SADIS COST RECOVERY ADMINISTRATIVE GROUP
(SCRAG)

TWELFTH MEETING

(London, 3-4 November 2011)

**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/16 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 sixteenth meeting of the SADIS Operations Group
(SADISOPSG/16, Paris, 23-25 May 2011);

- **Attachment 2**: Annual statement of operational efficacy of SADIS 2010/2011;

- **Attachment 3**: SADIS inventory 2011/2012;

- **Attachment 4:** Procurement of an additional vadEDGE 4200 unit.

2.   **Action by the Group**

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

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SIXTEENTH MEETING

SADIS OPERATIONS GROUP
(Paris, France, 23 to 25 May 2011)

EXECUTIVE SUMMARY[1]

1.   **INTRODUCTION**

1.1   The sixteenth meeting of the SADIS Operations Group (SADISOPSG/16) was held at the European/North Atlantic (EUR/NAT) Regional Office, Paris, 23 to 25 May 2011. The meeting was attended by 16 participants from 8 States (including the representative of the focal point of the EUR OPMET Data Management Group (DMG)) and three international organizations (Agency for Air Navigation Safety in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA) and the World Meteorological Organization (WMO)).

1.2   The Chairman, Dr. Theo L. van Stijn (Netherlands), presided over the meeting throughout its duration.

2.   **FOLLOW-UP OF SADISOPSG/15 CONCLUSIONS**

2.1   With regard to the follow-up of the SADISOPSG/15 conclusions, the group noted that action had been completed on all the issues except for Conclusion 15/9, which was reinstated under Conclusion 16/9 (Decision 16/1).

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 2011 (Conclusion 16/2).

3.2   The group reviewed the operation of SADIS during 2010/2011 based on the annual management report from the SADIS Provider State and on responses from forty-three States to the annual questionnaire on the operational efficacy of the SADIS broadcast. Concerning the annual questionnaire, the group was particularly pleased to note the increased capacity of producing compliant significant weather (SIGWX) charts from the BUFR-coded world area forecast system (WAFS) forecasts. The group agreed that the format of the questionnaire was up-to-date and that no major changes were required (Decision 16/3). The group also agreed that the SADIS satellite broadcast, SADIS file transfer protocol (FTP) and Secure SADIS FTP services had continued to meet the operational requirements during the period under review and that the SADIS Cost Recovery Administrative Group (SCRAG) be informed accordingly (Conclusion 16/4).

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

3.3   The group reviewed the SADIS inventory for 2011/2012, and, in order to ensure that SADIS continued to meet the approved operational requirements, proposed amendments to the inventory that would be forwarded to the Chairman of SCRAG (Conclusion 16/5).

4.   **CONTENT OF THE SADIS BROADCAST**

4.1   **OPMET information**

4.1.1   The group recalled that, based on requests by IATA, additional requirements for OPMET information from non-AOP aerodromes had been included in State letter, year after year, and that as a result, normally only a small number of States had *formally* concurred with such requirements. The group felt that repetitive State letters sent annually to the same States with an identical request could be counterproductive, in particular if the State has already clearly indicated their reluctance to provide OPMET information from the non-AOP aerodromes concerned. Under these circumstances, the group agreed that the Secretariat should keep track on the requests made and to ensure that a State that had refused the provision of OPMET information from their non-AOP aerodromes not be approached before a period of three years had elapsed (Decision 16/6)

4.1.2   Regarding the recurrent requests for the modifications of TAF requirements 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 regional air navigation (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 16/7).

4.2   **WAFS forecasts**

4.2.1   With regard to Annex 4 to the SADIS User Guide (SUG), which lists the WAFS forecasts disseminated on SADIS, the group noted that an update had been necessary as a result of changes in the provision of WAFS forecasts in GRIB 2 code form, deletion of WAFS forecasts for cumulonimbus clouds, icing and turbulence in the GRIB 1 code form, and changes in the issuance times of WAFS SIGWX forecasts in the BUFR code and PNG chart form (Decision 16/8).

5.   **DEVELOPMENT OF THE SADIS**

5.1   **Report of the SADISOPSG Gateway Development Team**

5.1.1   Based on the results of a 14-day analysis undertaken early in 2011, the group noted that the level of compliance of SIGMET messages had reached a level of compliance of 80 per cent, and that automatic validation of SIGMET messages would be re-introduced at the SADIS gateway before the next meeting.

5.1.2   The group endorsed continued efforts to complete the harmonization of the SADIS and international satellite communication system (ISCS) broadcasts based on Annex 1 to the SUG, as far as the content of OPMET information is concerned and to remind States of the importance to route all OPMET information to both the SADIS and ISCS gateways (Conclusion 16/9).

5.1.3   With regard to the deliverables of the SADIS Gateway Development Team, the group agreed that, over the last few years, the team had completed its main development tasks and that currently it only addressed two recurrent tasks – namely the maintaining of Annexes 2 and 3 of the SUG, and

technical requirements contained in the *SADIS Gateway Operations Handbook*. The group concurred that there was no need to maintain a SADIS Gateway Development Team and that the deliverables allocated to the team be addressed in the future by the SADIS Provider State, in coordination with the EUR OPMET DMG (Decision 16/10).

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. The group recalled that the strategic assessment tables, containing an outlook of the expected OPMET and AIS data volumes for the next five years, had been prepared since the early days of the SADISOPSG, with the intention that they be completed on an annual basis by the MET sub-groups of the planning and implementation regional groups (PIRG) in Europe, the Middle East, Africa and Asia. In practice however, little input had been received over the years from the regional MET sub-groups and the annual update had become a routine exercise, based exclusively on the input of the SADIS Provider State. The group therefore concurred that the time had come to dissolve the SADISOPSG Strategic Assessment Team and to simplify the process of establishing outlooks for future OPMET and AIS data volumes on the SADIS, to be included in the annual SADIS Management Report (Decision 16/11).

5.3   **Report of the SADISOPSG Technical Developments Team**

5.3.1   The group recalled that the SADISOPSG Technical Developments Team was expected to monitor, report, and propose action on, technological developments having an impact on SADIS. The group noted that the issues dealt with by the SADISOPSG Technical Developments Team since the last meeting were related to:

    a) SADIS 2G future bandwidth requirements and utilization;

    b) tests of GRIB 2 data over SADIS 2G; and

    c) the SADIS FTP service.

5.3.2   The group noted that tests of GRIB 2 data over SADIS 2G had been completed.

5.3.3   In respect of the future utilization of the SADIS satellite bandwidth, the group reiterated its earlier position that for the optimum use of the satellite bandwidth, the gridded WAFS forecasts in GRIB 1 and GRIB 2 code form should not be transmitted simultaneously. Accordingly, the group concurred with the sixth meeting of the World Area Forecast System Operations Group (WAFSOPSG Conclusion 6/10 refers) which had determined that, for operational reasons, as of 5 July 2012, the WAFS forecasts in GRIB 2 code form should be transmitted ahead of those on the GRIB 1 code form (Conclusion 16/12).

5.3.4   The group reviewed the results of a consultation with SADIS user States and users on the need for continued satellite distribution of OPMET data (including WAFS forecasts) beyond 2015, and noted that a clear majority of the replies (23 out of 32) had expressed a need for continued satellite broadcast beyond 2015. In particular, States outside the (western and northern parts of the) EUR Region were, with one exception, unanimous about the need for continued satellite broadcast. The arguments for maintaining the satellite broadcast put forward by States included the unreliability and data congestion of the Internet, in particular in the developing world. The group agreed that it would be premature to draw any final conclusions concerning the future of the satellite broadcast and established an ad hoc team to formulate recommendations concerning the future of the SADIS satellite broadcast beyond 2015 (Conclusion 16/13).

5.4 **SADIS Internet-based FTP Service**

5.4.1   The group addressed three specific issues related to the SADIS file transfer protocol (FTP) Service:

> a)   back-up to the Secure SADIS FTP Service;
>
> b)   current status of software compatible with the Secure SADIS FTP Service; and
>
> c)   proposal to host world area forecast centre (WAFC) Washington GRIB 2 upper-air forecasts on the Secure SADIS FTP Service.

5.4.2   Concerning the back-up options for the Secure SADIS FTP Service, the group concurred that the SADIS users required a highly reliable delivery service and that the Secure SADIS FTP service had been demonstrated to be reliable being designed upon redundant and resilient hardware. Nonetheless, the group emphasized that consideration must be given to contingency in the event of a catastrophic disaster at the Secure SADIS FTP Provider's complex. Accordingly, the group discussed three high-level backup options, including preliminary cost estimates, and concluded that using the existing United States administered World Area Forecast Centre (WAFC) Internet File Service (WIFS) as an alternative source of OPMET data (including WAFS forecasts) would be the most cost effective and most independent option (Conclusion 16/14).

5.4.3   The group recalled that the Secure SADIS FTP Service had been implemented on 17 November 2010, and recalled that it was tentatively planned to cease the provision of the prevailing SADIS FTP service in November 2011. Noting that roll-out, by workstation vendors, of compatible software to users of Secure SADIS FTP was progressing well, but that complete roll-out by November 2011 was considered optimistic, and also taking into consideration that many existing SADIS FTP users had not yet registered for the Secure SADIS FTP service, the group concurred that the SADIS Provider should extend the service life of the prevailing SADIS FTP by 12 months. To achieve a full implementation, the group agreed that there would be no further extensions to the prevailing SADIS FTP service beyond the date agreed, and that all users must be able to access data via the Secure SADIS FTP Service by 30 November 2012 (Conclusion 16/15). The early migration to the Secure SADIS FTP Service was considered important since it was the only FTP service that was compatible with ICAO guidance contained in the *Guidelines on the use of the Public Internet for aeronautical applications* (Doc 9855).

5.4.4   Concerning a proposal to host WAFC Washington GRIB 2 upper-air forecasts on the Secure SADIS FTP Service, the group noted that hosting the data would not be technically difficult, and that, furthermore, some users would benefit from being able to access both sets of WAFS forecasts in the GRIB 2 code form, thereby avoiding the need to register and configure their systems to use both SADIS Internet-based services and WIFS. The group concurred that the WAFC Washington forecasts in the GRIB 2 code form should only be made available on the Secure SADIS FTP Service, since the prevailing SADIS FTP would be phased out in November 2012 and also that bandwidth limitation on the SADIS satellite broadcast was an issue (Conclusion 16/16).

6. **LONG-TERM PLANNING OF SADIS**

6.1.1   Based on an update by the SADIS Provider State, the group endorsed the concise long-term plan for SADIS for the years 2012 to 2016 (Decision 16/17).

7. **THE SADIS USER GUIDE**

7.1   The group noted that amendments to the SUG had been made to take into account the introduction of the Secure SADIS FTP service, the introduction of WAFS forecasts in GRIB 2 code form on SADIS 2G and Secure SADIS FTP, the withdrawal of gridded WAFS forecasts of cumulonimbus clouds, icing and turbulence in the GRIB 1 code form, clarification of the nature of the Annexes to the SUG, and the replacement of Appendix F (containing the SADIS Agreement) by a link introduced in the body of the SUG. Editorial updates had also been introduced concerning Appendices C, I and L of the SUG, together with an update of outdated URLs. The group endorsed the changes introduced (Decision 16/18).

8. **FUTURE WORK PROGRAMME**

8.1   The group reviewed and updated the deliverables in its work programme for the years 2011 to 2015, taking into account the dissolution of the SADISOPSG Gateway Developments Team and the SADISOPSG Strategic Assessment Team (Decision 16/19).

9. **ANY OTHER BUSINESS**

9.1   **Availability of tropical cyclone advisories in graphical format**

9.1.1   The group was aware that the provision of tropical cyclone advisories in graphical format had been introduced in Annex 3 as part of Amendment 75, and that the SADIS Provider State was prepared to disseminate such advisories via the SADIS broadcast upon receipt from the tropical cyclone advisory centres (TCAC). However, with regards to their availability from the TCACs, the group identified that there was a need to establish a clear picture (from the TCACs) as far as the plans to implement such advisories were concerned (Conclusion 16/20).

9.2   **Proposal for a fourth round of SADIS workstation software evaluations**

9.2.1   Recognizing that, since the last round of SADIS workstation software evaluations (2008/2009), there had been significant changes to the data disseminated (e.g. introduction of WAFS forecasts in the GRIB2 code form), implementation of the Secure SADIS FTP Service, and a number of additional changes brought about by Amendment 75 to Annex 3, the group agreed to undertake a fourth round of SADIS workstation software evaluations. The group reviewed and endorsed updated evaluation criteria, which would contribute to improvements and clarifications (Conclusion 16/21).

9.2.2   Furthermore, the group considered that it was necessary for all SADIS workstation software providers to be aware – ahead of any software evaluations – of the responsibilities that they would need to agree to when undertaking such evaluations (Decision 16/22).

9.3   **Ongoing investigation into SADIS 2G data losses**

9.3.1   The group recalled that for several years some concern had been expressed by the group regarding data losses in the transmission of data over SADIS 2G broadcast. Based on data monitoring over a one-year period, five different types of data issues had been identified. Moreover, available data logs from three locations (Netherlands, Switzerland and the SADIS Provider State) had been compared and showed little correlation amongst the data logs, which was an indication that the same data had not been missing at all the three sites. It appeared that all the sites seemed to have suffered from local reception issues, and that the transmission was of a high quality. It was further noted that the monitoring

of data losses at the SADIS gateway had been complicated by the fact that the SADIS comparator had not been operational. The group concurred that that the SADIS Provider State should restore the comparator functionality as soon as practicable and investigate the feasibility of obtaining and combining real-time data logs from separate reception sources in order to identify data that has truly been lost or corrupted in the transmission (Conclusion 16/23).

9.4   **Proposal to acquire an additional vadEGE 4200 unit for SADIS 2G hub infrastructure**

9.4.1   The group recalled that, to monitor the SADIS 2G signal, the SADIS Provider had installed a vadEGE 4200 unit. In order to have a true indication of what other SADIS 2G users received and exactly how the signal was processed, group supported that an additional vadEDGE 4200 be purchased by the SADIS Provider State, its primary role to align the SADIS Provider's reception equipment with the systems used by other SADIS 2G users (Conclusion 16/24).

9.5   **Distribution of WAFS forecasts in light of the increased use of the Internet-based services**

9.5.1   The group recalled that the provision of WAFS forecasts over satellite in the early days of the service had resulted in distinct areas of coverage (i.e. satellite footprints) which had effectively defined from which service (i.e. SADIS *versus* ISCS) user States would obtain their data, and that the service to be used by States was reflected in the regional air navigation plans. It was noted that, subsequent to the introduction of Internet-based dissemination of OPMET information (i.e. SADIS FTP and WIFS), the footprint had become "global". The group was pleased to note that "access rights" to the SADIS and ISCS services with respect to user States within the ASIA/PAC Regions had been addressed by the sixth meeting of the World Area Forecast System Operations Group (WAFSOPSG Conclusion 6/4 refers).

9.5.2   The group noted that States could receive data via SADIS FTP/Secure SADIS FTP services free of charge under exceptional circumstances, i.e. back-up purposes. It was noted that the maximum volume of data that could be received for this specific purpose had never been established. The group agreed that the time had come to establish such a threshold whereby any user exceeding the data volume threshold would be deemed to be using the service for operational purposes and would have to take part in the SADIS cost recovery scheme. It was further agreed that a State receiving OPMET data (including WAFS forecasts) operationally from both the SADIS and ISCS Provider States would have to participate in the SADIS cost recovery scheme (unless the State was a United Nations recognized Least Developed Country) (Conclusion 16/25).

— END —

ATTACHMENT 2

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **Annual statement of operational efficacy of SADIS 2010/2011**

I wish to inform you that the SADISOPSG, in Conclusion 16/4, instructed me to advise you that the operational efficacy of the SADIS had continued to be satisfactory, meeting all operational requirements since the SADISOPSG/15 Meeting (26 to 28 May 2010).

Theo L. van Stijn

ATTACHMENT 3

Ref.: SWG 5/1.4.1

21 June 2011

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **SADIS inventory 2011/2012**

        I wish to inform you that the SADISOPSG, in Conclusion 16/5, instructed me to forward to you the attached updated SADIS inventory.

Theo L. van Stijn

Enclosure:
  Updated SADIS inventory

ATTACHMENT

SADIS INVENTORY 2011/2012
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)~~ (including all additions following the implementation of Secure SADIS FTP) 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 2G hub infrastructure connection to the Met Office message switch (Frost) consists of a number of units developed in conjunction with ~~VADOS Systems~~ AEP Networks and other suppliers. These are installed either at Exeter or at the uplink site at Whitehill, Oxfordshire, UK.

The SADIS FTP and Secure 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").

Dell Poweredge R900 servers to provide SADIS FTP Service and Secure SADIS FTP Service (see section 1C).

ii) *Principally procured for SADIS*

a) At the Met Office

See section 1C for itemized components

b) communications between Met Office Exeter and Whitehill uplink facility

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

c) the uplink site (Whitehill)

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

(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 2G service~~s~~; and

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) 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 (FROST): Total investment, 1.02M[1] of which ~~1.71~~1.48 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) ~~1) Met Office Message switch (FROST): Total investment, 1.02M[1] of which 0.86 per cent is attributable to SADIS usage: switching data to operational (2G) broadcast service (excluding GRIB2) and to 2G monitoring system (Corobor Comparator);~~

1~~2~~) Met Office Message switch (FROST): Total investment, £1.02M[1] of which 1.02~~1.06~~ per cent is attributable to SADIS usage: switching data to operational (2G) broadcast service (including GRIB2) and to 2G monitoring system (Corobor Comparator);

> *Note: ~~Information regarding the cost with (2) and without (1) the WAFS GRIB2 data are provided since delivery of WAFS GRIB2 data over SADIS 2G has yet to be endorsed by SADISOPSG, and a date of provision decided.~~*
> *Note: WAFS GRIB2 data began to be transmitted operationally over SADIS 2G with effect from 18th November 2010.*

c) Allocated bandwidth 4 Mbps bursting to 8 Mbps between server and Internet Service Provider (ISP) in support of the SADIS FTP service;

d) At the moment Secure SADIS FTP bandwidth is sufficient to deal with foreseen data traffic, and will be monitored. It is expected that as take up of Secure SADIS FTP increases, a 'guaranteed' 4 Mbps bursting to 8 Mbps between server and Internet Service Provider (ISP) arrangement, similar to that used for existing SADIS FTP, may be needed.

e) NATS Message switch (CoreMet System)~~.~~:

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

f) 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.*

g) Met Office Service Desk equipment; and

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

h) 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 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) has procured a dedicated SADIS data backup arrangement with the ISCS Provider State. The backup infrastructure includes an ISDN connection between the NWS Telecommunications Gateway and the SADIS Gateway, and an ISDN connection between the SADIS Gateway and Whitehill uplink facility, to provision SADIS data backup. This hardware is currently undergoing final testing of functionality and process before becoming operationally acceptable.*

C. Hub equipment and services located at Exeter and Whitehill

Item	Description	Quantity
1.	**Whitehill services (leased from Cable & Wireless)**	
1.1	70 MHz to 140 MHz converters	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 4202	3*
2.2	ISDN 2e circuit	1
2.3	Interface cables	2

Note.— Hardware listed under Section 2 is located at Whitehill.

3.	**SADIS FTP Service**	
3.1	Dell Poweredge R900 servers with 1 Gb RAM	2
3.2	26.8 Gb internal disk drives	2
3.3	VMWave Virtual Platform with Red Hat Linux 5.3 OS	2
3.4	Intel Xeon X7350, 2.93 GHz Processors	2
3.5	Licenses, misc. support and maintenance costs	1

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

4.	**Secure SADIS FTP Service**	
4.1	Dell Poweredge R900 servers with 1 Gb RAM	2
4.2	Dell Poweredge R900 (4 core) servers with 32 Gb RAM*	2
4.3	Shared Storage Arrays (analogous to hard disk storage, but with dynamic upper limit)	2
4.4	VMWave Virtual Platform with Red Hat Linux 5.3 OS	2
4.5	Intel Xeon X7350, 2.93 GHz Processors	2
4.6	Licenses, misc. support and maintenance costs	1

Note - Item 4.2 relates to Digital Signing servers

54. **SADIS 2G Infrastructure**

54.1	FROST port	1
54.2	MegaPAC V-IX Base System Dual PSU including Chassis, 1 CP6000, and 1 switch.	2*
54.3	CP6000 for use with MegaPAC V-IX	1*
54.4	VadEDGE 4202	3*
54.5	Uplink modem (Comtech EF Data SDM-300a)	3*
54.6	Communications cabinet and lease	1
54.7	MegaWatch including Enterprise Reports, and PC	1
54.8	Comtech SDM300L demodulator (NER5 downlink)	1
54.9	Corobor comparator software and PC	1
54.10	Communications rack floor space at Exeter in IT hall 1 and IT hall 2, and at Whitehill	3
54.11	Space in stores at Exeter to locate spare hardware	1
54.12	WAN module	2
54.13	Comtech EF Data SMS 301 – redundancy switch	2*
54.14	BRI Module for VadEdge 4202	2
54.15	Interface cabling	8

Includes one unit/module stored as a cold spare.

      Note.─ Hardware listed under section 4 is located at Exeter and Whitehill.

2. PROCURED SERVICES

A. Space segment annual lease: 1.53MHz wide frequency band of which 4657 per cent is utilised to support SADIS 2G, with 64Kbps data rate (less communications overhead);

      Note. ─ SADIS 1G was terminated on 5 January 2009. The ~~percentage~~ allocation of satellite space segment reserved for SADIS 1G was finally relinquished on 31st December 2010. ~~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 (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.

24-hour Weather Desk support	*Skill*
1. Service Desk (first point of contact)	Incident Management ~~Scientific supervisor~~
2. Additional Service Desk operator	Customer Enquiries ~~Systems analyst~~

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. Technical Team Leader (TTL)	Technical Supervisor ~~Computer engineer~~
2. Networks and Systems Supervisor (NSS)	Service Continuity ~~Technical supervisor~~

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)	Process Specialist ~~Systems analyst~~

ii) Additional support

-Day support	*Resource*
1. Systems integration team ~~(Note 1)~~	14 staff-days of network computer engineer
2. Message Switching Manager	15 staff-days of MSS manager
3. Administrator	160 staff-days of executive officer
4. International aviation management	30 staff-days of manager
5. Data traffic	5 staff-days communications engineer
6. Contract Procurement and Management ~~(Note 2)~~	4 staff-days of senior procurement officer
7. Message switching Team ~~(Note 3)~~	15 staff-days of technical officer
8. Invoice Administration	20 staff-days of invoicing officer and 15 staff-days of business accountant

~~Note 1. Due to re-organisation and rationalisation within the Met Office's IT services division, the CIDA role is now included within the Network Computer Engineer's responsibilities. Effort required also significantly reduced since decommissioning of SADIS 1G.~~

~~Note 2. Reduced effort required since cessation of SADIS 1G.~~

~~Note 3. Responsibility for support and maintenance to the SADIS FTP service transferred from the Web Team to the Message Switching Team during 2009.~~

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 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).

24 hour support	*Resource*
1. Operational staff support	523 man-days per annum
2. Engineering staff support	22 man-days per annum

Day Support	*Resource*
3. SADIS administration support	50 man-days per annum
4. Engineering (including on-call)	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 2G service.

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ATTACHMENT 4

Ref.:   SWG 5/1.4.1   21 June 2011

To: Chairman, SCRAG

From: Chairman, SADISOPSG

Subject: **Procurement of an additional vadEDGE 4200 unit**

        I wish to inform you that the SADISOPSG, in Conclusion 16/24, instructed me to notify you that in considering a need to align the SADIS Provider State's SADIS 2G satellite reception equipment with systems used by users, the procurement of an additional vadEDGE 4200 unit as part of the SADIS 2G hub equipment was required. It was noted that the estimated cost of such equipment would be £1 650. The SADISOPSG noted that the unit may be used as an operational spare, should other identical units in the transmission process fail.

                                                Theo L. van Stijn