

**SADIS COST RECOVERY ADMINISTRATIVE GROUP  
(SCRAG)**

**FIFTH MEETING**

(Paris, 8 and 9 November 2004)

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

**REPORTS ON CONCLUSIONS OF THE SADISOPSG/9 MEETING**

(Presented by the Chairman of the SADIS Operations Group)

**1. Introduction**

1.1 This paper includes in **Attachments 1 to 4** the Executive Summary of the ninth meeting of the SADIS Operations Group (SADISOPSG/9, Dakar, 1-4 June 2004), as well as three specific Reports from the Chairman of the SADISOPSG Group on SADIS operational efficacy, inventory and implementation of the SADIS second-generation broadcast (SADIS 2G).

**2. Action by the Group**

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

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(16 pages)

## **NINTH MEETING**

### **SADIS OPERATIONS GROUP**

**(Dakar, Senegal, 1 to 4 June 2004)**

#### **EXECUTIVE SUMMARY<sup>1</sup>**

#### **1. INTRODUCTION**

1.1 The ninth meeting of the SADIS Operations Group (SADISOPSG) was held in the Western and Central African (WACAF) Regional Office, Dakar, 1 to 4 June 2004. The meeting was attended by 24 experts from ten States, the representative of the focal point of the EUR OPMET Bulletin Management Group (BMG) and three international organizations (the Agency for the Safety of Aerial Navigation in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA) and the World Meteorological Organization (WMO)).

1.2 The Chairman, Mr. T. J. Potgieter, presided over the meeting throughout its duration.

#### **2. FOLLOW-UP OF SADISOPSG/8 CONCLUSIONS AND DECISIONS**

2.1 With regard to the detailed follow-up of the conclusions, decisions and draft conclusions, the group noted that action had been completed on all of the issues except for Conclusion 8/18 c) which would be completed, as expected, after the SADISOPSG/9 Meeting (Decision 9/1).

#### **3. OPERATION OF THE SADIS**

3.1 With regard to the SADIS operational focal points, the group concurred that the focal points provided useful contacts for the SADIS Provider State and the ICAO regional offices to resolve operational issues and agreed that ICAO should consult all of the SADIS user States to make sure that the information included remained current and that the e-mail addresses were included, if available (Conclusion 9/2).

3.2 The group reviewed the operation of SADIS during 2003/2004 based on responses from 53 States to the annual questionnaire and the annual management report from the SADIS Provider State. The responses received showed that the number of reports of serious difficulties with the SADIS very small aperture terminal (VSAT) had remained low over the past year. However, the group expressed some concern about fundamental problems persisting in few States (e.g. total lack of reception). It was agreed that, based on the replies to the questionnaire, the SADIS Provider State would contact these States and users in order to propose solutions, and report back to the SADISOPSG as part of the report of the SADIS Operational Efficacy Assessment Team (Conclusion 9/4). The group concluded that the SADIS broadcast had continued to meet the operational requirements during the period under review (Conclusion 9/6). This statement would be sent to the Chairman of the SADIS Cost Recovery Administrative Group (SCRAG). With regard to the format of the questionnaire, the group considered that no changes thereto were required, except for the time

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<sup>1</sup> The full report is available at the following Web site: [www.icao.int/anb/sadisopsg](http://www.icao.int/anb/sadisopsg)

period to be considered (the cut-off date changed to February to ensure that the results were available in time for the SADISOPSG meetings) and the inclusion of a question related to the ability of the SADIS users to convert the WAFS SIGWX forecasts from the BUFR code form into charts (Decision 9/5).

3.3 To improve the timeliness of the analysis of the replies to the questionnaires, the group agreed that, in the future, there was no need to send the completed questionnaires to the SADIS Operational Efficacy Assessment Team since all relevant information was included in the tabulated format prepared by the Secretariat (Decision 9/3).

3.4 The group reviewed the SADIS inventory 2004/2005. In order to ensure that SADIS continued to meet the approved operational requirements, proposals for additional amendments to the inventory had been made by the SADIS Provider State. These included the FTP service available on the Internet. The updated inventory would be forwarded to the Chairman of the SCRAG (Conclusion 9/7).

3.5 With regard to the SADIS implementation, the group noted that the number of States and users had remained unchanged during 2003/2004 with eighty-six Contracting States now operating a total of 129 SADIS VSAT receivers. It was concluded that the potential growth had ceased due to the temporary cessation in the supply of new receivers and the fact that SADIS could now be considered as a mature system.

#### **4. CONTENT OF THE SADIS BROADCAST**

##### **4.1 OPMET data**

4.1.1 The group noted that the performance indices were base-lined in relation to the current Annex 1 to the *SADIS User Guide* (SUG). In view of their usefulness and relevance to SADIS users, the group agreed that the OPMET performance indices, together with the list of missing OPMET information (i.e. information included in Annex 1 to the SUG but not broadcast on the SADIS), should be forwarded to States concerned for appropriate follow-up (Conclusion 9/8).

4.1.2 Draft amendments to Annex 1 were brought forward by IATA which suggested, inter alia, that non-AOP aerodromes, for which no data was available, should be considered for deletion. The group concurred that, with these deletions, Annex 1 would better reflect reality. With regard to additional OPMET data requested by IATA, the member from the United States indicated that his State was prepared to provide all the OPMET information from the non-AOP aerodromes requested. The Secretariat was instructed to amend Annex 1 accordingly (Conclusion 9/9).

4.1.3 With regard to the format of Annex 1, it was agreed that consideration should be given to amend the format to render it compatible with a database-oriented approach to facilitate the updates of Annexes 2 and 3 to the SUG (Conclusion 9/10).

##### **4.2 WAFS forecasts**

4.2.1 The group noted that Annex 4, similar to all Annexes to the SUG, was currently kept up-to-date on the SADISOPSG website to correspond, as far as possible, to the actual content of the SADIS

broadcast; it was not proposed for inclusion in the hard copy version of the next edition of the SUG. The group endorsed Annex 4 as included on the website (Decision 9/11).

## **5. DEVELOPMENT OF THE SADIS**

5.1 Under this agenda item, the group reviewed progress on the future developments of the SADIS.

### **5.2 Report of the Gateway Development Team**

5.2.1 In connection with the report by the Rapporteur of the SADISOPSG Gateway Development Team, the group re-confirmed the need for real-time monitoring as currently carried out on the SADIS gateway and agreed that emphasis should continue to be placed on problem areas. The group agreed that, in order to maintain and improve the operation of the SADIS gateway, three specific issues should be pursued (Conclusion 9/12 and Decision 9/13);

- a) the development of regional guidance which would list the WMO abbreviated headers and ATS unit indicators associated with all SIGMET that may be generated within a region, by the ICAO regional offices concerned;
- b) the modification of the validation of SIGMET by the SADIS Provider State, in light of Amendment 73 to Annex 3; and
- c) the investigation of the impact of the introduction of BUFR-coded METAR/SPECI and TAF on the SADIS gateway operations by the SADIS Gateway Development Team.

### **5.3 Report of the Strategic Assessment Team**

5.3.1 Based on an update provided by the Rapporteur of the SADISOPSG Strategic Assessment Team, the group reviewed the content and format 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 9/14).

### **5.4 Report of the Technical Developments Team**

5.4.1 With regard to the implementation of the SADIS second-generation broadcast (SADIS 2G), the group agreed that the dual operations of the SADIS first-generation broadcast (SADIS 1G) and SADIS 2G should begin on 1 September 2004 and that the SADIS 1G should be terminated on 31 December 2008. This would allow a long enough transition period (i.e. more than four years) for all SADIS user States whilst it would minimize the additional costs related to the operation of a dual broadcast at the system level. The group agreed that, in order to facilitate the implementation of the SADIS 2G, the SCRAG and the States concerned should be informed about the implementation of the SADIS 2G and the expected termination of the SADIS 1G (Conclusion 9/15).

## **5.5 Report of the workstation software team**

5.5.1 The group noted the report by the Rapporteur of the SADISOPSG Workstation Software Team which indicated that there would be a need to fund the upgrade of at least 21 receivers and workstations operated by the least developed countries. Since funding via the SCRAG mechanism had been ruled out, the WMO VCP was considered to be the only viable option forward, provided sufficient donors were forthcoming. In order to promote this option, the group agreed that WMO should encourage donor States to contribute to the VCP for upgrading SADIS workstations. (Conclusion 9/16).

## **5.6 Visualization software for GRIB- and BUFR-coded WAFS forecasts**

5.6.1 The group noted with concern that, currently only one software vendor fully met the criteria established for visualization software and that the shortcomings of some software packages could have serious safety implications (e.g. the incapacity to depict tropical cyclones). The group was, however, encouraged by the fact that three other vendors were getting close to meeting the criteria. The group agreed that States and SADIS users should be informed by ICAO of those software packages that may be considered compliant while drawing their attention to the fact that a number of packages continued to exhibit serious shortcomings. Furthermore, in view of cost implications related to future software changes, States were invited to make suitable arrangements with software vendors for obtaining subsequent software updates under favourable conditions (Conclusion 9/17).

5.6.2 It was noted that the progress in developing visualization software for BUFR-coded WAFS SIGWX forecasts, compatible with Annex 3 provisions, had been slower than expected. Therefore, the group agreed, in principle, that the SIGWX forecasts in chart form should continue to be made available to SADIS users for a limited period of time beyond 1 July 2005. Since the future of SIGWX forecasts in chart form beyond 1 July 2005 was a global issue, the detailed arrangements should be addressed in a global context by the WAFSOPSG. The group emphasized that the solution should have minimum cost implications and should be of a temporary nature (Conclusion 9/18).

## **5.7 Enhanced two-way capability**

5.7.1 With regard to the first-generation two-way programme (SADIS 1G+), the group agreed that, the only remaining action was to inform the SADIS Cost Recovery Administrative Group (SCRAG) that the SADIS 1G+ had been discontinued as of 1 January 2004. (Conclusion 9/19).

5.7.2 Concerning the second generation two-way programme (SADIS 2G+), the initial results of the work of the ad hoc working group indicated that potential cost savings to the airlines of increased OPMET data availability could be significant. The availability of relatively inexpensive, commercial, off-the-shelf hardware appeared to make such a programme viable. However, the report identified some issues which made the production of a fully costed business case premature at this time. The group agreed that the ad hoc working group should undertake a further investigation in order to produce a full business case, which should be presented to the SADISOPSG/10 Meeting to minimize the period of uncertainty about the SADIS 2G+ and, to avoid that SADIS 2G equipment already purchased would have to be later upgraded (Conclusion 9/20).

## 5.8 **Internet-based FTP service**

5.8.1 The group was of the opinion that the time had come to include the components of the SADIS FTP service in the SADIS inventory, with the understanding that the users of the FTP service would continue to be considered SADIS users and would have to contribute to the mandatory cost recovery. The SADIS Provider State would not recover any of the initial capital costs associated with establishing the FTP service; only the costs associated with providing an on-going operational service were proposed for inclusion in the SADIS inventory, as of 1 July 2005. With the proposed change, the management of the SADIS FTP service would become part of the tasks of the SADISOPSG, and the SADIS users would be in a position to impact the development of the SADIS FTP service. It was noted that, prior to the formalization of the SADIS FTP service, the PIRGs concerned would have to be consulted (the (draft) Conclusion refers).

## 5.9 **Use of SADIS to carry ASHTAMs and NOTAMs for volcanic ash**

5.9.1 The group noted that the recent IAVWOPSG had confirmed the need for ASHTAM and NOTAM for volcanic ash on the SADIS and ISCS broadcasts and had invited the SADISOPSG to coordinate their inclusion accordingly. It was noted that, to implement this requirement, Annex 15 would have to be amended and that the amendment would not become applicable until November 2006. The group nevertheless agreed that the SADIS Provider State should start making arrangements to ensure that the SADIS gateway would be in a position to receive ASHTAMs and NOTAMs for volcanic ash, and was invited to present a proposal for an implementation plan at the SADISOPSG/10 Meeting (Conclusion 9/21).

## 6. **SADIS USER GUIDE**

6.1 The group reviewed the draft third edition of the *SADIS User Guide* (SUG) which had been updated by the SADIS Provider State, in coordination with the Secretariat. The draft third edition of the SUG incorporated all of the changes that had taken place, including those related to Amendment 73 to Annex 3. The Secretariat was tasked to place the updated third edition of the SUG on the SADISOPSG website. Furthermore, the SADIS Provider States would develop a new chapter related to the SADIS 2G which would be completed by the SADISOPSG/10 Meeting (Conclusion 9/22).

## 7. **FUTURE WORK PROGRAMME**

7.1 The group reviewed and updated its work programme and executive summaries for the tasks in the work programme (Decision 9/23).

**ATTACHMENT 2**

SWG 5/1.4.1

20 July 2004

To: Chairman, SCRAG  
From: Chairman, SADISOPSG  
Subject: **Statement of SADIS operational efficacy 2003/2004**

I wish to inform you that the SADISOPSG, in Conclusion 9/6, instructed me to advise you that the operational efficacy of the SADIS had continued to be satisfactory, meeting all operational requirements since the SADISOPSG/8 Meeting (7 to 10 July 2003).

T. Potgieter

SCRAG/5-WP/3

**ATTACHMENT 3**

SWG 5/1.4.1

20 July 2004

To: Chairman, SCRAG  
From: Chairman, SADISOPSG  
Subject: **SADIS inventory 2004/2005**

I wish to inform you that the SADISOPSG, in Conclusion 9/7 instructed me to forward to you the attached updated SADIS inventory.

T. Potgieter

**Attachment**  
Updated SADIS inventory

## APPENDIX D

### SADIS INVENTORY

*Note.— 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~~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 ~~and as listed (in part) in the ICAO ESCRAG/7 Meeting Report.~~*

#### 1. EQUIPMENT

##### 1.1 Hub infrastructure and communications circuits

1.1.1 The hub infrastructure connection to the MET Office message switch (FROST) consists of a number of units developed in conjunction with Astrium and other suppliers. These are installed either at ~~Bracknell~~Exeter or at the uplink site at Whitehills, Oxfordshire, UK. ~~The components of the original inventory changed when the two-way enhancement project was fully implemented.~~

##### *Solely procured for SADIS*

- ~~—————~~ a) ~~2 two way enhanced VSATs for enhanced two way capability;~~
- ~~—————~~ b) ~~SADIS gateway function software (developed specifically for the gateway as part of the NATS CoreMet system; see items under “Not procured principally for SADIS”).~~

##### *Principally procured for SADIS*

- a) at the Met Office
  - 1) product display console, including software;
- b) communications between Whitehill and Met Office
  - 1) 2 Fibre Optic 64 Kbps circuits
- c) at the uplink site (Whitehill)
  - 1) units forming part of a totally integrated rack structure, with back-up, referred to as Chain A and Chain B (see the list at Sections 4 and 5); and
  - 2) units and services leased from Astrium under contract to Cable and Wireless Communications Ltd.:

- 1 (70 to 140 MHz) convertor
- use of 1 (140 to C band) convertor
- use of satellite hub (lease represents only a very small part of this large aperture)

d) communication link (SVC) between SADIS Gateway and Met Office.

***Not procured principally for SADIS***

- a) message switch (FROST): total investment £1.5 1.1M of which 1.76 1.33 per cent is attributable to SADIS usage: switching data to operational (1G) broadcast service;
- b) message switch (FROST): total investment £1.1M of which 1.04 per cent is attributable to SADIS FTP usage: switching data to operational FTP service;
- c) message switch (FROST): total investment £1.1M of which 1.33 per cent is attributable to SADIS usage: switching data to 2G service
- d) allocated bandwidth between server and Internet Service Provider (ISP) in support of the SADIS FTP service; and
- e) ~~b) message switch (CoreMet System); and~~
- e) ~~communication link (SVC) between SADIS Gateway and Met Office.~~

*Note.— Some elements of this are exclusively for the support of the SADIS gateway function.*

**1.2 ISCS data back-up system**

- a) ISCS VSAT system, including receiver, cables, break unit and X25 frame relay switch.

*Note.— The equipment, including leases, listed above ~~under a) and b)~~, are being capitalized over the SADIS contract period.*

**1.3 ~~SADIS two-way development inventory of deliverable equipment~~ Hub equipment and services located at Exeter and Whitehill**

*Note.— An asterisk (\*) denotes equipment reused from original broadcast system.*

<i>Item</i>	<i>Description</i>	<i>Quantity</i>
1.	<b>Bracknell Exeter Equipment</b>	
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*
2.	<b>Bracknell Exeter Equipment (Spares)</b>	
2.1	Telecoms interface units Megabox	2
2.2	NMS Spare CPU	
2.3	MemoTech PAD (for NMS)	1*
2.4	CX1000 Frame Relay Switch (for NMS)	1
3.	<b>Communication link Whitehill /-Bracknell Exeter</b>	
3.1	Fibre optic 64 Kbps circuits	2*
4.	<b>Whitehill earth station (uplink equipment)</b>	
4.1	Telecoms controller Megapac V rack assembly	2
4.2	Station interface unit (SIU)	2
4.3	8360 Modulator	2*
4.4	8471 Receive Demodulators	12
4.5	8550 Modem Switch	1*
4.6	140 - L band upconverter	2
4.7	X Term NMS simulator	1
4.8	Equipment Rack Assembly (Chain 1)	1*
4.9	Equipment Rack Assembly (Chain 2)	1
5.	<b>Whitehill earth station (spares)</b>	
5.1	8471 Receive Demodulators	1
5.2	Station interface unit (SIU)	1
5.3	Megapac V rack assembly	2
5.4	Mega PACV Frad units	2
5.5	140 - L band upconverter	1
5.6	8360 Modulator	1
5.7	8550 Modem Switch	1
6.	<b>Whitehill services (leased from Astrium under contract to Cable &amp; Wireless)</b>	
6.1	70 MHz to 140 MHz converters	2*
6.2	140 MHz to C band converter	2*
6.3	Satellite Hub leased bandwidth	1 slot*

<i>Item</i>	<i>Description</i>	<i>Quantity</i>
7.	<b>TWO-WAY VSAT Systems (2 in number)</b>	
7.1	<del>Channel master 2.4 metre type approved antenna</del>	2
7.2	<del>5 watt C Band Outdoor unit assembly</del>	2
7.3	<del>Low noise block downconverter</del>	2
7.4	<del>RF Integration kit</del>	2
7.5	<del>Indoor unit rack assembly</del>	2
7.6	<del>Station interface unit (SIU)</del>	2
7.7	<del>8471 Receive Demodulators</del>	2
7.8	<del>Telecoms interface units Megabox</del>	2
7.9	<del>8371 Modulator</del>	2
7.10	<del>Tool kit</del>	2
7.11	<del>Cross-site cables set</del>	2
8.	<b>Test Rig at Poynton</b>	
8.1	Enhanced Simulator	1
9.	<b>Communications equipment for SADIS second generation (2G) trial</b>	
9.1	<del>FROST or TROPICS port</del>	1
9.2	Megapac	+4
9.3	QPSK Modulator	1
9.4	QPSK De-Modulator/Receivers	2
9.5	Modem running Viterbi or Turbo coding with concatenated Reed-Soloman coding	1
9.6	ISDN service between Bracknell and Whitehill	1
9.7	ISDN call charges for the duration of the trial	
10.	<b>ISDN back-up service to Washington (NWSTG)</b>	
10.1	Mega PAC 2003 router (MP-2003)	1
10.2	Mega PAC 2003 router plus expansion (MP-2003-3-B)	1
10.3	ISDN 2e circuit	1
10.4	A/B switch	1
10.5	Interface cables	1
<i>Note.— Hardware listed items under Section 10 are located at Whitehill.</i>		
11.	<b>SADIS FTP service provision</b>	
11.1	HP L2000 servers with 2Gb RAM	
11.2	18Gb internal disk drives	2
11.3	built in DVD-ROM	
11.4	Processors	2
<i>Note.— The SADIS FTP service as of 1 July 2005.</i>		

## 2. 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 Whitehills site equipment which is not leased; and
- c) gateway function:
  - 1) communication link between Met Office and NATS infrastructure site; and
  - 2) system maintenance.

## 3. ANNUAL STAFF REQUIREMENTS

### 3.1 Met Office of the UK

#### *Help desk*

*Note.— The Help 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 a call-out capability.*

<i>Normal working hours</i>	<i>Grade and skill</i>
1. Help desk (first point of contact)	Scientific supervisor

*Note.— Outside normal working hours, the helpdesk facility is provided by the 24-hour positions below.*

<i>24-hour support</i>	<i>Grade and skill</i>
<del>1. Help desk (first point of contact)</del>	<del>Scientific supervisor</del>
<del>2. Operational supervisor</del>	<del>Technical meteorologist</del>
<del>3. Systems supervisor</del>	<del>Computer engineer</del>
<del>4. HQ maintenance support</del>	<del>Telecommunication technical officer</del>
2. Operations systems analyst	Systems analyst
3. Production systems analyst	Systems analyst
4. Networks and services engineer	Computer engineer
5. Networks and systems supervisor	Technical supervisor

#### *Additional support*

*Note.— The total support for SADIS is considered as ~~10%~~ 1 percent of the total support offered by the four posts provided by the help desk and operational support function. These four posts are directly involved with SADIS operations and form part of a total roster of eight different skills and functions: comprise 4 X 24-hour rosters of six staff each and a three-man team providing the normal-working-hour help desk.*

### ***Additional support***

<i>Additional support</i>	<i>Grade and skill</i>
1. Systems integration team	2 per cent of engineer 20 per cent of network computer engineer
2. Administrator	55-75 per cent of executive officer 70 per cent of support specialist and meteorologist (providing support to ICAO Regions, SADIS users and SADIS User Guide)
3. International aviation management	15 per cent of manager
4. Data traffic	5 per cent communications engineer

*Note.— As a result of the audit of SADIS costs required by SCRAG, the help desk costs have been re-assessed and reduced to a level of 1 per cent of the total support offered.*

### ***Development & enhanced two-way field trial support and other projects***

<i>Other projects</i>	<i>Grade and skill</i>
1. Manpower	10 per cent of engineer 10 per cent of data traffic manager
2. Budgets	Travel/Expenses (Consultants fees etc.)

### ***SADIS second generation (2G) trial***

<i>Second generation trial</i>	<i>Grade and skill</i>
1. Manpower	5 per cent of engineer 5 per cent of specialist
2. Budgets	Engineering consultancy

### ***SADIS second generation (2G) operational implementation project***

<i>Second generation roll-out</i>	<i>Grade and skill</i>
1. Manpower	15 per cent project manager 15 per cent network computer engineer

2. Budgets
- 5 per cent engineering consultancy for systems support and maintenance  
Engineering consultancy

3.2 NATS infrastructure site (OPMET Gateway function)

*Note.— See also note under 3.1 "Help desk" above.*

<i>24 hour support</i>	<i>Grade and skill</i>
1. Operational staff support	50 per cent of air traffic services assistant
2. Engineering staff support	<del>20</del> 10 per cent of systems engineer 75 per cent of day support engineer
3. SADIS administration support	50 per cent of air traffic services assistant

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**ATTACHMENT 4**

SWG 5/1.4.1

20 July 2004

To: Chairman, SCRAG  
From: Chairman, SADISOPSG  
Subject: **Implementation of the SADIS second-generation broadcast (SADIS 2G)**

I wish to inform you that the SADISOPSG, in Conclusion 9/15 a), instructed me to advise you that the SADIS 2G will be implemented on 1 September 2004 and that the SADIS 1G will remain operational until 31 December 2008 to cater to those States and SADIS users which will not be in a position to purchase new receivers until 2008.

T. Potgieter