 24 hour rosters of six staff each, an additional three man team (CPM), and one further 5 roster team providing further (normal working hours) Service Desk support.~~*

ii) Additional support

~~Additional~~ Day support	~~Skill~~Resource
1. Systems integration team	~~30~~10 per cent of network computer engineer and 10 per cent of CIDA
2. Message Switching Manager	10 percent of MSS manager
~~2.~~3. Administrator	75 per cent of executive officer
~~3.~~4. International aviation management	15 per cent of manager

~~4.~~5. Data traffic   5 per cent communications engineer

~~5.~~6. Contract Procurement and Management   5 per cent of senior procurement officer

~~6.~~7. UNIX support   10 per cent of computer engineer

~~7.~~8. Web team support   10 per cent of web site designer

Note 1.— Support by the UNIX Team of the SADIS FTP Service will incur some additional costs in excess of simple human resources. These costs are applied to all internet facing services and primarily relate to costs associated with ensuring high levels of IT security.

Note 2.— CIDA is the Co-ordinating Installation Design Authority. The Met Office CIDA Installation Design and Engineering team are technical authorities who work alongside project managers to co-ordinate the efforts of a number of different groups.

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

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

~~The staff is made up of~~ 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).

24 hour support	*~~Skill~~Resource*
1. Operational staff support	~~10 per cent of ATSA4~~523 man-days per annum ~~10 per cent of ATSA3~~
2. Engineering staff support	~~10 per cent of systems engineer~~22 man-days per annum
Day Support	*Resource*
3. SADIS administration support	~~40 per cent of ATSC T & SC~~50 man-days per annum
4. Engineering (including on-call)	~~10 per cent of 75 per cent of ATCE4~~15 man-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 ~~1G and~~ 2G services.

— END —

Ref.: SWG 5/1.4.1   7 August 2009

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **Review of additional SADIS costs**

        I wish to inform you that the SADISOPSG, in Conclusion 14/7, instructed me to forward to you background information related to the additional SADIS costs, given in the attachment to this memo. I was also advised by the group to inform you that the services outlined in the attachment are in accordance with current and future service level requirements.

Th. L. van Stijn

Enclosure:
Background information related to the additional SADIS costs

ATTACHMENT

BACKGROUND INFORMATION RELATED TO ADDITIONAL SADIS COSTS

1. UK MET OFFICE

1.1. Service Desk support of SADIS 2G and SADIS FTP

SADIS 2G passes through the MATRIX switch to the SADIS 2G Comparator System where the Network Systems Supervisor (NSS) is able to monitor the data feed from satellite with the expected transmission message count. The NSS uses DSView application to connect to the SADIS 2G Comparator System (SADIS 2G MON) and it's from here that NSS monitors SADIS 2G using Corobor software.

Using a dedicated MegaWATCH PC located in IT Hall 2, the Technical Teal Leader (TTL) has visibility of the two SADIS 2G MegaPAC 2003's located in our IT Halls and has the ability to manage the ports and communication links connected to them. The TTL is also able to access the SADIS 2G MegaPAC-V's located at Whitehill but has no control over the communications and equipment that lie beyond this point. The MegaWATCH is monitored by TIVOLI and TTL responds to these messages as required.

The SADIS FTP server is monitored by TIVOLI and the NSS responds to messages as required.

Service Desk equipment equates to 3.5 per cent of £448k budget for Met Office IT Operations equipment. This comprises share of workstation, central infrastructure and manager costs.

Service Desk staffing comprises 3.5 per cent of TTL and 7 per cent of NSS and equates to 3.5 per cent of £948k Met Office IT Operations staff costs.

1.2. Service Desk Serial Communications

Costs of switching serial data from FROST Message switch to SADIS 2G, comprising staff and equipment costs of supporting serial WAN, TTL Routers, Serial Modems and TTL matrix switches. This equipment is shared with the Met Office observations network. Costs have fallen significantly since the budgetary estimate provided in 2008 due to the de-commissioning of SADIS 1G.

Service Desk serial communications equates to 20 per cent of £68k budget for Met Office HQ data switching.

1.3 CIDA and Infrastructure Engineer (Systems Integration Team)

Previously, this activity was included within the 30 per cent allocation of a network computer engineer within the Systems Integration Team. To improve transparency of costs, this activity is now split between 10 per cent of a network computer engineer, 10 per cent of the Met Office CIDA installation Design and Engineering team and 10 per cent of the Message Switching Manager. Total effort remains the same at 30 per cent of a day-working member of staff and there is therefore no overall increase in cost for this area of activity.

2. UK NATS (SADIS Gateway)

2.1 Overview

NATS deliver quality controlled OPMET data for broadcast globally, real time monitoring & investigation, data searches to improve availability and fault restoration. Management of the data has increased beyond NATS' traditional role and since Public Private Partnership (PPP) is not part of NATS' licence obligation. The Agreement for provision of the SADIS Gateway therefore needs to be able to cover its costs and be sustainable. NATS as a national service provider is willing to support the ongoing provision of this service. Ongoing contributions from other areas are not included in the costing.

2.2 2009 Resource Cost Base Breakdown

Staff	Duties	Av. Jobs/day	Time (secs)/job	Total time (hours)/day	Hours/Year	Mandays
Operational Staff	Rejected messages	1055	30	8.8	3209	459
Operational Staff	Real-time monitoring	15	180	0.75	274	39
Operational Staff	Communications (apportionment)			1.5	548	78
Admin Support	Helpdesk queries/Orphans queue/data search/config.			1.5	378	54
				12.55	4409	630

2.3 2009 Proposed Revised Costing

As per the Agreement, NATS provides the following skill set

Chapter 1 Operational Staff	523 days
Chapter 2 Engineering Staff	22 days
Chapter 3 Database Admin Support	50 days
Chapter 4 Asset Engineering	15 days

Total of 610 days at a commercial cost of £298k including SADISOPSG support costs

Chapter 5 Asset charge of	£18k
Chapter 6 Finance charges	£1k
Total charge for 2009	£317k

It can be seen from the resource breakdown given in the table in section 2.2, that in order to deliver the SADIS Gateway service NATS actually requires 630 days. However, 20 days can be offset against related activities and so it is considered that only 610 days are chargeable.

— END —

Ref.: SWG 5/1.4.1   7 August 2009

To: Secretary, SCRAG

From: Secretary, SADISOPSG

Subject: **Update of Annex I to the SADIS agreement**

        I wish to inform you that the SADISOPSG, in Conclusion 14/8, instructed me to forward to you the amendment to Annex I to the Agreement on the Sharing of Costs of the SADIS, as contained in the attachment to this memo in view of its approval by the SCRAG. The amendment reflects factual changes.

Olli M. Turpeinen

Enclosure:
  Amendment to Annex I to the Agreement
on the Sharing of Costs of the SADIS

ATTACHMENT

PROPOSAL FOR AMENDMENT TO ANNEX I TO THE SADIS AGREEMENT

1. **BROADCAST SERVICE**

   a) distribution of WAFS upper-air ~~wind/temperature~~ forecasts in GRIB code ~~(including scheduled repeat of whole data set)~~;

   ~~b)   distribution of WAFS upper wind/temperature forecasts in T4 facsimile chart form;~~

   b) distribution of WAFS SIGWX forecasts in BUFR code ~~T4 facsimile chart form~~;

   c) distribution of WAFS SIGWX forecasts in PNG chart form ~~numerical code form as determined by ICAO~~;

   d) distribution of OPMET information in alphanumeric format (METARs, TAFs, SIGMET, special AIREPs, volcanic ash and tropical cyclone advisories) from those regions whose OPMET information is needed to satisfy approved requirements in the regions served by SADIS;

   ~~e)   istribution of amendments to the foregoing, as necessary, and responses to requests for repeat of data as determined by the SADISOPSG.~~

   e) distribution of meteorological information in graphical format (e.g. Volcanic Ash Trajectory and Dispersion Graphics)

2. **COLLECTION SERVICE**

   a) collection of relevant OPMET information by the SADIS Gateway, ~~including the Two-Way facility,~~ from States in accordance with approved requirements stated by PIRGs and actioned by SADISOPSG;

   b) monitoring, ~~and~~ validation and repair of data received at the SADIS Gateway, ~~including the Two-Way,~~ to the required standards, for the provision of real-time scheduled reports and for off-line quality control analysis.

3. **BACK-UP SERVICE**

   Reception of US ISCS broadcasts for back-up purposes.

4. **USER SUPPORT SERVICE**

4.1   24-hour help line/faults desk;

4.2   Dissemination of administrative messages, including amendments to bulletin headers given in the SADIS User Guide ~~via the SADIS broadcast (and by customary hard copy)~~.

5.   **FILE TRANSFER PROTOCOL SERVICE**

       Provision of facilities dedicated to establishing and receiving an FTP connection, using password-protected access, to the SADIS FTP server that enables the transfer of WAFS upper-air

forecasts in GRIB code, WAFS SIGWX forecasts in BUFR code, WAFS SIGWX forecasts in PNG chart form and OPMET data over the Public Internet.

— END —

7 August 2009

Ref.: SWG 5/1.4.1

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **Follow-up of SADISOPSG/14 Conclusions 14/18 b), 14/19 b) and 14/23 b)**

I wish to inform you that the SADISOPSG/14 Meeting instructed me to advise you of the following costs arising from the development of SADIS:

a) **Conclusion 14/18 b) — Development of SADIS FTP Secure service ("Phase 2")**

The estimated total cost related to the implementation of the SADIS FTP Secure service ("Phase 2"), foreseen to be operational by November 2010, is of the order of £69 000 ± £25 000.

b) **Conclusion 14/19 b) — SADIS FTP Internet bandwidth allocation**

The estimated increase of annual costs resulting from the increased bandwidth allocation is £3 000 (i.e. a change from £11 000 to £14 000).

c) **Conclusion 14/23 b) — Hardware refresh proposal for SADIS 2G hub equipment**

The associated cost with the hardware refresh of the SADIS 2G hub equipment is £65 000.

Th. L. van Stijn